



Investing in rural people

# Rural Development Report 2016

Fostering inclusive rural transformation





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## Abbreviations and acronyms

ACET	African Center for Economic Transformation
AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
APR	Asia and the Pacific
ASM	artisanal and small-scale mining
ATI	agricultural technological innovation
BRAC	Bangladesh Rural Advancement Committee
CIS	Commonwealth of Independent States
CKW	community knowledge worker
CNOP-G	National Confederation of Famers' Organizations of Guinea
CONEVAL	National Council for the Evaluation of Social Development Policy (Mexico)
DCA	dairy commercialization area
DFID	Department for International Development
DSM	demand-side management
EAC	East African Community
EAFF	East African Farmers' Federation
EALA	East African Legislative Assembly
ECLAC	Economic Commission for Latin America and the Caribbean
ESA	East and Southern Africa
ESCAP	Economic and Social Commission for Asia and the Pacific (United Nations)
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
GDP	gross domestic product
GMO	genetically modified organism
IHERD	Innovation, Higher Education and Research for Development
IFPRI	International Food Policy Research Institute
ILO	International Labour Organization
IOM	International Organization for Migration
IPEA	Institute of Applied Economic Research
IWRM	integrated water resource management
LAC	Latin America and the Caribbean
MERET	Managing Environmental Resources to Enable Transition to More Sustainable Livelihoods (Ethiopia)
MFI	microfinance institution
NAADS	National Agricultural Advisory Services (Uganda)
NBER	National Bureau of Economic Research
NBSC	National Bureau of Statistics of China
NEN	Near East, North Africa, Europe and Central Asia
NENA	Near East and North Africa (subregion of NEN)
NERICA	New Rice for Africa
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
OPM	Oxford Policy Management
PPP	purchasing power parity
R&D	research and development

RCT	randomized controlled trial
REDD+	Reduced Emissions from Forest Degradation and Deforestation
RNFE	rural non-farm employment
RODW	rest of the developing world
ROSCAs	rotating savings and credit associations
RT	rural transformation
SATIIM	Sarstoon Temash Institute for Indigenous Management (Belize)
SDG	sustainable development goal
SMEs	small and medium-sized enterprises
SSA	sub-Saharan Africa
ST	structural transformation
TFP	total factor productivity
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNRISD	United Nations Research Institute for Social Development
WCA	West and Central Africa
WDI	World Development Indicators
WHO	World Health Organization
WFP	World Food Programme
WUWM	World Union of Wholesale Markets

## Foreword

In the years since IFAD's *Rural Poverty Report* was published in 2011, the world has undergone rapid changes that are altering the development landscape. The global economy has experienced major structural shifts, with the emergence of stronger markets in middle-income economies, rising urbanization and demand for food, and several low-income developing countries registering the world's fastest growth rates. At the same time, climate change, erratic energy prices and complex and protracted conflicts have delivered a variety of shocks. Several regions have seen large-scale population displacements within and across national borders, and the social and political upheavals linked to unemployment are deepening. Despite impressive reductions in poverty and undernourishment globally, that progress has been uneven, and economic inequality across the developed and developing world alike is increasing.

Against this backdrop, world leaders have agreed on an ambitious development agenda that seeks to end poverty and hunger by 2030. Agenda 2030 has explicitly recognized the central role that rural development plays. Smallholders still dominate agricultural systems in developing countries and they are still key to food security. However, they also face long-standing barriers to accessing resources, technology, inputs, finance, knowledge and markets. As a result, smallholders lack resilience and the capacity to take advantage of emerging opportunities.

Therefore, while global economic changes offer the possibility of accessing new markets, expanded entrepreneurship and new kinds of livelihoods in the agrifood sector and beyond, at the level of individual rural women and men the risks and barriers are often still too great. Hence a transformation of rural areas is needed to enable rural people to capitalize on changes in the world around them, rather than be further marginalized by them.

A distinguishing feature of this report is that it examines rural development in the context

of the transformation of rural areas and the wider economy – i.e. rural transformation and structural transformation. By embedding rural development within rural transformation, and that within structural transformation, developments in urban and rural areas can be viewed together and seen to be interconnected.

This report defines inclusive rural transformation as a process in which rising agricultural productivity, increasing marketable surpluses, expanded off-farm employment opportunities, better access to services and infrastructure, and capacity to influence policy all lead to improved rural livelihoods and inclusive growth. Inclusive rural transformation is thus a critical component of inclusive growth as a whole, and of sustainable development in all its dimensions – social, economic and environmental. It is both a vision and a lens through which to interpret historical processes in rural areas across the world.

Thus, this report is about transformation, but not just any transformation; it is about transformation that is inclusive and that brings rural people into the economic mainstream and the benefits of the twenty-first century economy. This report is also about choices, starting with the programmatic and policy choices of governments and local, regional and global development practitioners. A key question that they must ask is, what actions can they take to stimulate and support inclusive rural transformation?

Based on extensive research, this report attempts to answer this and other questions. Among the important premises of the report is that there is no natural incentive mechanism in economic transformation processes that protects the interests of marginalized groups. Inclusive rural transformation is, therefore, far from automatic. Rather, it is a choice. It does not just happen; *it must be made to happen*.

Rural transformation can lead to numerous positive developments in the lives of people and their nations, such as growth in life expectancy, improvements in education, health, water

and sanitation, increased rural and urban employment opportunities, and empowerment of women and minority and disadvantaged groups. But a range of political, social, economic and environmental imbalances and inequities may occur as well. Economic transformation may be inevitable, as the world changes, but inclusiveness is a *choice*.

Countries need to take specific actions – and make specific policy choices and investments – to enable rural people to seize the opportunities and deal with the threats that come with transformation processes. IFAD’s experience over nearly four decades has shown that when rural people can organize themselves and have reliable access to land and other natural resources, technologies, finance and markets, both their livelihoods and their communities can flourish. Inclusive rural transformation can be promoted through people-centred development in which “beneficiaries” become agents of their own development, participating in decision-making, implementation and the process of rural transformation itself.

Action is needed to address the threats facing smallholder farmers, rural small and medium enterprises, women, youth and indigenous peoples. This report seeks to provide a solid foundation upon which those actions can be based. While rural development strategies need to be context specific, and include policy reforms, institutional innovations and investments, clearly they need to appropriately value the role of agriculture and the rural economy, and the great potential of rural people themselves as agents of inclusive transformation.



KANAYO F. NWANZE  
President of IFAD



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# Development context and main messages

Since IFAD's Rural Poverty Report was published in 2011, the global economy has continued to experience persistent and major structural shifts, with "emerging market" middle-income economies and several low-income developing countries registering the world's fastest – albeit slowing – growth rates, impacting commodity and financial markets in unprecedented ways. In this period, extreme weather events have increased in frequency and severity, and complex and protracted conflicts in several regions have created fragile situations resulting in large-scale population displacement within and across borders. Social and political challenges linked to unemployment, particularly of youth, are deepening. In response to the burgeoning and diversifying demand for food, global and country-level value chains for major staples and high-value products are consolidating rapidly.

These newer dynamics are mixing with prevailing ones to present novel challenges and opportunities for rural people and rural areas across the globe. For instance, urbanization, demographic shifts, the growing integration of food supply chains and food systems, and rising domestic and foreign investment in the agrifood sector all combine to generate new risks in agrifood markets for rural women and men operating in agriculture and the broader food systems. But they also produce new opportunities for entrepreneurship and for employment upstream and downstream in the agrifood value chains – in processing, transport, input provision, and developing and servicing technology, infrastructure and equipment. Rapid diffusion of digital devices and greater internet access mean that information and knowledge about agrifood systems can be generated and shared with ever-increasing timeliness, speed and accuracy, but not necessarily equally. Climate change is leading to increased concern about the sustainability of established agricultural practices, but also

creating new opportunities for rural households and communities to generate new benefit streams through improved management of natural resources.

Recognizing that smallholder farmers dominate rural landscapes across the developing world, the 2030 Sustainable Development Agenda commits to providing smallholders with more and higher quality means to foster this transformation. Smallholders face long-standing barriers to accessing productive resources, technology, inputs, finance, knowledge and markets. Wide spatial dispersion of production, high transport costs and seasonality result in high market price risk and aggravate unequal financial bargaining power. Subsistence-oriented production and limited market access, therefore, persist. At the same time pressures on the rural natural resource base are growing, linked to population growth, unsustainable agricultural practices, urbanization, mining, land-use conversion and deforestation. Under these strains, the agricultural systems on which most rural dwellers depend face major challenges to meet the burgeoning demand for food, feed and fibre, thus compromising food security in several places.

In order to meet these emerging challenges and opportunities – and improve prospects for the achievement of several Sustainable Development Goals – rural areas must transform rapidly and inclusively. Within rural areas, households have widely differing capacities to generate income from increasingly important non-farm sources, implying sharp differences in their abilities to participate in the mainstream of rural economies.

IFAD's 2016 Rural Development Report aims to shed light on this evolving rural landscape in order to inform the programmatic and policy choices of local, regional and global development practitioners, including IFAD. The Report examines rural development through the prism of the transformation of rural areas and the wider economy, yielding the following five main messages:

**1. Rural transformation does not happen in isolation, but as part of a broader process of structural transformation shaped by the interlinkages between agriculture, the rural non-farm economy, manufacturing and services. Rural transformation is essential for structural transformation.**

Rural transformation occurs within a broader process of economy-wide structural transformation that countries experience. It involves rising agricultural productivity, commercialization and diversification of production patterns and livelihoods within the agricultural sector and the rural non-farm sector. Productivity growth in agriculture and the rural non-farm economy provides the food supply to meet the demands of urban growth and transformation, and releases labour to other sectors, such as manufacturing and services. The outcomes of agriculture and the rural non-farm economy reflect and determine, therefore, the pathway of structural transformation. Simultaneously, rural transformation is shaped by the growth and diversification of the demand for food and raw materials from these sectors. These interacting forces define pathways and levels of rural transformation, which, in turn, shape opportunities for, and constraints to, rural development and its sustainability and inclusiveness.

**2. While rural transformation may generate both positive and negative effects for rural people, inclusive rural transformation must be made to happen; it will not happen automatically.**

Rural transformation alters the structure of landholdings, the technologies in use, the capabilities of rural women and men, and the distribution and dynamics of the population and labour force. Multiple benefits are generated, extending well beyond rural areas. The forces underpinning rural transformation may create conditions for many favourable social impacts – growth in life expectancy, improvements in education, nutrition, health, water and sanitation, and empowerment of women. But myriad political, social, economic, and environmental imbalances and inequities may arise as well. Traditional

identities, social cohesion and the potential for collective action may be threatened, negatively affecting the prospects for inclusion. Inclusive rural transformation is, therefore, far from spontaneous. It does not just happen; *it must be made to happen.*

Inclusiveness of transformation is an empirical issue, highly specific to location, identities, and the prevalent social and economic conditions. Governments, development agencies and other stakeholders seeking to design and implement rural development strategies that promote inclusive rural transformation need answers to three questions: What are the different pathways (or patterns) of structural and rural transformation across the developing world? What are the consequences of transformation for rural poverty reduction and inclusion? What can be done to stimulate and support inclusive rural transformation?

**3. Rapid rural or structural transformation, while necessary, do not automatically lead to a rapid reduction in rural poverty.**

In general, countries that achieved higher levels of structural transformation are also more rurally transformed or experience faster rural transformation and poverty reduction. Rapid reduction in rural poverty in the absence of rapid structural and/or rural transformation is rare. In a sample of 60 countries, only one country has managed to reduce poverty in the absence of rapid transformation. However, several fast-transforming countries have *not* managed to transform in an inclusive fashion – rural poverty remains despite a transforming economy. Structural and rural transformations may be necessary for rural inclusion, but they are not sufficient. The role of rural transformation is particularly powerful. Evidence suggests that where structural transformation proceeds slowly, but policies and investments lead to fast rural transformation, relatively rapid rural inclusion is possible.

In order to achieve and sustain rural inclusion, not only must countries transform quickly, they must also take specific policy and programmatic actions to enable and empower rural people to seize the opportunities and

address the threats and challenges associated with the transformation processes. Where rural people are able to organize themselves to achieve reliable access to land and other natural resources, productive inputs and technologies, finance and market outlets, and participate in decision-making, they become central actors and beneficiaries in rural transformation processes. As there is no naturally dynamic incentive mechanism in structural or rural transformation processes that protects the interests of marginalized groups, threats facing smallholder farmers, rural agrifood small and medium enterprises (SMEs), women, youth and indigenous peoples need to be identified and properly addressed.

**4. Inclusive rural transformation hinges on agriculture, which retains its importance as the transformation unfolds, but requires that distinct agricultural policies be adopted at different stages of rural transformation.**

Because of strong interactions between structural transformation and the agrifood system, the national and subnational political economy of inclusive rural transformation hinges on the role and importance assigned to agriculture as the transformation unfolds.

At relatively low levels of structural transformation, *"agriculture-boosting"* approaches to rural development are required. These aim to spur rapid and broad-based agricultural productivity growth across the board. Leaders must find ways to focus sharply and steadily on agriculture despite myriad value-destroying constraints that render the aim of spurring broad-based productivity growth extraordinarily difficult to achieve.

As structural transformation reaches higher, but still moderate levels, *"agriculture-modernizing"* approaches are required. These should be designed to facilitate the transition to greater specialization and diversification in production and trade for increasing numbers of smallholder farmers and rural SMEs. Leaders must build and sustain political momentum for expanding and deepening the agriculture-based rural economy and its diversification within and beyond agriculture.

At high levels of structural transformation, *"agriculture-sustaining"* approaches are required for an agricultural sector that, despite its relatively small size and shrinking shares in output and employment, has a long and potent reach into several other parts of the economy and society. As leaders respond to legitimate demands for the generation of increasingly vital public goods from agrifood systems, they must also give voice and representation to rural groups still directly dependent on agriculture and agricultural value chains for their livelihoods, many of which remain meagre and vulnerable.

**5. Rural development strategies for inclusive rural transformation are context-specific, but have a similar direction, with high-priority policy reforms, institutional innovations and investments dependent on the speed and inclusiveness of the transformation pathways to date.**

There are many ways in which countries, and the regions within them, can transform and be inclusive. The analysis suggests four categories of transformation and inclusion into which most countries and regions fall, each with distinct objectives for rural development strategies to promote inclusive rural transformation:

(1) Relatively fast transformers/fast includers should aim to **adapt** to changing conditions so as to sustain progress and address issues inherent in rapid growth.

(2) Relatively fast transformers/slow includers should aim to **amplify** the benefits of growth by expanding the reach of benefits and opportunities to rural populations and minority groups while sustaining the speed of transformation.

(3) Relatively slow transformers/fast includers should aim to **accelerate** the pace of transformation without sacrificing its inclusiveness.

(4) Relatively slow transformers/slow includers should aim to **amplify** the benefits of growth **and accelerate** the pace of transformation, seeking to both expand the reach and speed up the generation of benefits.

Pressure points, policy reforms, institutional innovations and investments vary across categories. Thus, fostering inclusive rural transformation is about making the right strategic choices in different contexts – and this is part art, part science. The art lies in generating and sustaining political momentum for prioritizing agriculture, rural areas and evolving agrifood systems as structural transformation unfolds, deepening and expanding the socio-economic mainstream. The science lies in designing and implementing policies, institutions and investments that draw ever-increasing numbers of rural people into that mainstream. Neither is straightforward. Problems of performance and equity within agriculture, rural areas and agrifood systems are deep, recurring and widespread.

The core strategic choices revolve around ensuring that the poor and marginalized are drawn into the policies, institutions and investments that can ameliorate the distributional consequences of rapid transformation. The complexity and continuity of the strategic challenges are as potent as the context-specific

and pathway-determined strategic opportunities. IFAD and its country partners have long recognized the importance of considering rural people as part of the solution, and must continue to do so, focusing on actions that facilitate their inclusion during the different stages of structural and rural transformation. The link of these findings and implications to the global rural development agenda and, more broadly, to the 2030 Agenda for Sustainable Development is clear, powerful and affirmative. Hundreds of millions of rural people will be key actors in developing sustainable development solutions.

This Report focuses on inclusive rural transformation as a central element of the global efforts to eliminate poverty and hunger, and build inclusive and sustainable societies for all. The policy and programme implications in various regions and thematic areas of intervention are based on both rigorous analysis and IFAD's 40 years of experience investing in rural people and enabling inclusive and sustainable transformation of rural areas.

# Overview and synthesis



## Rural development for growth and poverty reduction

Recent progress against poverty has been steady across the globe (figure A). But in most regions, poverty rates in rural areas still stand well above those in urban areas. These trends reflect the continuing challenges facing rural areas linked to the social, economic and political marginalization of rural people. Small family farms dominate rural landscapes across the developing world, accounting for up to 80 per cent of food produced in Asia and sub-Saharan Africa, while supporting livelihoods of up to 2.5 billion people (IFAD 2015). Yet these farmers face long-standing barriers to accessing technology, finance, knowledge and markets. At the same time, pressures on the rural natural resource base are growing, linked to

population growth, unsustainable agricultural practices, urbanization, mining, land-use conversion and deforestation. Under these strains, the agricultural systems on which most rural dwellers depend face major challenges to meet the burgeoning demand for food, feed and fibre (IFAD 2015). Rural households have widely differing capacities to generate income from increasingly important non-farm sources, implying sharp differences in their abilities to participate in the mainstream of rural economies (Haggblade et al. 2010).

Not surprisingly, when viewed as successful in overcoming these myriad challenges in rural areas, rural development is one of the most reliable and potent forces for poverty reduction and broad-based social and economic development. The evidence is strong and

FIGURE A Globally, extreme poverty has been significantly reduced but rural areas still lag behind

Trends in rural and urban extreme poverty by region, 1999-2011



Notes: APR = Asia and the Pacific; LAC = Latin America and the Caribbean; ESA = East and Southern Africa; WCA = West and Central Africa; NEN = Near East, North Africa, Europe and Central Asia.  
Source: IFAD, based on World Bank (2015c).

clear that sustained investment to enhance productivity in agriculture and the broader rural economy has a large impact on both growth and poverty reduction (Fan 2008; Fan et al. 1999, 2002). The impact pathways are both direct – through increased incomes and enhanced food and nutrition security – and indirect – through improved education, health care and other important services.

A distinguishing feature of this report is that it examines rural development in the context of the transformation of rural areas and the wider economy – rural transformation and structural transformation (figure B). By embedding rural development within rural transformation, and that within structural transformation, developments in urban and rural areas can be viewed together and be seen to be interconnected. Productivity growth in agriculture provides the food supply for urban growth and transformation, and releases labour to other sectors, such as manufacturing and services; simultaneously, rural transformation is shaped by the growth and diversification of the demand for food and raw materials from the urban economy. From the point of view of rural areas, therefore, the report takes account of both supply and demand for goods, labour, capital and technology. At issue are the implications for rural development and rural transformation of deep and rapid demand-side changes in global and national factor markets and agrifood value chains. Pathways and levels of structural and rural transformation are shown to shape both opportunities and constraints to rural development and its inclusiveness.

The economic options and supportive policies for rural development that promote inclusive rural transformation vary considerably. Simplistic narratives are inadequate to explain observed patterns of development. Countries and regions within countries have many ways to transform themselves, and a given structural trend has many variations in how it translates into social development and inclusion. But paramount is the need to expand access for rural people to the range of new opportunities available, and to protect them from threats to such enhanced access.

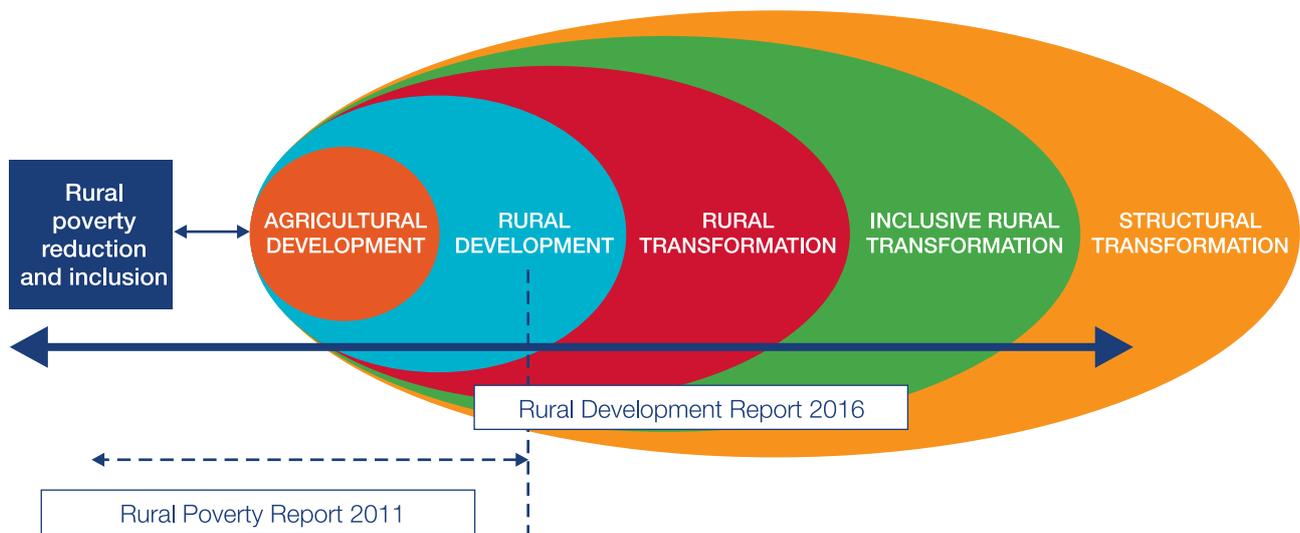
## Rural areas in a challenging global context

Five years ago, when IFAD published the second *Rural Poverty Report* with the theme *New Realities, New Challenges: New Opportunities for Tomorrow's Generation*, the world was still in the early stages of recovery from the devastating effects of the “perfect storm” of high food and fuel prices and of the financial market instability that had pummelled economies across the globe and swelled the global undernourished population by 100 million (IFAD 2011). But as countries rebounded – and many did so quite quickly – a new reality set in.

Advanced industrial economies recovered, but slowly and incompletely. Growth and employment rates in most of these countries have yet to return to pre-crisis levels. Leading the global recovery were the so-called “emerging market” middle-income countries, with many low-income countries also showing signs of having found new sources of vibrant growth. In 2015, all of the world's 20 fastest-growing countries were middle- and low-income countries in Asia, sub-Saharan Africa and Latin America. Sub-Saharan Africa alone accounted for five of the top 10 (World Bank 2015a). While many of these fast-growing countries have extremely low levels of per capita gross domestic product (GDP), derive the majority of their export value from minerals, have sparse physical infrastructure and show deep human capacity gaps, the conclusion is indisputable: the drivers of growth and change in the global economy of 2016 are fundamentally different from those of 2011.

New sources of instability have also emerged. As this document goes to print, growth in China and other emerging market economies, while still rapid compared with that in most countries, has slowed considerably, depressing commodity markets and sending unexpectedly deep and prolonged shock waves through financial markets worldwide. Other sources of instability are linked to complex and protracted conflicts in several regions, resulting in large-scale population displacement within and across borders. The number of people forcibly displaced at the end of 2014 had risen to

FIGURE B Agricultural development, rural development and rural transformation are intertwined with other large processes



### AGRICULTURAL DEVELOPMENT

Agricultural development is about improving the quality of life and economic well-being of farmers, herders and agricultural workers. It focuses on the exploitation of land-intensive natural resources such as agriculture, livestock, forestry and fisheries. It involves improving agricultural services, agricultural incentives and technologies, and the resources used in agriculture, such as land, irrigation, human capital and rural infrastructure.

### RURAL DEVELOPMENT

Rural development is the process of improving the opportunities and well-being of rural people. It is a process of change in the characteristics of rural societies. In addition to agricultural development, it involves human development and social and environment objectives, as opposed to just economic ones. Therefore, rural development encompasses health, education and other social services. It also uses a multisector approach for promoting agriculture, extracting minerals, tourism, recreation and niche manufacturing.

### RURAL TRANSFORMATION

Rural transformation (RT) involves rising agricultural productivity, increasing commercialization and marketable surpluses, and diversification of production patterns and livelihoods. It also involves expanded decent off-farm employment and entrepreneurial opportunities, better rural coverage and access to services and infrastructure, and greater access to, and capacity to influence, relevant policy processes. All of this leads to broad-based rural (and wider) growth, and to better managed, more sustainable rural landscapes.

### INCLUSIVE RURAL TRANSFORMATION

With inclusive rural transformation everyone, without exception, can exercise their economic, social and political rights, develop their abilities, and take advantage of the opportunities available in their environment. This leads to a marked improvement in the economic position and quality of life for small farmers, land poor and landless workers, women and youth, marginalized ethnic and racial groups, and victims of disaster and conflict.

### STRUCTURAL TRANSFORMATION

Structural transformation (ST) is both a cause and an effect of economic growth. It involves rising productivities in agriculture and the urban economy, a change in the composition of the economy from a preponderance of agriculture to industry and services, rising involvement in international trade, growing rural-urban migration and urbanization, and the realization of a demographic transition from high to low birth rates. It leads to profound political, cultural, social and environmental stresses, which must be managed for long-term sustainability.

Source: Authors.

59.5 million from 51.2 million in 2013 and 37.5 million in 2004, with 13.9 million displaced in 2014 alone (UNHCR 2015).

Some long-standing challenges are deepening, with unemployment, exceptionally so in both the developed and developing world, but particularly in countries with continued rapid population growth. Conditions of employment are changing fast, strongly affecting the nature and quality of associated livelihoods in rural and urban areas (ILO 2015). Urbanization is proceeding everywhere, at different speeds, but often with problematic effects on social inclusion and on the environmental footprint of urban areas.

Linked to population growth, urbanization and dietary changes, global demand for food is expected to increase by over 60 per cent by 2050, requiring rapid agricultural productivity growth and putting more stress on natural resources. Global and national value chains for major staples and for high-value products are consolidating rapidly, with far-reaching implications for access and participation of smallholder farmers and rural SMEs (Reardon and Timmer 2007; Reardon et al. 2009). The increasing complexity of food systems points to greater competition for food items from non-food uses such as biofuels, possibly leading to a tightening of demand and higher food prices over the long term. Volume and quality standards and requirements in agrifood value chains are growing in importance and coverage. Finally, climate change is generating new challenges for all sectors, but especially in weather-dependent agriculture (IPCC 2014).

Several of these challenges also represent new opportunities for rural people and the rural sector. In particular, demographic growth, urbanization, the growing integration of food supply chains and food systems, and rising domestic and foreign investment in the agrifood sector, all combine to generate new potential opportunities for rural women and men operating in agriculture. They also produce new opportunities for entrepreneurship and for employment upstream and downstream in the agrifood sector – in processing, transportation, input provision and in the development

and servicing of technology, infrastructure and equipment. Increasing concern with environmental sustainability with climate change also creates new opportunities for households and communities to have stable access to or control of natural resources.

Rapid diffusion of digital devices and greater Internet access have led to an explosion of data and information around the world, creating new opportunities and challenges. Knowledge can be generated and shared with ever-increasing speed and accuracy, and the range of possible partnerships is surging. But while digital technologies are expanding global knowledge, they are not necessarily democratizing it. Many key stakeholders lack information and a voice at national and international levels, unable to access the technical capacity they require to generate the evidence they need to advocate for and help to drive through necessary policy reforms and institutional innovations. Knowledge and its ensuing benefits are disproportionately accruing to the wealthier, the better educated and the well-connected (World Bank 2016).

Concomitant with these changes is an increasingly complex landscape for development finance. As captured in the Addis Ababa Action Agenda, the role of domestic public resources in development investment is paramount. Countries at different levels of economic development have varying capacities for mobilizing and managing these resources. But all face complex challenges in generating adequate investment in the agrifood sector, in ensuring the quality of that investment and its effective targeting, and in building public sector capacity to deliver priority services. At the same time, the flow of “traditional” official development assistance is likely to decrease in relative terms, and even if non-traditional donors increase their spending, wide gaps will remain. Although agreement is growing among donors and partner countries on the importance of the quality of official development assistance and on shared principles for aid and development effectiveness, there is still insufficient international convergence on many issues surrounding climate change and

climate finance, trade, international finance, coordination for disaster risk reduction and conflict mitigation (IFAD 2015).

In short, the nature and number of challenges and opportunities facing the world of 2016 – rural areas in particular – are very different from those of 2011.

It remains true that sustainable development cannot exist without inclusive rural development. With 75 per cent of the world's hungry poor living in rural areas, cutting global hunger still means cutting rural hunger, as well as equipping smallholder farmers and other rural dwellers with the resources to play their roles in feeding the urban poor and hungry. Cutting global hunger sustainably and permanently requires empowering today's rural poor by including them in the development process to unlock their full social and economic potential.

Given that agricultural and other rural livelihoods are still responsible for over 30 per cent of employment globally and over 38 per cent in low- and middle-income countries, that the agrifood sector is a major source of jobs and that the vast majority of rural jobs are in the informal sector, fulfilling the “decent employment” agenda is impossible without improving rural livelihoods.

And with the absolute number of rural youth increasing in most regions of the world, the spectre of youth unemployment still has major rural dimensions, even if its most visible aspects appear urban (Van der Geest 2010; World Bank 2015a). This same phenomenon represents a potential major resource for rejuvenating agriculture and the agrifood sector, because youth are the more likely to drive the shift towards more environmentally sustainable, more climate-smart and more entrepreneurial agriculture.

For policymakers, practitioners and analysts concerned with sustainable development, a focus on inclusive rural transformation is therefore not only unavoidable, it is wise and strategic.

### **Inclusive rural transformation under structural transformation**

As articulated and championed by IFAD, the true prize for rural development strategies and policies in the coming years will be rural transformation, specifically, inclusive rural transformation that contributes to sustainable development in all its dimensions (IFAD 2015). In line with other IFAD publications, this report defines rural transformation as a process that involves rising agricultural productivity, increasing commercialization and marketable surpluses, diversification of production patterns and livelihoods, and expanded decent off-farm employment and entrepreneurial opportunities. It also involves better rural coverage and access to services and infrastructure, and greater access to, and capacity to influence, relevant policy processes. All of this leads to broad-based rural (and wider) growth and to better managed, more sustainable rural landscapes.

Rural transformation alters the structure of landholdings, the technologies in use, the capabilities of rural women and men, and the distribution and dynamics of the population and labour force, potentially generating multiple benefits that go well beyond rural areas. Rural transformation thus entails a sustainable and comprehensive level of change in rural areas that is social as well as economic and environmental.

The literature usually describes social inclusion as a complex process with social, economic and civic dimensions (World Bank 2013; UNDP 2015). There is still no single indicator that can fully capture inclusion in development.

This report is concerned with the inclusion of rural people under unfolding rural transformation. Under inclusive rural transformation, everyone, without exception, can exercise their economic, social and political rights, develop their abilities, and take advantage of the opportunities available in their environment. This leads to a marked improvement in the economic position and quality of life for small farmers, land poor and landless workers, women and youth, marginalized ethnic and racial groups, and victims of disaster and conflict. Inclusive rural

transformation is both a vision and a lens through which to interpret historical processes in rural areas across the world. Agricultural development, rural development and rural transformation (inclusive or otherwise) are intertwined with other larger processes (see figure B).

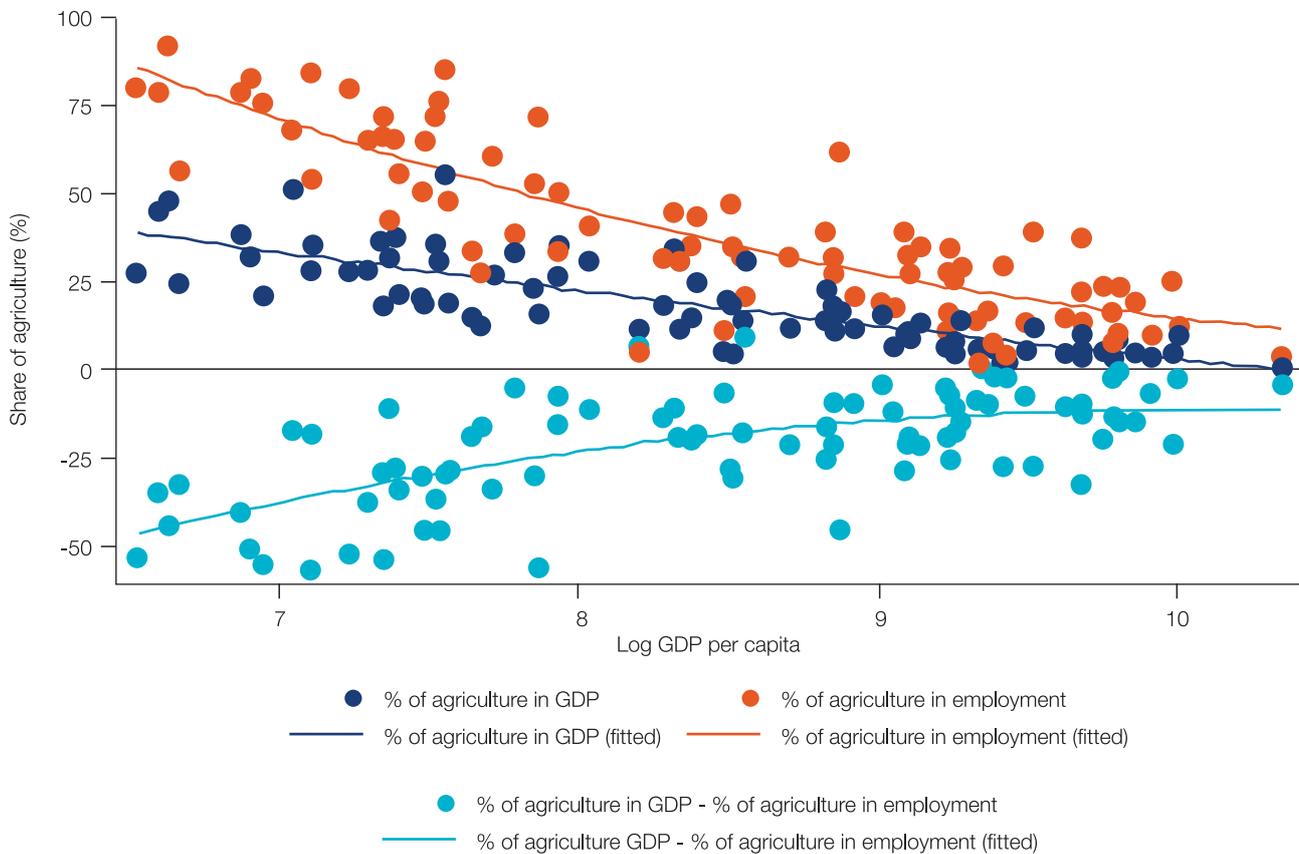
As noted, the report examines rural transformation through the prism of broader structural transformation – a powerful process of change that has affected economies and societies worldwide, and whose main elements are also likely to shape the future trajectory of rural and urban economies. Structural transformation entails four interrelated processes: a declining share of agriculture in GDP and employment; rural-urban migration that stimulates the process of urbanization; the rise of a modern industrial and service economy; and a demographic transition from high to low rates of births and deaths (Johnston and Kilby 1975; Timmer 2009).

Under structural transformation, rising agricultural productivity yields food, labour and savings to the processes of urbanization and industrialization. A dynamic agricultural sector boosts labour productivity in the rural economy and cuts poverty. While structural transformation also leads to a decline in the relative importance of agriculture to the overall economy, the rural non-farm economy, agribusiness and agro-industry grow in importance. Spurred by the modernization of primary agriculture, the migration of rural workers to urban jobs and greater participation in non-farm occupations in rural areas, industrial and service sectors grow quickly (Timmer 2009). As detailed later in this chapter, this stylized model plays out in different ways in different contexts. Given the new challenges and opportunities outlined above, it is likely to show further variation in the future.

Figure C illustrates a core result of structural transformation in 86 countries with complete

FIGURE C Agricultural GDP rises as labour is reallocated

Share of agriculture in GDP and employment by GDP per capita, all regions (most recent year with data)



Source: IFAD, based on World Bank (2015c).

and reliable data. At low per capita incomes, the share of workers engaged in agriculture is around 75 per cent, while at high per capita incomes, it is below 10 per cent. Because labour productivity in agriculture is typically lower than in other sectors, the share of agriculture in GDP is always lower than the labour share, and declining as well. The difference between the two shares (the light blue dots) declines with rising per capita income until it is almost eliminated. Agricultural labour turns to more productive sectors in both urban and rural areas. Driven by changes in consumption patterns towards non-agricultural goods and services, these changes are inexorable. However, agricultural output normally continues to grow. This is true not only for today's agrarian economies, but also for countries at advanced stages of structural and rural transformation, where the agrifood industry grows in importance (figure D).

Globally, between 1980 and 2010, the share of agriculture in GDP declined by a little under 10 per cent, while the share of services increased by 10 per cent (figure E). But agriculture retained its importance in some regions as evidenced by the higher share of agriculture than industry in sub-Saharan Africa (SSA, combining ESA and WCA). The share of industry stayed virtually constant overall, except in Asia and the Pacific (APR), the only region where that share has increased since the 1980s.

In most Organisation for Economic Co-operation and Development (OECD) countries, even as structural transformation and fast growth reduced poverty and hunger in the aggregate and for most groups, it also led to the concentration of productive assets in production, processing and distribution. High labour productivity was achieved at the cost of severe reduction in rural employment. The remaining agricultural labour force is, for instance, only 3 per cent of the active population in France and 1.5 per cent in Germany. This trend, empirically described by Timmer (2009, 2014), includes large spatial disequilibria, environmental degradation, elimination of small-scale farms via increased scales of operation, and growing use of chemical inputs in production. Groups of people or regions are often left behind. Patterns of transformation and the degree to which they

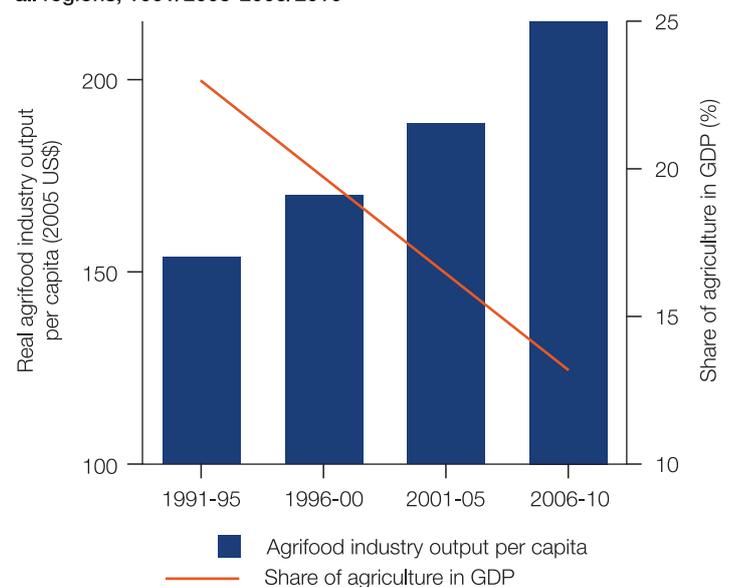
are inclusive hinge on historical legacies, external factors such as natural resource discoveries and wars, and on policies and investments. The social and environmental impacts of structural transformation are frequently a mixed blessing, often creating problems that must then be managed.

Structural transformation is thus a cause and effect of economic growth. It leads to profound political, cultural, social and environmental upheavals that present major challenges and potent opportunities for policy and investment to promote long-term growth and sustainable development. Most important for this report, structural transformation accommodates inclusive rural transformation only if these issues are handled by policymakers in ways that promote improved capabilities and opportunities in the rural sector and for rural people.

Rural poverty generally declines as structural transformation proceeds, based on the average annual change in extreme poverty reduction (a proxy for inclusion) and average annual change in the share of non-agricultural activity

**FIGURE D Falling shares of agriculture in GDP are accompanied by increases in agro-industrial output per capita, highlighting the importance of the rural economy**

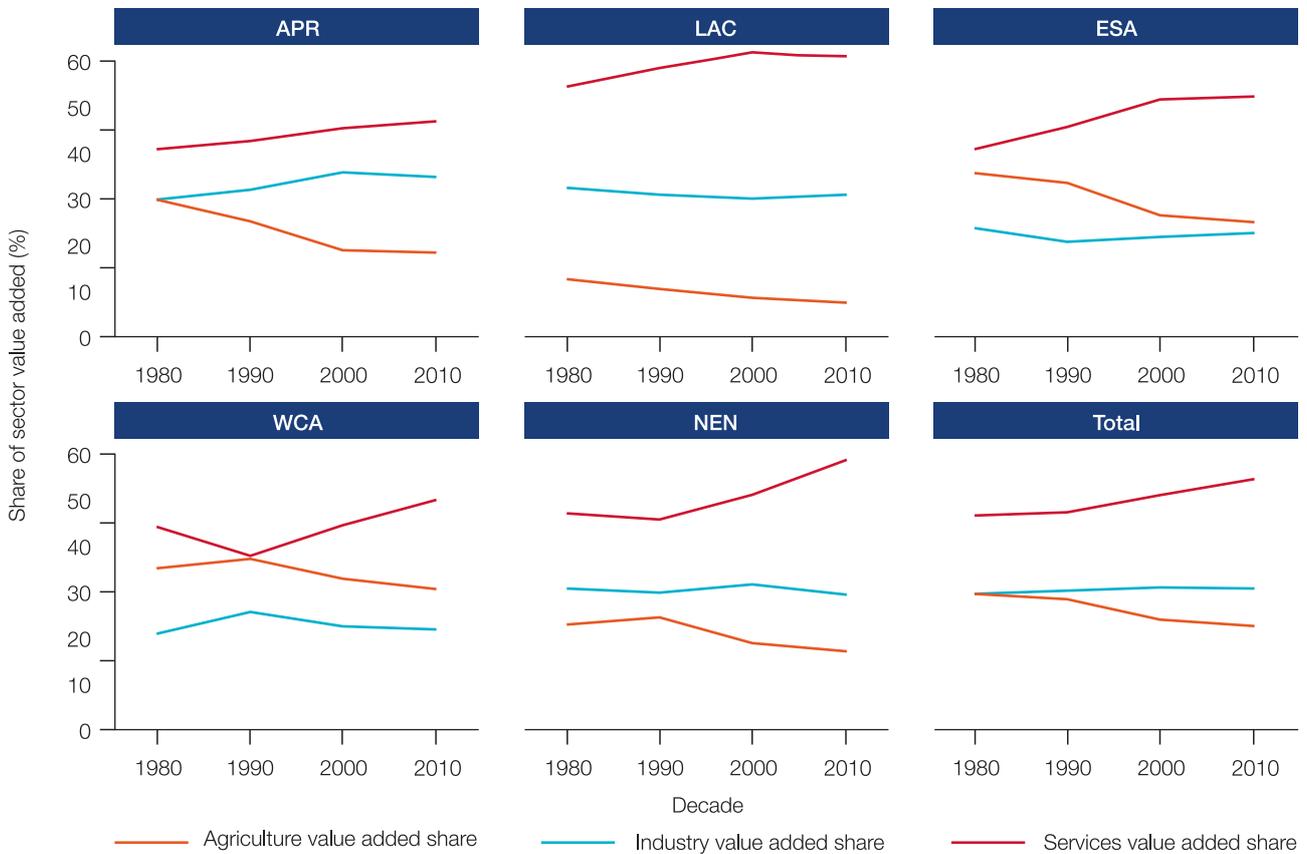
Structural transformation and agrifood industry trends, all regions, 1991/2005-2006/2010



Source: IFAD, based on World Bank (2015c).

**FIGURE E Declining shares of agriculture in GDP correspond to the rise in services and relative stagnation in industry**

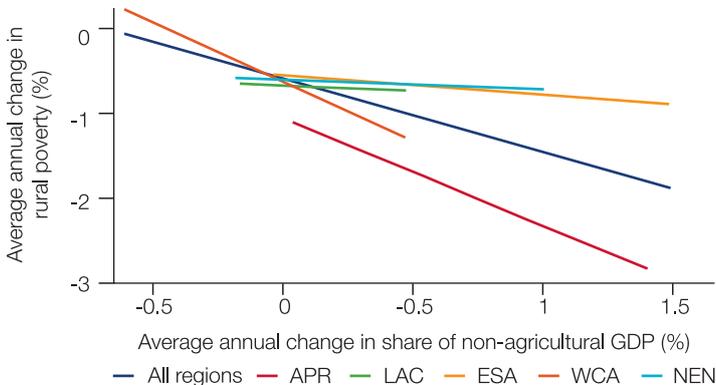
Sectoral structure of the economy by region, 1980s-2010s



Notes: APR = Asia and the Pacific; LAC = Latin America and the Caribbean; ESA = East and Southern Africa; WCA = West and Central Africa; NEN = Near East, North Africa, Europe and Central Asia.  
Source: IFAD, based on World Bank (2015c).

**FIGURE F The pace of structural transformation matches extreme rural poverty reduction**

Change in extreme rural poverty headcount, circa 1990s-circa 2010s



Notes: APR = Asia and the Pacific; LAC = Latin America and the Caribbean; ESA = East and Southern Africa; WCA = West and Central Africa; NEN = Near East, North Africa, Europe and Central Asia.  
Source: IFAD, based on World Bank (2015c).

in GDP (a proxy for structural transformation) (figure F). But the depth and pace of the decline vary sharply across regions. Underneath the extraordinary aggregate achievements of the Millennium Development Goals (MDGs) era, summarized in figure A, is a decidedly uneven picture of performance among regions on poverty reduction. The task of fostering inclusive and sustainable rural and overall development is far from done.

In the fastest-transforming economies, structural and rural transformation has been associated with rapid economic growth, leading to sharp falls in overall and rural poverty, and generating better and more diversified livelihoods for the rural poor. But as will be shown in later chapters, in many countries, growth, transformation and poverty reduction

are lagging and many people are being left behind. At issue in this report are the pace, nature and outcomes of rural transformations, and how they can be made more inclusive.

Agriculture and the rural non-farm economy play decisive roles in the pace and quality (that is, inclusiveness) of rural transformation, as does the capacity of manufacturing to productively and quickly absorb the labour released by agriculture. The next two subsections address these dimensions, drawing implications for inclusiveness.

### **The role of agriculture and the rural non-farm economy**

The historical record is clear that no country has been able to sustain a rapid transition out of

poverty without raising agricultural productivity. Under structural and rural transformation, the relative importance of primary agriculture to the overall economy declines. But that decline should not be interpreted as a diminution in the importance of the agricultural sector in economic development. Even in countries at advanced stages of structural and rural transformation, agriculture plays an important role through agribusiness and agro-industry, even if that role changes as structural transformation progresses.

As noted in the *World Development Report 2008: Agriculture for Development*, agriculture and its associated industries are essential to growth and to reducing mass poverty and food insecurity. Using agriculture as the basis for

#### **BOX A From boosting agricultural productivity to reducing rural poverty in China**

Fast growth in agricultural productivity, output and income contributes first to a rapid reduction in rural poverty, especially where the growing demand for food and fibres in urban areas and export markets prevents the extra supply from depressing prices. But fast agricultural growth also enables the rural sector to provide three essential ingredients for urban growth:

- The food for a growing population with higher incomes.
- The labour needed for the expansion of the industrial and service sectors.
- Where rural banking has progressed, the savings to help finance the more capital-intensive growth in industry than in agriculture.

These are the three ways that agricultural productivity growth drives structural transformation.

The ties of agricultural productivity to the contribution to urban and non-farm labour are especially close. The contribution to urban labour was very large in China, which had the highest average annual growth of agricultural labour productivity (3.5 per cent), and the highest annual increase in the urban population share (1.2 per cent). In contrast, low agricultural productivity growth in the Philippines (1.42 per cent) and Pakistan (1.23 per cent) was associated with the smallest annual change in the share of urban population (0.25 per cent in the Philippines and 0.35 per cent in Pakistan).

Productivity growth in agriculture has also enabled the transition of labour from the agricultural sector to the rural non-farm sector. In China, nearly all village labour worked in farming in the late 1970s. Now, however, more than 70 per cent of the rural labour force has off-farm employment in either rural or urban areas (NBSC, 2015). So, farming is predominantly part-time.

Savings deposits of agricultural households rose from CNY 22.5 billion (2000 prices) in 1978 to CNY 1,888.4 billion in 2000, or about 19 per cent of GDP or 126 per cent of agricultural GDP in 2000. During the same period, capital flows to farmers through lending by the financial system also increased steadily. But throughout the period, the banking system returned only a fraction of the deposits back to farmers. Net outflows from rural areas reached CNY 216.6 billion in 2000. Indeed, from 1978 to 2000, bankers moved more than CNY 1.7 trillion from farmers to industry.

Source: Huang et al. (2006)

economic growth in agriculture-based countries requires a productivity revolution in smallholder farming, which typically represents the bulk of the agricultural sector in these countries (box A). In *transforming countries* (many countries in sub-Saharan Africa, most of South and East Asia, the Middle East and North Africa), fast-rising urban incomes alongside continuing extreme rural poverty are major sources of social and political tension. Addressing income disparities in this category requires a comprehensive approach that pursues multiple pathways out of poverty – shifting to high-value agriculture, decentralizing non-farm economic activity to rural areas and providing assistance to those seeking to move people out of agriculture. In *urbanized countries* (most of Latin America, and much of Europe and Central Asia), agriculture can help to reduce the remaining rural poverty if smallholders become direct suppliers to modern food markets, if good jobs are created in agriculture and agro-industry, and if markets for environmental services are introduced (World Bank 2008).

This categorization and depiction of the context-specific, but crucial, role of agriculture is affirmed here. Also recognized is the empirical regularity that, as structural and rural transformation unfolds, rural non-farm employment – which includes all economic activities in rural areas except agriculture, livestock, fishing and hunting (Lanjouw and Lanjouw 2001) – becomes increasingly important (Johnston and Kilby 1975; Haggblade et al. 2007).

Rural non-farm activities are highly diverse. They span forestry, natural resource extraction, food and non-food manufacturing, tourism and services, including retail trade. These activities involve tradable or non-tradable non-farm goods and services. Except for capital-intensive activities, such as processing sugarcane or tea, the non-farm goods and services produced are usually labour intensive and their production takes place in very small businesses, often with only one worker. Rural non-farm activities range from small-scale household and village production of simple, low-quality products that use local raw materials (such as rice milling and handloom weaving) to small,

modern factories that use mechanical power, sometimes employing imported technology, and producing modern higher-quality products (such as metalworking and machinery repair shops) (Ranis and Stewart 1999). Activities in the rural non-farm sector may also include subcontracting work to farm families by urban-based firms, non-farm activity in village and rural town enterprises, and activities that require commuting between rural residences and urban jobs (Lanjouw and Lanjouw 2001).

Throughout the developing world, incomes from rural non-farm employment have grown rapidly and in many countries account for a larger share than agricultural incomes. In the 1990s and 2000s, the share of non-farm income in total household income was 37 per cent in Africa, 47 per cent in Latin America and 51 per cent in Asia (Haggblade et al. 2007).

Access to non-farm employment opportunities by the rural poor is not guaranteed. Such access may require certain skills that the rural poor often lack (Haggblade et al. 2010; Nagler and Naude 2014). Lanjouw and Shariff (2004) show that in India access to better paying non-farm employment increases with the level of education and size of land assets held. Isgut (2004) arrives at the same conclusion for Honduras, and for India finds that the rural non-farm economy provides employment opportunities for young men with some education, but that such employment is not easily available to women. Inclusion in the rural non-farm economy thus has both gender and education dimensions.

With low levels of education and little to no land owned, the poor are likely to engage either in agricultural wage work or in unskilled, non-farm employment activities characterized by low returns, low productivity, instability and low growth potential. Evidence on the poverty impact of rural non-farm growth is therefore mixed. In some cases it may greatly improve the income of the poor, while in others it may benefit the already better off (Haggblade et al. 2007). The non-farm aspect of structural and rural transformation is therefore a potential source of both inclusion and exclusion of rural people (Nagler and Naude 2014).

### **Manufacturing and labour absorption**

With urbanization, the changing manufacturing sector is the most visible aspect of structural transformation. Increased manufacturing is a goal to which most countries aspire because of the high rate of productivity it can achieve, even in countries where the other sectors lag far behind.

The rapid growth and high level of productivity of manufacturing arise because producing goods for domestic and export markets, manufacturing is subject to intense competition from other countries. With globalization, unless a country's manufacturing sector can produce as efficiently as its competitors, it will be punished in foreign markets, potentially even losing domestic markets to imports. Such prospects compel manufacturers to rise quickly to the global technology and productivity frontier. Manufacturing can therefore flourish in environments where economy-wide capabilities in terms of human capital and institutions are still very limited. The rate of convergence of industrial productivity to levels in the developed world is about 2 per cent per year, a powerful boost that benefits countries with a significant manufacturing sector (Rodrick 2012, 2013).

These advantages also apply to the modern services sector, which includes commerce, communication, transport, information technology and finance (Ghani and O'Connell 2014). Global trade in services has exploded and is now growing faster than trade in goods.

Given the rapid productivity increases in manufacturing and modern services, these two sectors are likely the most desirable destinations for rural-urban migration. Where manufacturing is labour intensive – as in China or Bangladesh – it can absorb a large number of unskilled and semi-skilled migrants, and therefore leads to a large gain in economy-wide productivity. Modern services, in contrast, such as finance, communication and information technology, are skills intensive and offer few jobs for unskilled or semi-skilled workers.

Growth of labour-intensive manufacturing over the past few decades has been concentrated in East and South-East Asia. The structural transformations of the Republic of Korea and

Taiwan unfolded from the 1950s to the 1970s, by which time (along with Singapore and Hong Kong) they were called the Asian tigers. China's growth and structural transformation accelerated sharply after the fundamental economic reforms launched around 1980, to quickly surpass the Lewis turning point (1954) at which wages start to rise. Poverty rates have declined sharply in both urban and rural areas.

However, offsetting forces are at work. Over time the manufacturing sector becomes more capital and skills intensive, a trend that will continue with the automation that is progressing rapidly in industries around the world. In addition, international competition in labour-intensive manufacturing today is much higher than when the Asian countries started to industrialize. Both these forces make it much harder for latecomers to develop their industrial sectors. China and other countries may remain competitive with low-wage countries and the affected industries may not migrate. But the so-called "classic" transformation pathway – in which a country experiences rapid economic and manufacturing growth, fast expansion in urban labour demand, fast rural-urban migration, and deep reductions in poverty and hunger – may no longer be open to latecomers. They have to consider other options.

In this report, structural transformation is taken to include any movement of labour from any sector in the economy to other sectors. That entails taking a broader approach to structural transformation than just focusing on agriculture and manufacturing. Levels and movements of labour and employment are especially critical. Labour will normally move to the sectors of highest labour productivity and earnings. Where the modern manufacturing sector is growing slowly, the growing labour force will end up in informal sectors in urban and rural areas. In recent decades, however, an increasingly prominent movement of labour has occurred *within* rural areas, between agriculture and the rural non-farm sector, which typically has higher labour productivity and wages than agricultural production, and therefore favours poverty reduction. India has been experiencing this type of rural transformation (Binswanger 2013).

Not all movements of labour lead to productivity growth, however. In some countries (particularly in Latin America) globalization has led to the phasing out of industries that could not compete with cheaper imports. Demand for labour can also decline in high-productivity sectors. The labour released from these sectors must find employment or self-employment in lower-productivity sectors. Economy-wide labour productivity may decline as a result, pulling down wages and incomes, and making the transformation less inclusive. Rural development policies and strategies must accommodate these dynamics and their effects.

### **Strategic challenges, opportunities and choices for rural development**

Structural and rural transformations differ in the speeds and paths they take (Timmer 2014), both with strong implications for movements of labour and employment. Under the version of structural transformation experienced by OECD countries and some recent transformers such as China, the predominant movement of labour is to industry and modern services. Because of strong rural-urban linkages, this type of transformation is generally favourable for inclusive rural development. But when urban jobs do not grow fast enough to absorb the existing or growing labour force in industry, and when informal sectors are also not growing fast enough – as in South Africa and several other countries – workers will end up unemployed or underemployed – a highly adverse outcome of structural transformation (Timmer 2014).

The speed of structural and rural transformation depends on the overall economic rate of growth. For example, it took Europe and North America over 100 years to industrialize and change their economic structures. Before World War II, pressure on domestic employment and wages in Europe was relieved by the migration of about 60 million people from that continent to the Americas, a safety valve that is no longer open for any developing country. The pace of transformation in OECD countries became especially quick during the golden years of high economic growth rates that followed World War II and went on until the 1970s:

rural-urban migration accelerated, economy-wide wages grew rapidly and poverty declined sharply.

Recent transformations have been much faster. In South-East and East Asia, transformation has been especially rapid, featuring significant manufacturing growth in countries such as China, Bangladesh and Viet Nam. With few exceptions, in the transformations of all other regions, manufacturing has played a smaller role and their transformations have not benefitted from the high-productivity growth associated with manufacturing. Employment growth has come from the services sector, the rural non-farm sector, and agriculture, and will need to continue to do so. Again, rural development policies and strategies cannot ignore these opportunities and imperatives.

Knowing the speed and nature of structural and rural transformations of a country is not enough to make policy prescriptions. These require knowledge of the country's history, the opportunities and constraints it faces, and how improved institutions could enhance its development performance. However, it is possible to provide strategic priorities for the countries that reflect their position. Countries should use both structural and rural transformations to enhance inclusive growth and rural development. Of special importance is the demand for rural goods and labour, which varies with the nature and speed of structural transformation.

The long-run answer to the technical, organizational and political challenges raised by the host of imbalances and inequities induced by structural and rural transformation therefore entails higher returns to on-farm employment alongside faster integration of farm labour into the non-farm economy, rural and urban. In the short term, policy and investment are required to draw disadvantaged groups into the mainstream while maintaining momentum for transformation (Timmer 2014).

Many favourable social impacts stem from rural transformation, including growth in life expectancy; improvements in education, health, water and sanitation; and the empowerment

of women. However, they may also weaken traditional identities, social cohesion and the potential for collective action in areas such as natural resource management, which can hurt inclusion. Inclusiveness is therefore likely to be highly specific to location and prevalent social and economic conditions.

The link to the rural development agenda and more broadly to the Sustainable Development Goals (SDGs) is clear (SDG 2015). By leveraging the rural-urban nexus for development, empowering rural populations, investing in smallholder family agriculture and promoting the resilience of poor rural households, inclusive rural transformation will be both a precondition for and an outcome of achieving some of the SDGs (IFAD 2015).<sup>1</sup> Such achievements will require strategic choices that affect the pace and quality of rural transformation and broader rural development.

The core strategic choices revolve around how to ensure that the poor are drawn into both the transformation and the policies and investments designed to ameliorate the distributional consequences of rapid transformation. The complexity and continuity of the strategic challenges facing countries are as potent as the context-specific and pathway-determined strategic opportunities. The historical record illuminates what works and what does not in different contexts (Timmer 2014). Drawing on a wide range of evidence from across the globe, this report adds to that literature.

## Questions and propositions

To shed light on the strategic opportunities, challenges and choices raised by inclusive rural transformation, this report addresses three questions:

1. What are the different pathways of structural and rural transformation across the developing world?
2. What are the consequences of transformation for poverty reduction and inclusion?
3. What can be done by governments, the private sector, civil society and development partners, including IFAD, to stimulate and support inclusive rural transformation?

In addressing these questions, the report's primary proposition is that historical legacies and policy and investment choices shape the pathways, speeds and results of structural and rural transformations, leading to sharply different transformation and inclusion outcomes among countries. A supplementary proposition is that rural development strategies to promote inclusive rural transformation must recognize and accommodate these outcomes, strengthening inclusion-enhancing forces and blunting exclusion-promoting ones.

## Patterns of transformation and inclusion

IFAD's regional classification scheme divides the developing world into five operational regions: Asia and the Pacific (APR); Latin America and the Caribbean (LAC); the Near East, North Africa, Europe and Central Asia (NEN); East and Southern Africa (ESA); and West and Central Africa (WCA). Looking across these regions, how have the levels and speeds of structural transformation, rural transformation and rural inclusion evolved in recent decades? Do any important similarities or differences appear across regions? Do any patterns emerge regarding relationships among structural transformation, rural transformation and rural inclusion?

To begin to answer these questions, IFAD developed a 60-country dataset covering all five regions, spanning the period 1995-2015, and comprising observations on variables that impact and reflect the pace and nature of structural transformation, rural transformation and rural inclusion. Countries were selected to ensure broad geographic coverage and diversity of socio-economic conditions and trends (table A). The next subsection employs the dataset to build understanding of levels and speeds of transformation and inclusion in the five regions. That is followed by an examination of correlations among transformation and inclusion variables, seeking to establish a basis for drawing conclusions about pathways towards inclusive rural transformation.

TABLE A Regions and countries discussed

Region	Countries	Count
Asia and the Pacific (APR)	Bangladesh, Cambodia, China, India, Indonesia, Lao People's Democratic Republic, Pakistan, Philippines, Viet Nam	9
Latin America and the Caribbean (LAC)	Brazil, Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay	16
Near East, North Africa, Europe and Central Asia (NEN)	Armenia, Egypt, Kazakhstan, Kyrgyzstan, Morocco, Tajikistan, Turkey	7
East and Southern Africa (ESA)	Botswana, Burundi, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, Tanzania, Uganda, Zambia	15
West and Central Africa (WCA)	Benin, Burkina Faso, Cameroon, Cabo Verde, Central Africa Republic, Congo, Guinea, Mali, Mauritania, Nigeria, Senegal, Sierra Leone, Togo	13
<b>TOTAL</b>		<b>60</b>

### Levels and speeds of transformation and inclusion

The selection of variables to capture the levels and speeds of structural transformation, rural transformation, and rural inclusion is driven by theory and by practical considerations.

#### Structural transformation

The *level of structural transformation* is captured by a powerful and frequently used measure – the share of non-agricultural activity in GDP. A greater value represents a higher level of structural transformation. The *speed of structural transformation* is measured as the average annual percentage change of this variable over 1990-2014. A positive value represents faster structural transformation (see the Annex for full details).

Structural transformation proceeded in all regions, but starting and ending points differed significantly (figure G). Starting levels in LAC and NEN were high and climbed further, with LAC's topping 90 per cent and NEN's well over 80 per cent by the end of the period. APR started with a lower level than ESA and WCA but surged ahead thereafter, with ESA lagging and WCA hardly changing.

Speeds also varied by region. APR's average annual rate of change of over 0.6 per cent was

six times that of WCA and almost double that of ECA. LAC's relatively slow rate of change of 0.2 per cent a year reflected its high initial level.

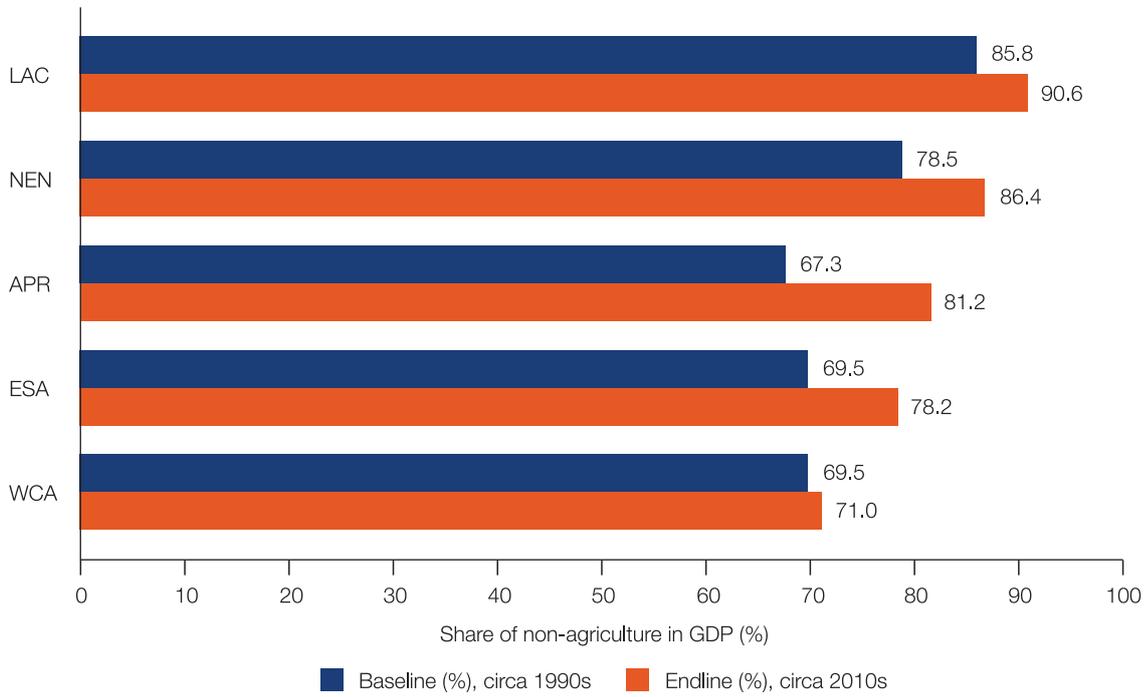
#### Rural transformation

The *level of rural transformation* is captured by a central driver and reflection of the transformation process as defined in this report, namely agricultural labour productivity, measured as agricultural value added per worker (in 2005 dollars).<sup>2</sup> A positive value represents more rural transformation. The *speed of rural transformation* is measured as the average annual percentage change of this variable over 1990-2014. A positive value represents faster rural transformation (see the Annex for full details).

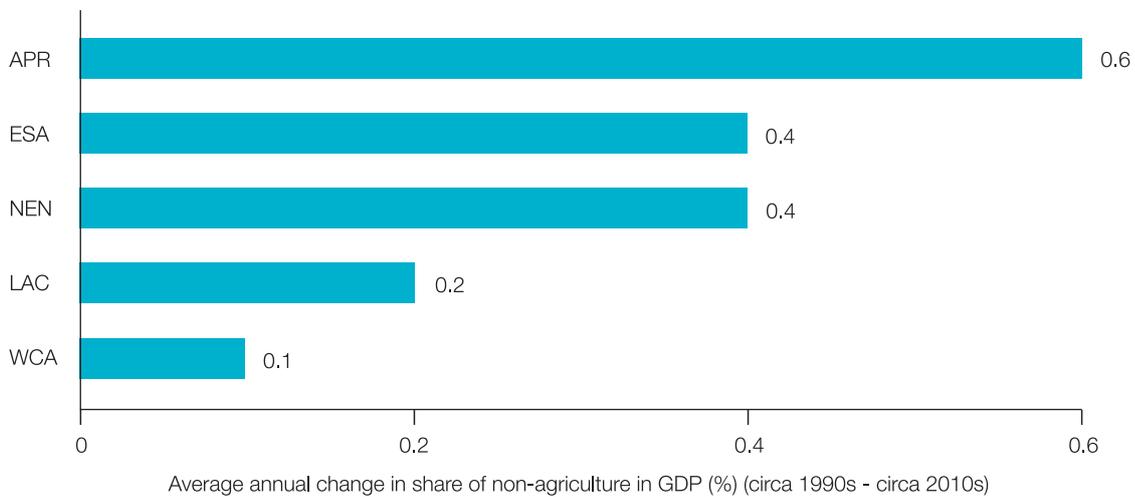
By this measure, rural transformation surged ahead in LAC and NEN, two regions with countries that registered important gains in rural areas over the period (figure H). WCA, ESA and APR also registered steep percentage gains, but from much lower starting points than LAC and NEN. Speeds were also highest in NEN and LAC, with APR and WCA also transforming quite fast, but again, from low bases. ESA's speed was a fraction of those of other regions.

**FIGURE G Structural transformation proceeded in all regions, but starting and ending points differ significantly**

**(a) Levels of structural transformation by region, 1990s-2010s**



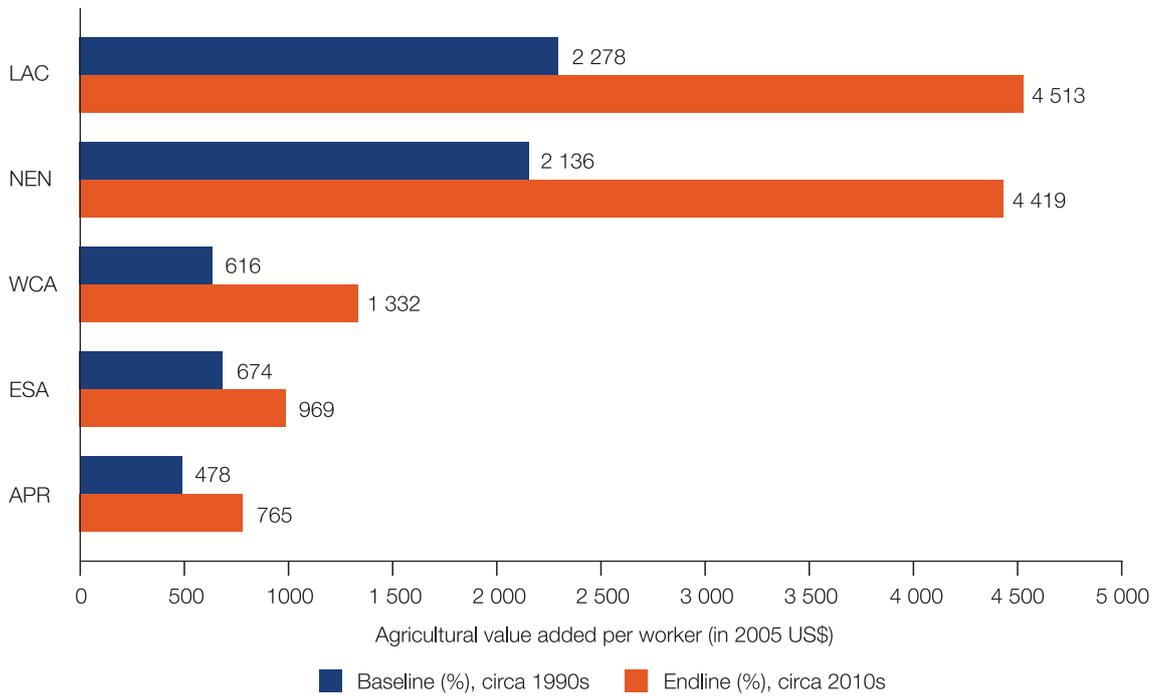
**(b) Speed of structural transformation by region, 1990s-2010s**



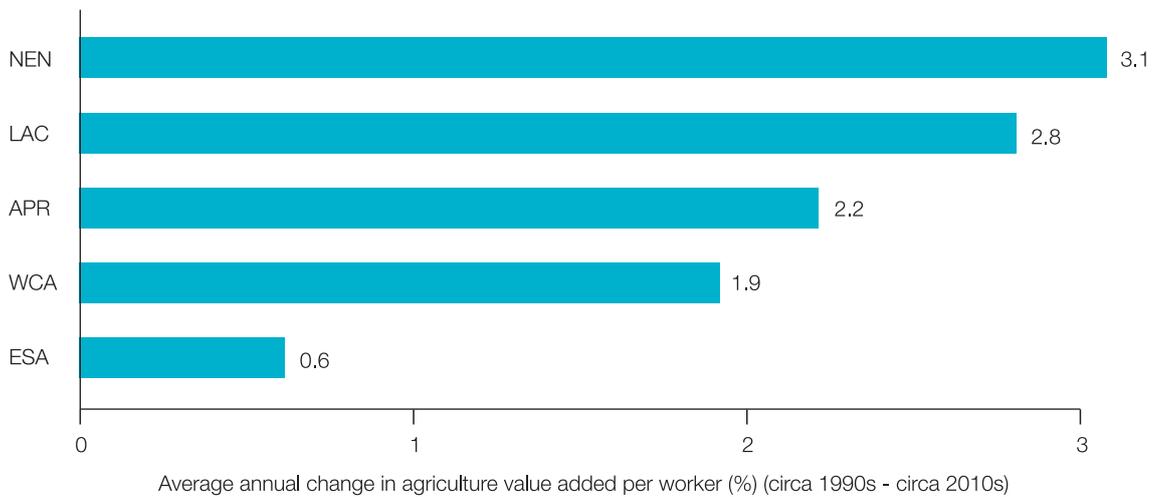
Source: IFAD, based on World Bank (2015c).

FIGURE H Rural transformation is higher in LAC and NEN, but other regions also progressed

(a) Levels of rural transformation by region, 1990s-2010s



(b) Speed of rural transformation by region, 1990s-2010s



Source: IFAD, based on World Bank (2015c).

**Rural inclusion**

The level of rural inclusion is proxied by the rural poverty rate,<sup>3</sup> of which two are considered. For APR, ESA, and WCA, extreme rural poverty at US\$1.25 purchasing power parity per capita per day is used. For LAC and NEN, because rates of extreme poverty were already very low at the beginning of the 1990s and largely eradicated in recent years, rural poverty rates

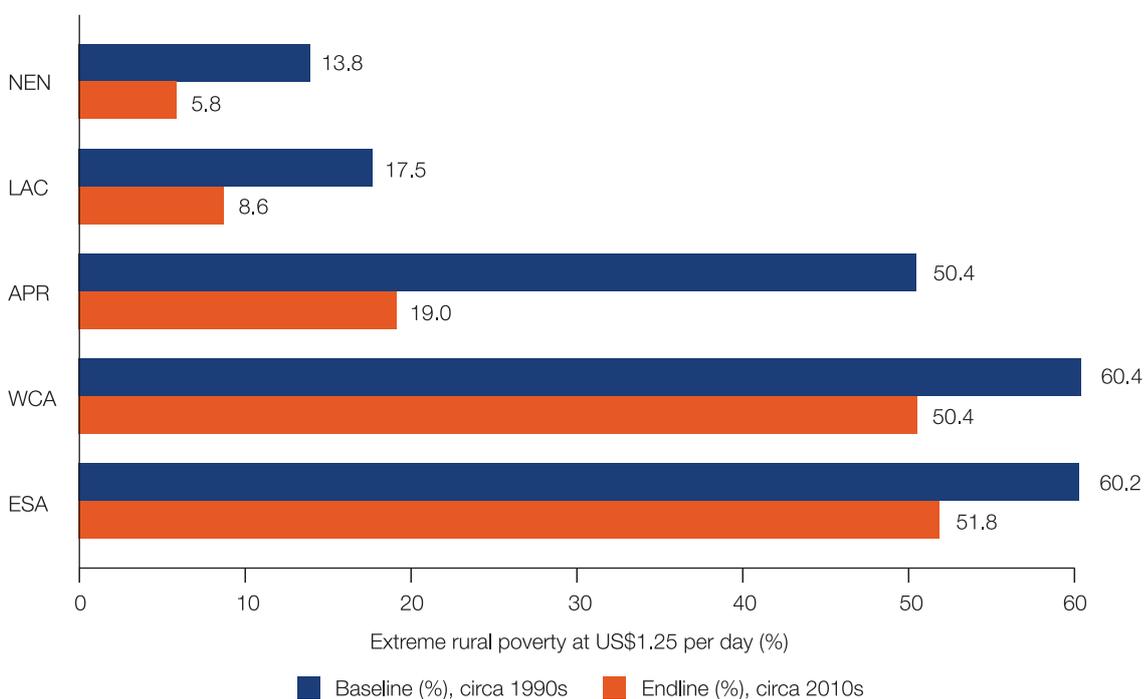
based on national poverty lines are used.

Speeds of rural inclusion are measured as average annual percentage changes of these two poverty measures over 1990-2013. Negative values represent faster rural inclusion (see the Annex for full details).

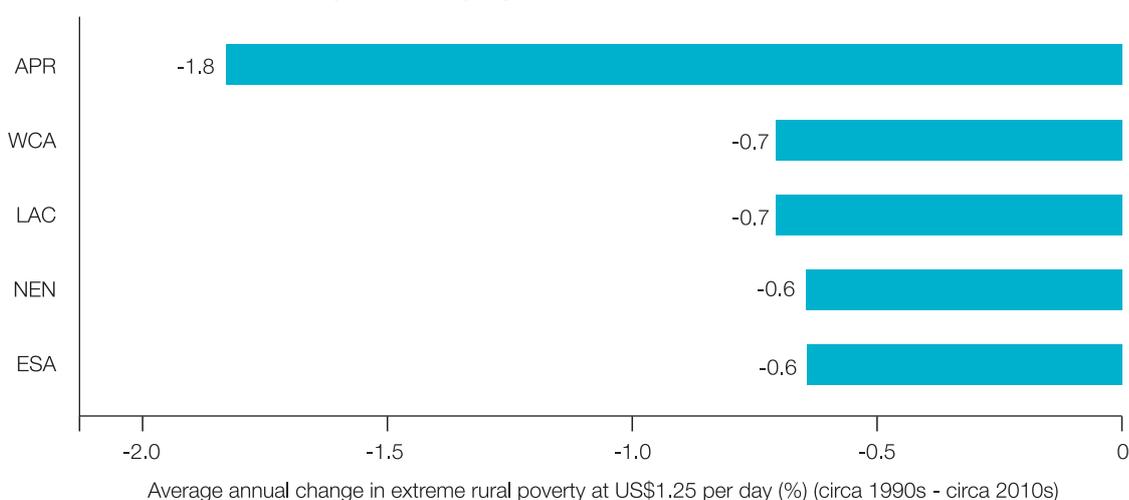
Rural poverty declined in all regions under both measures (figures I and J). APR's rate of extreme poverty reduction towered well above

FIGURE I Extreme rural poverty declined in all regions, with APR leading the way

(a) Levels of extreme rural poverty by region, 1990s-2010s



(b) Speed of extreme rural poverty reduction by region, 1990s-2010s



Source: IFAD, based on World Bank (2015c).

that of other regions. LAC and NEN cut by half their rates of extreme poverty, but given their low initial levels of extreme poverty, this translated into low speeds of poverty reduction in subsequent years. For ESA and WCA, extreme poverty fell by only 10 per cent over the entire period, translating into small annual changes on average. Save for WCA, rates of poverty reduction according to national poverty lines were higher

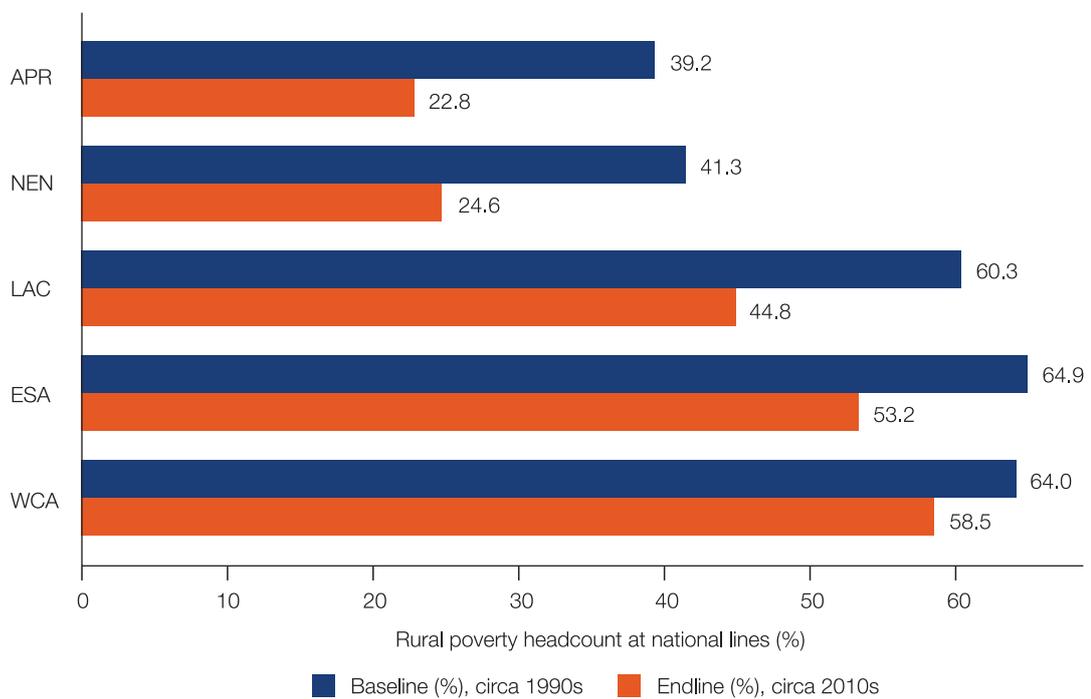
across the board, especially for NEN and LAC for the above reason.

*Transformation and inclusion: correlations and inferences, hypotheses and findings*

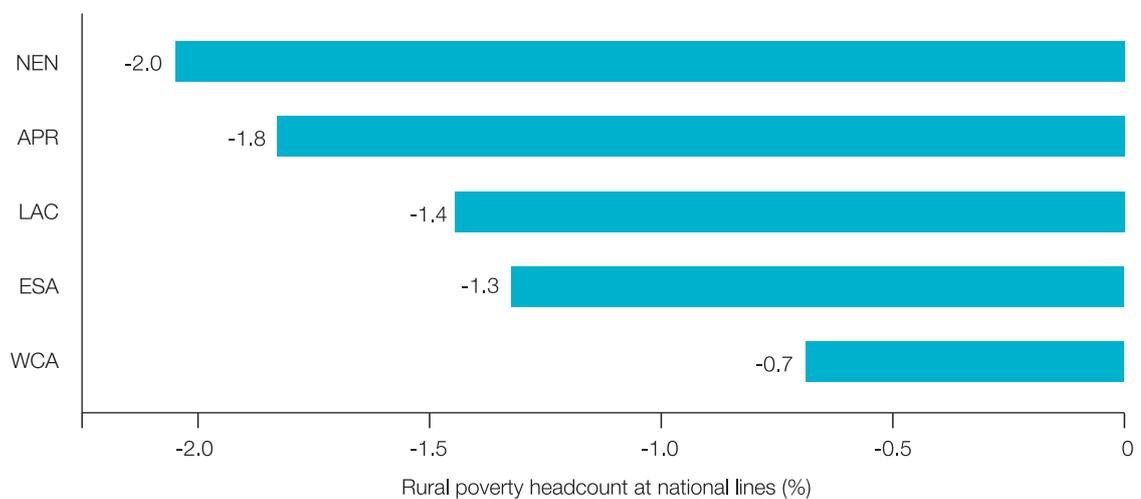
The data summarized in figures G-J suggest that regions (and countries within them) with high levels and speeds of structural transformation appear also to have high levels and speeds of

**FIGURE J Rural poverty reduction has also been fast across the board when measured at national lines**

(a) Levels of rural poverty (at national lines) by region, 1990s-2010s



(b) Speed of rural poverty reduction (at national lines) by region, 1990s-2010s



Source: IFAD, based on World Bank (2015c).

rural transformation, but not uniformly so. Fast-transforming regions (and countries) appear to cut poverty most quickly, but, again, not uniformly so. This section explores these linkages. A complete treatment would entail multivariate regression analysis based on comprehensive data at different geographical levels, controlling for a range of factors, but lack of such data precludes such an analysis here.<sup>4</sup> Instead, a systematic examination of correlations between levels and changes of the three variables representing structural transformation, rural transformation and rural inclusion is undertaken. While no causality can be assumed, inferences can be drawn and hypotheses put forward for further investigation.

### *Correlations and inferences*

*Structural transformation and rural transformation.* The data reveal that the more structurally transformed countries are, the more rurally transformed, both initially and at the end of the period they are (table B). The higher the initial and final levels of structural transformation, the higher they are for rural transformation. No significant association is evident between the speed of structural transformation and either the level or speed of rural transformation.

*Structural transformation and rural inclusion.* The higher the initial levels of structural transformation, the lower the initial and final levels of extreme poverty (table C). As extreme poverty levels are already quite low among the more transformed regions (LAC and NEN), there is no significant correlation between the level of structural transformation and the speed of reduction of extreme poverty. However, the higher the speed of structural transformation, the faster the rural poverty reduction.

*Rural transformation and rural inclusion.* As with structural transformation, the higher the initial levels of rural transformation, the lower the initial and final levels of extreme poverty (table D). But in contrast to structural transformation, the speed of rural transformation is statistically correlated with rural poverty reduction, moving from a relatively weak correlation initially to a much stronger final one. The higher the speed of rural

transformation, the faster the rural poverty reduction.

*Structural transformation, rural transformation and rural inclusion.* Tables B-D suggest that both initial levels and subsequent speeds of transformation matter to levels and speeds of inclusion. These associations are examined in table E. The higher the initial and final levels of structural transformation, the stronger the correlation between rural transformation and rural poverty reduction, especially where the initial level of structural transformation is low. Where structural transformation is relatively slow, fast rural transformation coincides with fast rural poverty reduction.

Both rural transformation and rural inclusion would therefore appear to be most dynamic in the context of fast structural transformation, which, in turn, and especially where it is proceeding relatively slowly, is most vibrant alongside rapid rural transformation and rapid rural inclusion.

### *Hypotheses and findings*

These correlations and inferences suggest two hypotheses:

1. No country has reduced rural poverty significantly in the absence of rapid structural and/or rural transformation. This statement should be confirmed by the data, with few exceptions.
2. Countries that have gone through a significant structural and/or rural transformation have significantly reduced rural poverty – and enhanced inclusion. This statement should be limited by the data, with some countries having transformed inclusively, but several having transformed non-inclusively.

Together, the two hypotheses suggest that structural and rural transformations are necessary but not sufficient conditions for rural inclusion. To achieve inclusion, not only must countries transform quickly, but they must also take specific steps to reduce rural poverty and enhance inclusion more broadly. There may be some exceptions to both the hypotheses, but not so many that the statements do not hold. To explore these hypotheses, a two-dimensional typology of countries was developed.

**TABLE B There is a significant positive correlation between the levels of structural transformation and the levels and changes of rural transformation**

Correlations (ST and RT)	Rural transformation (RT)		
	Initial level	Final level	Average annual change
Structural transformation (ST)			
Initial level	0.5985**	0.5682**	0.2581*
Final level	0.5501**	0.4858**	0.2130 <sup>+</sup>
Average annual change	-0.1257	-0.1823	-0.1005

Note: \*, \*, and \*\* denote statistical significance at the 10 per cent, 5 per cent, and 1 per cent levels respectively (Pearson's correlation coefficient).

Source: IFAD, based on World Bank (2015c).

**TABLE C Higher levels of structural transformation are associated with lower levels of rural poverty – faster structural transformation is associated with faster poverty reduction**

Correlations (ST and poverty)	Extreme rural poverty (less than US\$1.25 a day)		
	Initial level	Final level	Average annual change
Structural transformation (ST)			
Initial level	-0.6284**	-0.4907**	0.2371
Final level	-0.5977**	-0.5629**	0.0723
Average annual change	-0.0277	-0.0808	-0.2753*

Note: \*, \*, and \*\* denote statistical significance at the 10 per cent, 5 per cent, and 1 per cent levels respectively (Pearson's correlation coefficient).

Source: IFAD, based on World Bank (2015c).

**TABLE D Higher levels of rural transformation are associated with lower levels of rural poverty – faster rural transformation is associated with both lower levels of poverty and faster poverty reduction**

Correlations (RT and poverty)	Extreme rural poverty (less than US\$1.25 a day)		
	Initial level	Final level	Average annual change
Rural transformation (RT)			
Initial level	-0.7496**	-0.6280**	0.1825
Final level	-0.6995**	-0.5941**	0.1531
Average annual change	-0.0167*	-0.4054**	-0.1792 <sup>+</sup>

Note: \*, \*, and \*\* denote statistical significance at the 10 per cent, 5 per cent, and 1 per cent levels respectively (Pearson's correlation coefficient).

Source: IFAD, based on World Bank (2015c).

On one axis of the typology is the speed of structural transformation and rural transformation. On the other is the speed of rural inclusion. In the first instance, countries are classified as “fast” or “slow” structural transformers, rural transformers and rural inclusions if the respective average annual change of the relevant variable is higher or lower than the regional average (table F). Because of region-specific characteristics of agriculture and of broader rural economic activity, comparison is with regional, not global, averages.

Owing to the quite short length of time series data for the underlying variables, countries that had already achieved relatively advanced stages of structural and rural transformation and low rates of poverty at the start of the 1990s register fairly low rates of change in both the transformation and inclusion variables over the ensuing years. The converse is true for

countries at quite early stages of transformation with fairly high rates of poverty at the start of the measurement period. The baseline level of structural or rural transformation may be high enough to render a country essentially transformed, even when its average annual change over the period of study is below the regional average.

To avoid the obvious distortions introduced, with respect to structural transformation, any country with an initial share of non-agricultural activity in GDP greater than 90 per cent is considered a “fast” transformer. Eight countries are reclassified in this way.<sup>5</sup> For rural transformation, any country that has a significantly above-average initial level of agricultural labour productivity and that registers average annual growth of at least 90 per cent of the regional average (indicating that it has sustained its high performance over the period)

TABLE E The higher the initial and final levels of structural transformation, the stronger the correlation between rural transformation and rural poverty reduction

Structural transformation categories	Correlation between changes and current levels of RT and rural poverty		
	Initial levels of RT x initial levels of poverty	Final levels of RT x final levels of poverty	Changes in RT x changes in poverty
<b>Initial level of ST</b>			
Transformed <sup>a</sup>	-0.4181	-0.6649*	0.1259
Not transformed	-0.7720**	-0.5593**	-0.2078
<b>Final level of ST</b>			
Transformed <sup>a</sup>	-0.7361**	-0.6583**	-0.3743+
Not transformed	-0.7642**	-0.4322**	-0.1133
<b>Speed of ST</b>			
Fast <sup>b</sup>	-0.7650**	-0.5765**	-0.0668
Slow <sup>b</sup>	-0.8160**	-0.5916**	-0.4204+
<b>All Countries</b>	<b>-0.7496**</b>	<b>-0.5941*</b>	<b>-0.1792</b>

Notes: +, \*, and \*\* denote statistical significance at the 10 per cent, 5 per cent, and 1 per cent levels respectively (Pearson's correlation coefficient).

<sup>a</sup> Transformed countries are those with over 90 per cent share of non-agricultural activity initially.

<sup>b</sup> Countries with fast (or slow) structural transformation are those with an average annual percentage change of the share of non-agricultural activity in GDP that is greater (or smaller) than the regional average.

Source: IFAD, based on World Bank (2015c).

TABLE F Typology for examining linkages between transformation and inclusion

Process	Variable used	Speed	Classification criteria
Structural transformation	Non-agriculture share of GDP (per cent)	Fast	<ul style="list-style-type: none"> <li>■ Above regional mean of average annual changes from 1990-2014</li> <li>■ Level at beginning of period is &gt;90 per cent</li> </ul>
		Slow	<ul style="list-style-type: none"> <li>■ Below regional mean of average annual changes from 1990-2014</li> </ul>
Rural transformation	Agricultural labor productivity measured as agricultural value added per worker (2005 dollars)	Fast	<ul style="list-style-type: none"> <li>■ Above regional mean of average annual changes from 1990-2014</li> <li>OR</li> <li>■ Initial level is significantly above regional average and average annual growth &gt;90 per cent of the regional average annual growth</li> </ul>
		Slow	<ul style="list-style-type: none"> <li>■ Below regional mean of average annual changes from 1990-2014</li> </ul>
Rural inclusion	Rural poverty: <ul style="list-style-type: none"> <li>■ APR, ESA, WCA: Global extreme poverty line (US\$1.25/day)</li> <li>■ LAC,NEN: National poverty lines</li> </ul>	Fast	<ul style="list-style-type: none"> <li>■ Above regional mean of average annual changes from 1990-2013</li> </ul>
		Slow	<ul style="list-style-type: none"> <li>■ Below regional mean of average annual changes from 1990-2013</li> </ul>

is considered a “fast” rural transformer. Two countries are reclassified in this way.<sup>6</sup>

Figure K illustrates the relationship between the speed of structural transformation and the speed of rural poverty reduction for the 60 countries by region.<sup>7</sup> The dotted horizontal and vertical lines are regional averages for the two variables. Figure L shows the same for rural transformation and rural poverty. As expected, there is great variation across regions, and between countries within regions. Most countries fall into the top-left and bottom-right quadrants. But crucially, for both structural transformation and rural transformation, several countries are “off-diagonal” – that is, they transform quickly but include slowly (top-right quadrant), or vice versa (bottom-left quadrant). The LAC region in particular has several countries in these two “off-diagonal” quadrants.

Considering all three variables together, the typology holds up well (table F). Across the five regions (see figures K and L), only one of the 33 countries that reduced poverty quickly registered neither fast structural transformation nor fast rural transformation. The remaining

32 countries showing fast poverty reduction had either fast structural transformation or fast rural transformation or both. These results confirm the first hypothesis.

In their respective regions, 32 countries with relatively fast structural (26) or rural transformation (6) also cut rural poverty significantly, and the majority of these countries (20) also registered fast rural transformation. Notably, six countries with quite slow structural transformation but fast rural transformation reduced poverty significantly, pointing to the critical role of rural transformation for inclusion. Disappointingly, and qualifying the second hypothesis, 19 countries that transformed quickly (13 with fast structural transformation and six with fast rural transformation) did not cut rural poverty significantly over the period.

These results confirm a major theme of this report: rapid structural and rural transformations are not enough to induce inclusive rural transformations. Instead, inclusive transformations must be made to happen – for many reasons:

FIGURE K Regionally, the results largely confirm the expected association between the pace of structural transformation and of rural poverty reduction

Pace of structural transformation and rural poverty reduction by region, 1990s-2010s

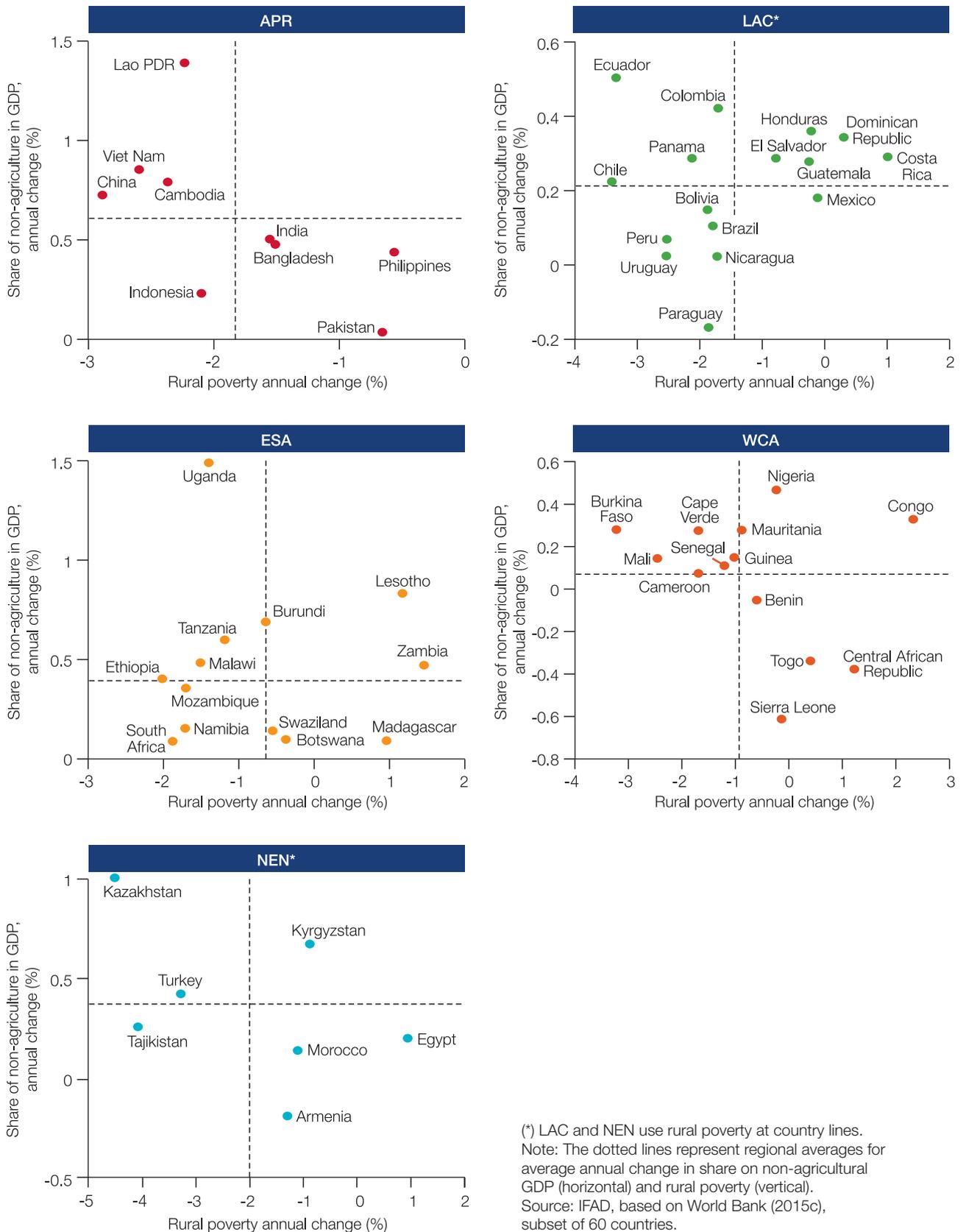
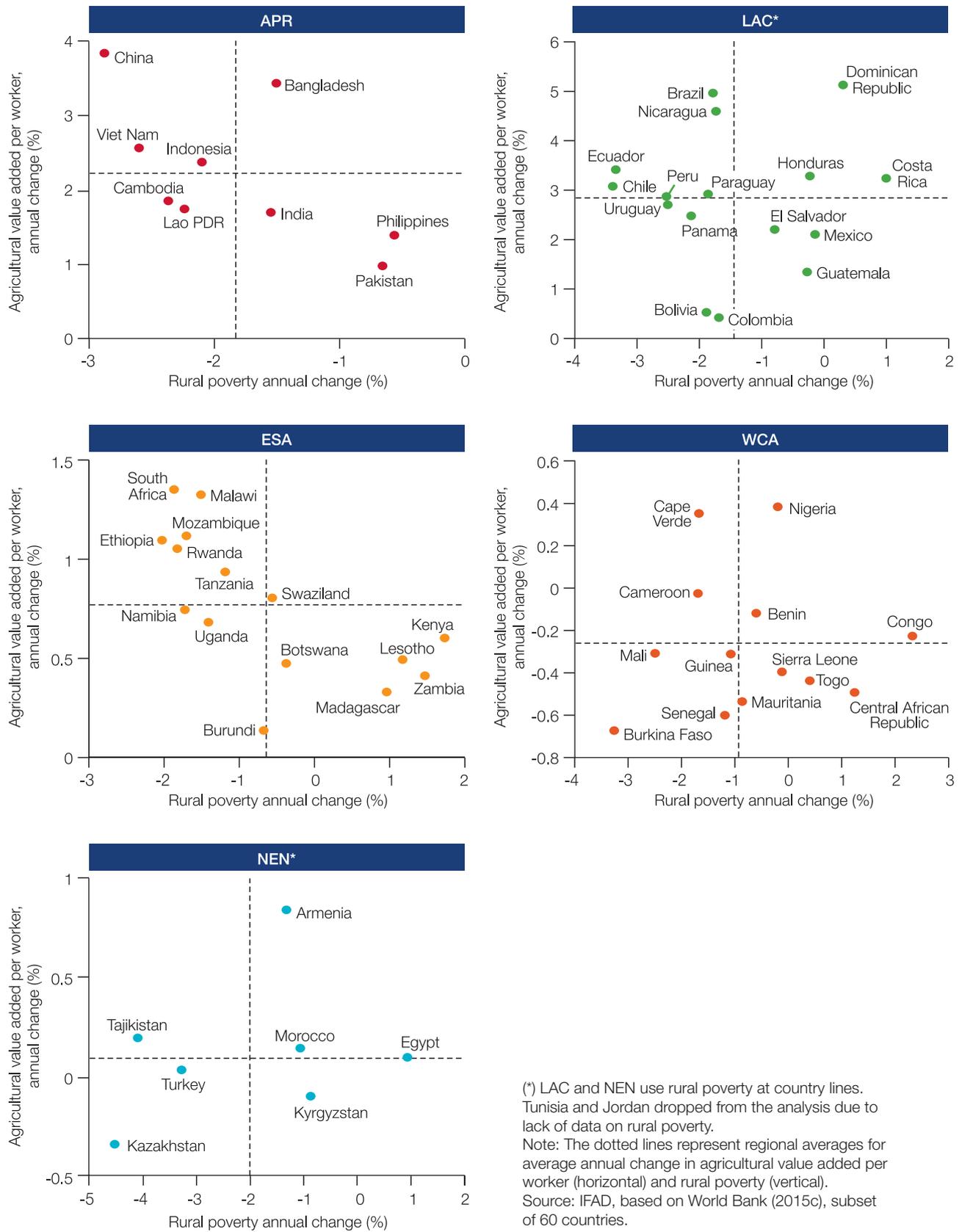


FIGURE L Regionally, the results largely confirm the expected association between the pace of rural transformation and rural poverty reduction

Pace of rural transformation and rural poverty reduction by region, 1990s-2010s



1. A total of 39 countries are experiencing fast structural transformations, of which 19 are also experiencing fast rural transformation. But of these, 5 are not seeing rapid poverty reductions. Of the same 39 countries, 20 are not experiencing fast rural transformations. Of these 20, 8 are not seeing rapid poverty reduction. Clearly, these 8 countries require specific interventions for inclusion.

2. Among the 21 countries with slow structural transformations, 6 have rapid rural transformation but slow poverty reductions.

3. The 29 countries with slow rural transformation need to change rural institutions, policies and programs to accelerate productivity growth and other aspects of rural transformation.

4. The 21 countries with slow structural transformations need action on most institutional and economic fronts to accelerate transformation.

5. Some of the 33 countries with rapid poverty reductions still have poor regions and disadvantaged groups such as women, indigenous peoples and groups of people suffering severe discrimination because of sexual orientation or physical or mental challenges.

6. In all countries, the many social and political empowerment issues require a range of both broad and specific remedies.

It is important to stress that because countries' speeds of transformation and inclusion are rated as "fast" or "slow" relative to their respective regional averages, figure M represents a global summary of regional results. Cross-country comparisons should therefore be made only at the regional level. It would be inappropriate and inconsistent with the underlying analysis to undertake comparisons across regions.

It is also important to restate that the component of the regional analysis based on the country typology was rendered necessarily narrow by data limitations and the need to reduce complexity. The results should therefore not be interpreted as definitive or comprehensive in the sense of capturing all aspects of rural transformation and inclusion. The regional and thematic chapters provide more detail on additional key aspects of those processes.

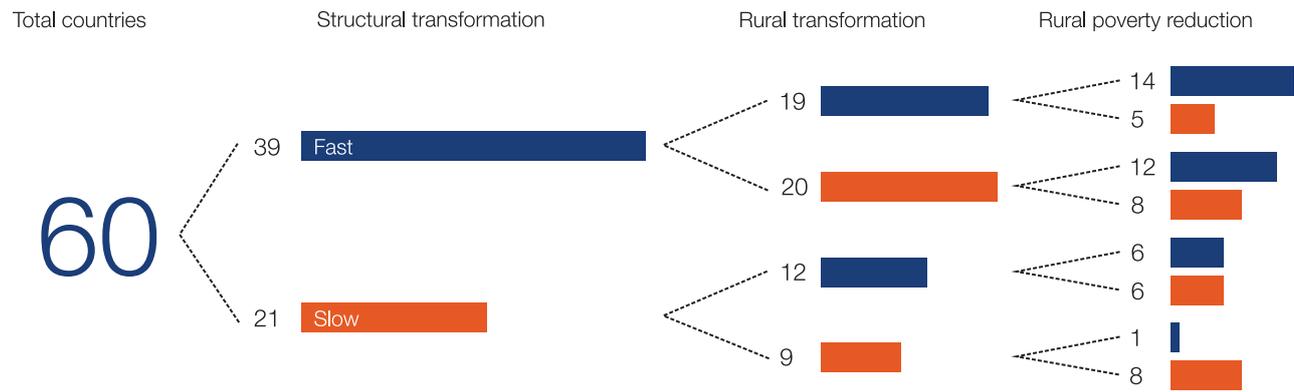
In APR, where growth was rapid and poverty reduction significant, findings are strongly consistent with the two hypotheses – more so than for any other region. Recent transformations of economies and rural societies in the region have cut sharply into rural poverty. The data do not reveal any country that transformed quite quickly that did not also cut poverty relatively fast. And the data confirm that countries that transformed relatively slowly made significant progress against poverty, but did so more slowly than the regional average.

As illustrated earlier, most countries in the LAC region had already reached relatively high levels of structural and rural transformation by the start of the period of analysis, with an urbanization rate of over 75 per cent. Findings are broadly consistent with those anticipated by the two hypotheses. Almost all countries that underwent rapid structural or rural transformation, or both, reduced rural poverty faster than the region as a whole, but not all countries that experienced rapid transformation cut rural poverty rapidly. Further, almost all countries with rapid rural poverty reduction also narrowed rural income inequality faster than the regional average.

In NEN, which is home to countries as historically diverse as Jordan, Kazakhstan and Tunisia, the urban-rural poverty gap emerges as a strong indicator of inclusion (the wider the gap, the lower the inclusiveness). Countries that have succeeded in narrowing the gap typically register higher agricultural value added per worker. A combination of above-average structural transformation with above-average rural transformation results in relatively fast rural poverty reduction and a narrower urban-rural poverty gap. Conversely, countries featuring a combination of below-average structural and rural transformations achieve slow rural poverty reduction and see a wider urban-rural poverty gap.

In sub-Saharan Africa, where the dominant narrative about social and economic development in Africa is of a fast-transforming continent showing mixed but generally positive performance, the picture with respect to the hypotheses is also mixed. Agriculture shows

FIGURE M A global view of region-specific transformation and inclusion outcomes



Source: IFAD, based on World Bank (2015c), subset of 60 countries.

healthy growth in terms of both output and productivity, but the commodity mix is not undergoing much diversification. Of the 23 countries out of 28 in the region that registered quite fast structural and/or rural transformation over the period of analysis, only 15 managed to cut poverty quickly. But 9 relatively slow transformers, i.e., with slow structural and/or rural transformations, were able to reduce poverty at quite fast rates.

The thematic chapters in this report shed light on drivers of inclusiveness and policies, institutions and investments that can enhance inclusiveness. Six core areas for policy action and investments are addressed: employment, land and natural resources, rural finance, agricultural technology innovation, markets and value chains, and collective action. Several issues are cross-cutting in nature, with important inclusion-enhancing or inclusion-impeding dimensions: food and nutrition security, resilience, fragility, gender equality, environmental sustainability, social protection and governance. Findings identify a range of inclusion-enhancing and inclusion-limiting forces in each of these areas, with clear implications for policy and investment.

Alongside these region-specific and thematic findings, policymakers with responsibility for rural development face critical strategic challenges – and opportunities – which require context-specific choices, and which must recognize and accommodate not only extant conditions in rural areas but also a range of forces that link conditions in rural areas to

broader economic and social dynamics. The typology was developed and applied at country level, but as illustrated in the regional and thematic chapters, conditions sometimes vary widely across regions and rural areas within countries. Context-specific implications for rural development strategies for inclusive rural transformation thus may have relevance at subnational levels in some countries. The report’s recommendations for policy reform, institutional innovation and investment are framed with these several insights in view.

### Rural development strategies for inclusive rural transformation

The regional and thematic analysis makes it clear that the type of transformation a country (or subnational region) experiences creates some path dependency for the future. This has strong implications for the opportunities and challenges before it today, and for the policies, institutions and investments on which it should focus now and in the future.

At issue in this report are rural development strategies that promote inclusive rural transformation, contributing to inclusive structural transformation and sustainable growth. The historical record and recent trends summarized in the regional and thematic chapters suggest two strategic choices facing countries: (1) they must pursue appropriate approaches to rural development under structural transformation, resolving fundamental political economy challenges in the process, and (2) they must set appropriate

objectives for rural development in contexts of differing rates of transformation and inclusion, with important implications for required policy reforms, institutional innovations and investments.

### **The political economy of inclusive rural transformation**

A major conclusion of the report is that a country's approach to rural development must accommodate its overall level of structural transformation. Several chapters confirm the argument convincingly advanced by Timmer (2014) that, because of strong interactions between structural transformation and the agrifood system, the political economy of structural transformation hinges on the role and importance assigned to agriculture as the transformation unfolds. The evolution and destiny of agriculture shape and reflect structural transformation. Agriculture, rural areas and the broader agrifood system always matter. Not only do they contribute directly to livelihoods, food and nutrition security, and environmental and natural resource conservation, they also define the politics of transformation, which, in turn, frames the political economy of rural development (Timmer 2014).

Three approaches to (or stances towards) rural development are suggested, each raising distinct political economy challenges: *agriculture-boosting* where the level of structural transformation is relatively low, *agriculture-modernizing* at higher but still moderate levels of structural transformation and *agriculture-sustaining* where structural transformation is highly advanced (table G).

#### **Agriculture-boosting approaches**

At relatively low levels of structural transformation, primary agriculture looms large in economic activity, accounting for the bulk of employment for a populace that is still largely rural and often youthful. There is no more potent generator of employment than primary agriculture. The appropriate approach to rural development is clear: boost agriculture through rapid productivity growth.

Yet the political economy of agriculture-boosting rural development is not straightforward. The challenge springs from agriculture's poor initial productivity compared to other sectors like manufacturing and mining, which, while able to contribute more efficiently to aggregate GDP, have narrow employment bases. These visually prominent sectors often dominate political establishments. Leaders must find ways to resist strong but misplaced pressures to devote disproportionately large shares of scarce public resources to such sectors and choose instead to focus sharply and steadily on agriculture.

Such a focus is demanding, for agriculture is strewn with value-destroying constraints that render the aim of spurring broad-based productivity growth extraordinarily difficult to achieve. The chapter on Asia and the Pacific illustrates the returns to meeting this "first generation" political economy challenge, pursuing an agriculture-boosting approach over decades, and thereby launching countries on pathways towards inclusive rural transformation. The chapter on sub-Saharan Africa demonstrates the cost of not doing so: an agricultural sector registering relatively strong growth on aggregate but with weak fundamentals. The upshot is inadequate productivity growth and slow movement towards a structure that can deliver broad-based and sustained reduction in poverty and inequality.

#### **Agriculture-modernizing approaches**

As structural transformation reaches higher but still moderate levels, the evolution of the agrifood system is increasingly subject to dietary transformation (based on rising incomes, urbanization and changing consumption preferences) and to agrifood-marketing transformation (based on rapid changes in processing, procurement and distribution logistics). Consequently, the centre of gravity of economic and political interests in these systems rests increasingly within the burgeoning urban middle class. Also growing in political importance are the interests of so-called "dynamic" farmers with good access to natural resources, input and output markets, finance and information.

TABLE G Rural development approaches for inclusive rural transformation<sup>8</sup>

	Rural development approaches		
	Agriculture-boosting	Agriculture-modernizing	Agriculture-sustaining
<b>Rationale</b>	<i>Low structural transformation.</i> Primary agriculture looms large in GDP and dominates employment, but generates low incomes owing to low productivity	<i>Moderate structural transformation.</i> Primary agriculture is less important in GDP, but agriculture-related activities dominate the rural economy, especially the non-farm segment, which emerges as a key source of employment and income. Fast-expanding urban areas drive agrifood system transformation	<i>High structural transformation.</i> The modern agrifood industry is an important source of income and employment, but many pockets of poverty and natural resource degradation are found in rural areas, implying growing inequality and unsustainable growth. Nutrition, health and sustainability concerns become increasingly important
<b>Key aims</b>	Spur broad-based productivity growth in primary agriculture, aiming to boost agriculture's capacity to serve as an engine of transformation	Modernize agriculture to sustain, widen and diversify productivity and income growth in rural areas. Strengthen linkages to the rest of the economy. Keep food prices low in fast-growing urban areas	Ensure a sustainable and well-functioning agrifood system that delivers critical public goods and that provides groups with agriculture-based livelihoods with opportunities to enter the mainstream
<b>Core political economy challenges</b>	"First-generation" challenges linked to a long-term focus on agriculture, despite its huge challenges, and despite seemingly higher returns to investments in other sectors	"Second-generation" challenges linked to focusing on rural areas, even as urban areas expand and the urban middle class grows in power and influence	"Third-generation" challenges linked to balancing pressures for provision of agriculture-based public goods while sustaining support to shrinking rural populations with agriculture-based livelihoods, especially smallholder farmers and other impoverished marginalized groups
<b>Relevant to</b>	<ul style="list-style-type: none"> <li>■ Many low-income developing countries</li> <li>■ Much of SSA</li> </ul>	<ul style="list-style-type: none"> <li>■ Many lower middle-income countries</li> <li>■ Parts of SSA and much of APR</li> </ul>	<ul style="list-style-type: none"> <li>■ Many higher middle-income countries</li> <li>■ Much of LAC and NEN</li> </ul>

If momentum for inclusive transformation is to be sustained, the nascent impetus towards modernization must spread and deepen in rural areas. Increasing numbers of farmers – especially smallholder farmers – and rural SMEs must be supported to make the transition to greater specialization and diversification in production and trade.

Political momentum must be generated and sustained for modernizing rural areas and integrating them with the wider economy. The aim must be to expand and deepen the agriculture-based rural economy, cultivate a

rural middle class built on a diverse group of productive farmers and efficient rural SMEs and agribusinesses, and thereby achieve a sustainable balance of rural and urban interests. Meeting this "second generation" political economy challenge is critical. The temptation to allow structural transformation's seemingly "natural" dynamics to marginalize rural areas must be resisted. Evidence from LAC suggests that such dynamics can sow the seeds of deeply rooted inequalities within rural areas, and between rural areas and the rest of the economy.

### Agriculture-sustaining approaches

At high levels of structural transformation, the agrifood system is deeply intertwined with the rest of the economy, with its most dynamic segments operating at the cutting edge of technological advance. A common feature of agriculture in such economies is a three-fold segmentation into a “modern” high-productivity, mechanized, often large-scale category, a modernizing group of part-time farmers and a “traditional” segment of small family farms in marginal areas with poor market linkages. Many pockets of poverty are therefore found in rural areas, and among particular groups there, such as ethnic minorities, the elderly, and women. Meanwhile, urban populations are larger and growing more rapidly than rural populations. Consumer concerns about food safety, nutrition, health and environmental and natural resource conservation dominate public discourse about desirable features of the agrifood system.

Countries at this stage of transformation face a “third generation” challenge due to the need to build momentum for support to a sector that, despite its relatively small size, has important effects on several other parts of the economy. As leaders respond to legitimate demands for generating increasingly vital public goods from agrifood systems, they must also give voice and representation to rural groups still directly dependent on agriculture for their livelihoods. The chapters on Latin America and the Caribbean and the Near East, North Africa, Europe and Central Asia demonstrate that the needs and interests of these typically marginalized groups coincide strongly with the long-term sustainability of rural areas and broader agrifood systems.

These political economy considerations confirm that political will is a meaningful concept only insofar as it has an objective. Under structural transformation, political objectives for rural development are context specific. The nature of the approach to rural development is crucial, and that approach derives from the implications of structural transformation for agriculture. Stakeholders seeking to influence rural development strategies must seek to build political narratives and capital for outcomes

that are congruent with actual political tensions and opportunities rather than academic or idealized ones. These considerations apply not only at the national level, but also at subnational levels, where trends towards the greater decentralization of decision-making place regional and local authorities on the front line of rural development strategy design and implementation.

### Objectives, policies, institutions and investments for inclusive rural transformation

Even as countries or subnational regions confront the political imperatives of rural development under structural transformation and develop the political will to act, what exactly should they do to increase inclusive rural transformation? Which specific outcomes in rural areas should they be trying to achieve, why and through which means?

The typology suggests four categories of transformation and inclusion into which most countries or subnational regions fall: (i) fast transformers/fast includers (32 in our sample of 60 countries), (ii) fast transformers/slow includers (19), (iii) slow transformers/fast includers (1), and (iv) slow transformers/slow includers (8).

Distinct objectives for rural development strategy are implied:

- Fast transformers/fast includers should aim to **adapt** so as to sustain progress and address problems inherent in rapid growth.
- Fast transformers/slow includers should aim to **amplify** by expanding the reach of benefits accruing to rural populations while sustaining speed.
- Slow transformers/fast includers should aim to **accelerate** the pace of transformation without sacrificing the inclusiveness of benefits.
- Slow transformers/slow includers should aim to **amplify and accelerate**, seeking both to expand the reach and accelerate the generation of benefits.

The regional chapters employ the typology and other considerations to identify and

explain relevant transformation and inclusion trajectories and outcomes. These and other findings in the thematic chapters and spotlights point to different pressures to be addressed in each category, implying different sets of priorities for policy reform, institutional innovation and investment to promote inclusive rural transformation (table H). The aim here is not to specify all possible measures and interventions. Rather, it is to identify those signalled by the chapters and spotlights as most central to addressing the emerging pressures and to meeting context-specific objectives for inclusive rural transformation.<sup>9</sup>

Pressure points, policy reforms, institutional innovations and investments are elaborated here for each category of countries or subnational regions. Some pressure points appear in more than one category. A few measures are therefore also relevant across categories. But the majority are category specific. Responding to requirements to adapt, amplify, and accelerate is complex. As expected, countries or subnational regions facing imperatives both to amplify and accelerate face the greatest burden of policy reform, institutional innovation, and investment needs. Several challenges and opportunities apply to all country or subnational categories, implying a rich set of cross-cutting priorities (see box B).

### **Adapters – fast transformers/fast includers**

#### *Pressure points*

*Declining job quality and security:* Employment relations are showing a rising trend towards informality, with temporary jobs growing rapidly. There is also a widening gap between jobs that provide social benefits and those that do not.

*Inadequate and/or unsustainable social protection systems:* Even with rapid inclusion, poverty and vulnerability persist and are likely concentrated in specific geographies or within particular groups. Social protection systems in some countries are inadequate in coverage and quality. Those in others are more comprehensive but face growing pressures as growth slows and public resources tighten.

*Increasing skill- and technology-driven competition:* Competition in agrifood value

chains is intense and global. Competitiveness is increasingly based on capacity to deliver high-quality products with high levels of embedded technology, skills, and quality assurance.

Whether among employees or entrepreneurs, new agricultural and non-farm sector jobs increasingly demand a minimum of skills and capital, and often, mobility and flexibility. These requirements, alongside a range of social and cultural barriers, lead to a substantial risk of exclusion of women and of landless workers.

*Exposure to new risks:* Structural and rural transformation implies increasingly complex relationships in value chains and other areas. Thus, they also entail ever more complex risks that require more sophisticated instruments to spread risk across value-chain actors. For many rural communities, informal networks and traditional institutions still play strong roles in spreading risk, but these arrangements face increasing limitations.

#### *Policy reforms*

*Reform for better and more secure jobs in the informal sector:* Policies and programmes need to work with the informal sector, not against it. This entails reducing administrative and land constraints, improving productivity and extending social protection to workers in the informal sector and to the growing number of informal workers used by firms operating in the formal sector. Informal sector entrepreneurs and workers should have assistance to function better, through legal protection against harassment, investment in skills and provision of well-sited land, electricity, water and sanitation.

*Social protection reform:* Impacts of social protection systems depend on how well the poor are covered, and on how appropriate the benefits are. Higher spending is typically associated with higher impacts on poverty. However, even within similar budgets, some countries do better than others at each level of spending. Targeting could be improved, and systems better coordinated. Scope for integrating social protection and agricultural programmes should be further explored. Public provision of a basic package of benefits for all, such as health, education,

TABLE H Rural development objectives, policy reforms, institutional innovations and investments under different contexts of transformation and inclusion

	Rural development objectives			
	Adapt	Amplify	Accelerate	Amplify and accelerate
Transformation and inclusion speeds	Fast transformation, fast inclusion	Fast transformation, slow inclusion	Slow transformation, fast inclusion	Slow transformation, slow inclusion
Key pressure points	<ul style="list-style-type: none"> <li>■ Declining job quality and security</li> <li>■ Inadequate and/or unsustainable social protection systems</li> <li>■ Increasing skill- and technology-driven competition</li> <li>■ Exposure to new risks</li> </ul>	<ul style="list-style-type: none"> <li>■ Unequal access to productive resources</li> <li>■ Weak rural organizations</li> <li>■ Inadequate financial inclusion</li> </ul>	<ul style="list-style-type: none"> <li>■ Uneven technology uptake</li> <li>■ Poor incentives for private investment in rural areas</li> <li>■ Weak rural-urban linkages</li> <li>■ Inadequate financial inclusion</li> </ul>	<ul style="list-style-type: none"> <li>■ Unfavourable conditions for technology development and adoption and market expansion</li> <li>■ Low purchasing power and vulnerability</li> </ul>
Priority policy reforms	<ul style="list-style-type: none"> <li>■ Reform for better and more secure jobs in the informal sector</li> <li>■ Social protection reform</li> </ul>	<ul style="list-style-type: none"> <li>■ Land tenure reform for more secure access</li> </ul>	<ul style="list-style-type: none"> <li>■ Fiscal, legal and regulatory reforms to improve the rural investment climate</li> </ul>	<ul style="list-style-type: none"> <li>■ Input and output market and pricing reform</li> <li>■ Land tenure reform for greater access</li> </ul>
High-return institutional innovations	<ul style="list-style-type: none"> <li>■ Upgrading of rural financial system</li> <li>■ Public-private partnerships to upgrade agrifood system</li> </ul>	<ul style="list-style-type: none"> <li>■ Rural financial system expansion and deepening</li> <li>■ Territorial approaches</li> <li>■ Public-private partnerships to deepen agrifood system, focusing on major staples, livestock and horticulture</li> <li>■ Promotional social protection</li> </ul>	<ul style="list-style-type: none"> <li>■ Rural financial system expansion and deepening</li> <li>■ Territorial approaches</li> <li>■ Public-private partnerships to deepen agrifood system, focusing on major staples, livestock and horticulture</li> </ul>	<ul style="list-style-type: none"> <li>■ Essential rural financial system development</li> </ul>
Critical investments	<ul style="list-style-type: none"> <li>■ Targeted upgrading of technology, skills and capabilities to enhance employability and entrepreneurial capacity in rural areas</li> </ul>	<ul style="list-style-type: none"> <li>■ Technical and operational upgrading of farmer organizations (FOs) and other rural collectives representing marginalized groups</li> </ul>	<ul style="list-style-type: none"> <li>■ Enhanced agricultural R&amp;D</li> <li>■ Improved market infrastructure</li> <li>■ Technical and operational upgrading of FOs and other rural collectives representing marginalized groups</li> </ul>	<ul style="list-style-type: none"> <li>■ Essential agricultural R&amp;D</li> <li>■ Essential rural infrastructure</li> <li>■ Essential capacity development of FOs and other rural collectives</li> <li>■ Public works and employment guarantee schemes</li> </ul>
Cross-cutting priorities	<ul style="list-style-type: none"> <li>■ Public agricultural R&amp;D; nutrition; gender equality; governance and accountability; digital solutions; resilience; natural resource management; monitoring, evaluation, and data collection</li> </ul>			

pensions and other forms of protection, should be the ultimate goal. This may be expensive, but, if effective, efficient and equitable, it is justified by its impact on efficiency, growth and equity.

#### ***Institutional innovations***

*Rural financial system upgrading:* Policy adjustments and direct support are required to develop improved and commercially viable financial products that can reach smallholders and other marginal groups. They include innovations in loan terms that are better adapted to the needs of agriculture than current micro-finance practices, use of “aggregators” such as credit suppliers or commodity off-takers, and further support for development and uptake micro-level insurance. Adapting insurance and other risk management techniques to the rural clientele allows risks to be spread and transferred to actors with greater risk management capacity. It also encourages prudent investment, livelihood diversification and risk sharing. Strong interest from national governments, rural populations, civil society, the private sector and donors suggests the value of continuing to invest in developing instruments and business models, while strengthening organizations.

#### *PPPs for agrifood system upgrading:*

Coordination and linkage support to key supply-chain participants, including farmers, FOs and SMEs, would benefit management and transparency of supply chains, quality of final products and profitability of the value-chain actors. Coordination arrangements such as platforms, networks, high-potential clusters or development corridors can strengthen synergies, avoid duplication, minimize transaction costs and optimize resource use. Decision powers, reward systems and performance criteria need to be clear, transparent and enforced to result in positive-sum games in which all partners agree to cooperate, share profits and risks.

#### ***Investments***

*Targeted upgrading of technology, skills, and capabilities to enhance employability and entrepreneurial capacity in rural areas:* With a particular emphasis on youth, women, landless workers and other groups facing substantial

risk of exclusion, measures to enhance employability include targeted improvement of key technological skills, vocational training for jobs in the commercial sector and basic life skills for success in working environments. To boost entrepreneurial capacity, critical skills to be enhanced include those on starting and running businesses, marketing promotion, human resources and financial management. But better skills alone are not enough, and must be matched by expanded access to finance and financial services.

#### **Amplifiers – fast transformers/slow includers**

##### *Pressure points*

##### *Unequal access to productive resources:*

Discrimination and exclusion related to economic class, gender, place of residence, sexual orientation, disability, age or ethnic identity lead to denial of access to productive assets, such as land or to financial services. Opportunities and motivations for welfare-enhancing investment are therefore blunted for too many groups of rural people. These marginalized groups enter markets and other rural arenas and forums with poorer human capabilities than others. They also receive lower returns for equal effort because of discrimination. Women farmers, in particular, despite being equally productive and entrepreneurial, often have greater difficulties in accessing land, finance and inputs, and receive lower prices for their crops than men farmers.

*Weak rural organizations:* Owing to technical and operational limitations, rural collective organizations representing farmers and other rural dwellers may be unable to fully seize opportunities under transformation. Thus they do not always deliver on their immense promise to expand access to markets, natural resources, infrastructure, information and policy influence for their members.

*Inadequate financial inclusion:* Provision of finance and financial services to poor rural households and SMEs involves many challenges, many of which stem from seasonality of agriculture, high and covariant risks, low population density and weak infrastructure in rural areas. Inadequate financial instruments

and institutions, limited reach and capacity of rural financial service providers, and low levels of education and financial literacy of actual and potential clients stunt and distort rural financial markets. The demand-side is further constrained by the seasonality and risk inherent in smallholder farming, and by a preponderance of potential clients, such as women, who often require smaller loans than men and may face discrimination in the credit institutions. Many potential clients lack access to due judicial process, lack property rights or secure land tenure, and thus cannot offer the typical kinds of loan collateral. Despite the importance of SMEs for rural development, these businesses rarely have access to formal savings and payment services.

### ***Policy reforms***

*Land tenure reform for more secure access:* Reforms that strengthen security of property rights in an inclusive and equitable manner should be prioritized. Adaptation of communal rights systems and clarification of use rights can maintain or improve tenure security and equity in such systems. Where communal systems are no longer able to do so, programmes that transfer responsibility for land management from customary to statutory institutions can improve efficiency and reduce conflict. They should be able to recognize and accommodate a continuum of rights, from communal use rights to freehold title to land. In the recording of existing rights to land, their certification and/or titling – the objective of inclusion – is served best by including all right holders and all land in a given area.

Instead, land titling on demand, often from a central authority, continues to be used, favouring the well-connected and allowing elites to acquire land at the expense of small farmers, to dispossess indigenous groups, and to increase the chances of conflict. Where area-base titling is difficult, as in countries with low population density, code of conducts and safeguards are required to prevent elite capture. Attention to gender equality during implementation and enforcement of statutory land rights is very important, as well as attention to inclusion of other disadvantaged groups.

### ***Institutional innovations***

*Rural financial system expansion and deepening:*

Product innovations (such as new inventory credit systems), process innovations (automated workflow or logistical processes) and system innovations (introduction of rural banks) are required to enable marginalized rural households to use formal financial systems and access affordable finance and reliable and transparent financial services. Incentives for financial institutions to expand rural footprints and savings and lending services to farmers, FOs and rural SMEs must be improved. Bank guarantees, credit default swaps and similar measures should be developed and tested so as to expand access to finance by reducing the risks in lending to marginalized groups. Structured financial transactions, such as value-chain finance arrangements, should also be encouraged, along with Shari'a-compliant financing, where appropriate.

*Territorial approaches:* Approaches that embrace the diversity of actors in rural areas and build on rural-urban interdependencies and synergies should be further explored and strengthened. These approaches provide wider opportunities to smallholders, linking producers and consumers from urban and rural areas to markets and contributing to more sustainable and inclusive modalities of food production and consumption. They also foster coherence among different sectoral policies and levels of government. Through these platforms, marginalized groups can gain better access – and on better terms – to the regional, national, and international markets on which their livelihoods increasingly depend as rural transformation unfolds.

*Public-private partnerships for agrifood system strengthening, focusing on major staples, livestock and horticulture:* Markets for major staples, livestock and horticulture offer the greatest opportunities for income growth and livelihood improvement for smallholder farmers across the globe. However, mainstream domestic value chains suffer from low profitability and are often unfair. New partnerships are required to help smallholder farmers and other disadvantaged groups identify and develop new

market outlets, improve the quality and increase the value of the goods they seek to produce and trade, and finance market development, quality improvement and value enhancement. Development of business advisory and extension services covering local businesses and farmer groups can promote technical upgrading and formulation of solid investment projects, with good business plans and rates of return on investment that can attract the interest of medium and large firms. Commercially oriented measures to direct public demand for quality food (from school feeding programmes and other public institutions and programmes, such as prisons and hospitals) towards smallholders should be strengthened and expanded.

*Promotional social protection:* Conditional transfers (cash or in kind), combined with targeted capacity strengthening, may not only improve the income and use of essential services, such as education or preventive health care, but can also help households to diversify livelihood options and so manage future risks and promote longer-term resilience. Careful targeting and measures to promote empowerment and agency of beneficiaries are central, too. Linking public spending on agriculture and social protection programmes can lead to synergy gains, not only furthering growth linkages and transformation, but also enhancing these processes' inclusiveness. Programmes targeted at women show great benefits, particularly on key inclusion criteria such as child health and nutrition. They are especially important because maternal and child malnutrition perpetuate exclusion and poverty from generation to generation – undermining the capital needed to drive rural transformation and the inclusiveness of the process. Evidence of lasting impacts of such integrated programmes is emerging, in particular for “graduation approaches” that provide grants to the poorest for user-selected productive investments along with careful, specific and sustained support to the capacity development of individual beneficiaries.

#### **Investments**

*Technical and operational upgrading of farmer organizations and other rural collectives representing*

*marginalized groups:* Investments must focus on addressing enduring gaps in governance, operations, financing and policy engagement. Governance investments must aim to increase transparency and legitimacy, building on existing social capital. Appropriate connections to external agents, who can channel new ideas, innovation and material support to collective organizations, are necessary. Operational investments must aim to strengthen the mechanics of collective action, focusing on structures and processes for assigning decision-making authority, for evaluating performance and for rewarding performance, and thus foster organizational efficiency and effectiveness. Support is required to boost financial literacy, choose relevant business models, and strengthen financial management and transparency. It should enhance understanding of the operating mechanisms of government and external funders.

#### **Accelerators – slow transformers/ fast includers**

##### *Pressure points*

*Uneven technology uptake:* Even when productivity-increasing technology appears, it is adopted and used at widely varying rates. For instance, adoption of improved seed is much higher than that of fertilizer, even though full returns to the former require application of the latter. Promising innovations – such as conservation farming – that build robustness into clusters of technologies through integrated systems are spreading but slowly.

*Poor incentives for private investment in rural areas:* Rural transformation requires vibrant investment from the private sector. Such investment is impeded by a rural business environment hobbled by, for example, lack of basic infrastructure, inadequate credit and insurance markets, poor tenure security, and ethnic and gender disparities.

*Weak rural-urban linkages:* Urban centres depend on rural areas for a range of goods and services, notably food, clean water, environmental services and raw materials. Rural areas typically depend on urban areas for access to services, employment opportunities and

## BOX B Managing cross-cutting challenges and opportunities

The regional and thematic chapters in this report point to several cross-cutting challenges and opportunities that are likely to face governments in all four contexts. Especially important are challenges and opportunities related to public agricultural research and development (R&D), nutrition, gender equality, governance and accountability, digital solutions, resilience, natural resource management, monitoring, evaluation and data collection. Priorities for action express themselves at different levels, affecting different groups of people. But to realize inclusive rural transformation, governments must find solutions to each of them.

### Boosting public agricultural R&D

Productivity growth is an outcome of several interacting factors including: levels and speeds of development, release, adoption and utilization of improved technologies and practices, reliable outlets for generated surpluses, institutions and policies that mitigate risk and provide appropriate incentives, and investments that strengthen key human, physical and institutional capacities. All of these require significant levels of public funding. But few countries devote sufficient public resources to agricultural R&D. Potential synergies between public and private research are high and must be fostered. While private sector involvement in R&D is increasing, it often depends on results from public R&D and concentrates on innovations where profits are easily appropriated. The range of appropriable innovations is becoming wider through patenting. Where profits cannot be appropriated, public sector research is imperative.

### Improving nutrition

Rapid transformation of food systems spurs rural transformation but it also raises risks of different forms of malnutrition. Both “nutrition-specific” and “nutrition-sensitive” policies and investments are required. *In food production*, policy tools should focus on promoting availability, affordability, diversity and quality of food, nutrition-oriented R&D, promotion of nutrition-rich foods in school and home gardens, and shifting to sustainable and nutrition enhancing production methods. *In food marketing*, given the increasingly vital role of food companies in shaping food systems, the focus should be on regulation and taxation to promote efficiency, safety, quality and diversity of supply chains, and also on innovation in product formulation and transport, especially with respect to reduction of waste and spoilage. *In food consumption*, well-targeted nutrition-focused food assistance programmes and broader safety nets, appropriate food price incentives, nutrition regulation, education that is sensitive to the roles of women, and information campaigns backed by evidence on how to promote better diets are required. These measures must be underpinned by improved access to clean water, adequate sanitation and proper hygiene in both urban and rural areas. Publicly held food reserves continue to be important components of many national food and nutrition security strategies and must be more effectively managed. The cross-sectoral (“horizontal”) imperative of coherent food and nutrition policy must be recognized and appropriately accommodated through integrating platforms that span agriculture, health, commerce, education, social services, transport and public works, as well as local government.

### Enhancing gender equality

Easing access to and control over productive resources and assets is essential for rural women to participate in and benefit from economic activities by diversifying their income base. The scale of the challenge is immense, pointing to a wide and deep range of required measures. Improving access to decent employment opportunities is crucial to reducing poverty, particularly for rural women and youth who make up a growing proportion of the rural labour force in many developing



countries. Developing the skills and the knowledge of rural women and girls through training in literacy and numeracy or vocational training enables them to participate more in development interventions and business opportunities. Education and skills development enhance capacities and equip rural women, particularly young women, for success in agricultural and non-agricultural employment. Fostering women's participation and leadership in rural organizations and community groups and supporting women's groups are required to strengthen their voice and influence. Rural women must be supported to gain more control over the decisions that affect their lives, including in public affairs, in user groups such as farmers' organizations, and at community and household levels. Empowering women at the household level is also important for their overall well-being and that of their families.

### **Strengthening state implementation capacity and accountability**

The process of inclusive rural transformation occurs across wide geographic areas, contrasting socio-economic and cultural contexts, and distinct institutional and political regimes. State and non-state institutions exert strong influences on outcomes. State capacity to design and implement policies and programmes to catalyse and sustain such transformation is fundamental. So, too, is strong participation from a broad spectrum of stakeholders, all of whom must devote resources to policy processes to ensure that their interests are adequately represented. State capacity and accountability and stakeholder voice and participation must be strengthened and sustained through innovations in institutional structures and governance arrangements. Issues of power, participation, representation, contract enforcement, negotiation and conflict resolution arise and must be addressed in participatory ways.

Mechanisms for transparent dialogue must be designed and supported, aiming to spur the emergence of new cooperative behaviour among a range of stakeholders from public, private and civil society sectors, based on trust and shared values. Collective organizations representing smallholders and other marginal groups add importantly to these multi-stakeholder platforms and consultation forums by ensuring that practical concerns facing these groups are voiced. These efforts require support.

### **Exploiting digital solutions**

The rapidly expanding array of tools based on information and communication technologies opens up new opportunities to remedy the asymmetry of information between buyers and sellers of agricultural commodities, enhance yields, improve quality, reduce post-harvest losses, remove intermediaries and disseminate knowledge about best practices. Through websites, smartphone applications and SMS text messages, farmers are able to gather information on a wide range of topics such as plant diagnostics, planting reminders and advice, fertilizer and pesticide application assistance, weed identification, GPS-enabled field notes and yield improvement. Viable business models to take promising innovations to scale must be developed. Investments to expand basic literacy, numeracy and core rural infrastructure must be prioritized.

### **Increasing resilience**

Changes in the nature of risks induced by structural and rural transformation illustrate the importance of strengthening three types of capacity. *Absorptive capacity* is the ability to absorb the negative impact of shocks and stresses, and to cope with change in the short term. *Adaptive capacity* is the ability to make proactive and informed choices about alternative strategies based on an understanding of changing conditions. *Transformative capacity* is the ability to utilize



mechanisms, such as government services, infrastructure, market systems and community networks to manage and benefit from change in the long term. All three capacities are boosted by investments and arrangements that enhance capacity to manage risk. Policies and investments that promote efficient and effective disaster preparedness and response, enhanced risk transfer and prudent risk-taking for livelihood diversification are required.

### **Promoting sustainable management of natural resources**

Most natural resources are complex interdependent ecological and social systems that require integrated management approaches. Private ownership is costly and inequitable. Direct state control has high information, technical, coordination and monitoring requirements. Local community control may be skewed towards influential members and exclude the poorest members of communities. Devolved management arrangements that combine state, private and community control over natural resources can offer more efficient, equitable and sustainable management. Multiple benefit approaches that preserve biodiversity and protect soils while contributing to higher long-term sustainable agricultural productivity (such as conservation agriculture, agro-forestry, integrated pest management, landscape approaches, integrated plant nutrient management and organic agriculture) must be tailored to local circumstances.

Linkages and complementarities between local strategies and an enabling international governance agenda, where responsible investment safeguards are in place and are respected, are essential. An increased understanding and leveraging of rural-urban interdependencies with respect to the management and access to natural resources is also required. The potential of small and intermediate cities to improve flows of goods, resources and services between rural and urban people must be seized. Centres to mitigate pressures associated with flows of migration from rural areas to large cities must be examined and exploited where possible.

### **Strengthening monitoring, evaluation, and data collection**

Context-specific approaches to rural development, such as those proposed in this report, require detailed information bases about levels and changes in key decision and outcome variables in rural areas. The analysis in this report would have been greatly enriched by a deeper and wider information base, but the required data were missing or patchy due to underinvestment in rigorous monitoring and evaluation of development investments and conditions in rural areas more broadly. The returns to the World Bank's strategic investment in the Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) data are already emerging, in terms of greatly enhanced understanding of conditions and dynamics in rural areas. These and other such investments must be strongly supported and expanded, with an emphasis on capacity development at national levels.

markets. But where rural-urban linkages are weak because of physical and institutional factors, rural people and smallholders often cannot equitably reap the benefits of urbanization, most notably those related to burgeoning urban demand for agrifood products.

*Inadequate financial inclusion:* The same set of pressures experienced by Amplifiers applies here.

### ***Policy reforms***

*Fiscal, legal and regulatory reforms to improve the rural investment climate:* In addition to increased investment in physical infrastructure and in efficient public institutions working with the private sector, there is a pressing need for other measures. These are to put in place missing rules and/or remove or clarify the large body of ambiguous, economically flawed, excessive or poorly implemented laws and regulations that impede private investment in rural areas. Special attention should be paid to removing impediments to private investment in improved agricultural technologies, including adapting seed varieties to local conditions, ensuring seed multiplication and distributing agrochemicals and agricultural machinery. Enforcing intellectual property rights is crucial.

### ***Institutional innovations***

*Rural financial system expansion and deepening:* The same set of institutional innovations experienced by Amplifiers applies here.

*Territorial approaches:* The same set of institutional innovations experienced by Amplifiers applies here.

*Public-private partnerships for agrifood system strengthening, focusing on major staples, livestock, and horticulture:* The same set of institutional innovations experienced by Amplifiers applies here.

### ***Investments***

*Enhanced agricultural R&D:* The range of providers of inputs, advice and technology must be widened hugely. Increased private sector R&D helps in crops, traits and technologies in which profits are appropriable and therefore important to the livelihoods of the poor. Research by, or financed by, the public sector remains

vital as there are many areas of technology in which private firms have little incentive to invest, such as basic research, agronomy or soil science. Support should be given to participatory research that involves or is led by farmers and includes other local stakeholders, and that combines technical innovation with collective action. Innovative approaches to technology development and dissemination, such as information and communications technology, can help technology adoption among smallholders. The effectiveness of such new approaches must continue to be carefully evaluated. Index-based insurance is still in the development stage, while most “smart subsidy” programmes have suffered from displacement of market demand of fertilizer by subsidized fertilizer, and from large diversions even before fertilizers reach the farm. These innovations still have to overcome political, structural or institutional factors that impede effectiveness and inclusiveness.

*Improved market infrastructure:* To boost commercial linkages between rural and urban areas and ease the growing demand-pull from the latter to the former, commerce-enhancing infrastructure (hard and soft) must be expanded, including roads, electricity grids, connectivity, storage and warehousing capacity, and rural and wholesale markets (and complementary services). Investments that enhance transparency and reduce transaction costs in markets for major staples are especially important.

*Technical and operational upgrading of farmer organizations and other rural collectives representing marginalized groups:* The same set of investments experienced by Amplifiers applies here.

## **Amplifying accelerators – slow transformers/slow includers**

### ***Pressure points***

*Unfavourable conditions for technology adoption and market development:* Technology development and adoption suffer from straitened research budgets and inadequate extension services. Wide spatial dispersion of production, high transport costs and seasonality yield high market-price risks and aggravate unequal financial bargaining power. Multiple policy-related impediments

to commodity movement and efficient price discovery impose deep challenges on small farmers and traders. For many smallholders, market-based input and output prices can imply negative returns to adopting hybrid seeds and inorganic fertilizers. Subsistence-oriented production persists and marketing decisions are constantly affirmed.

*Low purchasing power and vulnerability:* Many spatially dispersed producers face high risks, lack on-farm storage capacity, and produce and trade bulky and low-value staple foods in small quantities. These producers lack purchasing power to serve as incentives for service providers to make the investments that would improve farmers' access to the items and services they need to intensify production. With climate change, droughts, floods and storms are wreaking greater havoc on agricultural production systems, trapping households in cycles of food insecurity and poverty that may lead to destitution.

### **Policy reforms**

*Input and output market and pricing reform:* Markets for farm inputs and staple foods are often costly and volatile for smallholders to depend on. Prices and trading conditions can be manipulated with impunity by powerful market agents. On the input side, subsidies remain controversial, but scope for broad-based adoption of improved technologies without them is narrow. The central political, design, and implementation challenges are well understood and must be overcome to increase efficiency, control costs, and check patronage and fraud. It is vital to integrate these with other policies so as to increase agricultural productivity and manage production surpluses. Barriers to movement of goods from surplus to deficit areas and to urban centres must be removed, allowing the private sector to perform this vital function. To improve incentives for investing in technology, it is important to tackle the "good year" problem that leads to wide price fluctuations and spoilage. The key policy need is to find ways to absorb harvest-time surpluses and stabilize prices, but without blunting incentives for private arbitrage over space, time and processing

form. Significant procurement and storage at harvest time and during distribution involve coordination of public and private actors, which, if well implemented, will help to stabilize prices for producers and consumers. For that to happen, major political and governance weaknesses must be addressed.

#### *Land tenure reform for greater access:*

Improvements in transparency and security of land rights is vital. Land rental markets can improve the allocation of land to youth and part-time farmers, as well as to consolidating full-time farmers. They function fairly well, but where property or use rights are insecure, they are underdeveloped. Smallholder farmers and indigenous groups should be protected from land grabbing. Internal acquisition pressures coming from urban groups and well-connected farmers are as much of a problem as external demand for land. For large land investments, assessments, guidelines and codes of conduct have been developed and need to be promoted to guide governments and investors – and then enforced. Recent progress in land administration and documentation of tenure rights must be expanded and sustained. Underlying all successful programmes have been major investments in the infrastructure of land registration, including cadastral surveys, computerized records, training in legal rights and resolution of land disputes. Even though culture and customary law still undermines land rights of women, successful programmes have greatly strengthened their rights and must be continued and expanded.

#### **Institutional innovations**

*Essential rural financial system development:* By lubricating, deepening and expanding economic activity, finance and financial services contribute to rural transformation. On the supply side, it is necessary to develop the basic backbone of a modern financial system: key organizations with a wide range of financial services (banks, non-bank financial institutions and insurers) and financial infrastructure (credit reference databases and payments and settlement systems). On the demand side, requirements are increased financial literacy, secure land and other

property rights, and more accessible judicial processes.

### **Investments**

*Essential agricultural R&D:* With official development assistance diminishing and unlikely to return to previous levels, greater volumes of domestic resources must be mobilized to finance agricultural R&D, at least to the widely accepted target of 1 per cent of GDP. Such investments must be backed by rigorous priority setting. The types of technologies that are most suitable for supporting inclusive structural and rural transformation processes depend on context-specific conditions, implying the need for continued efforts to develop new varieties. But a large body of proven improved technologies is grossly underutilized, in part due to microeconomic conditions in poor areas that militate against their adoption and diffusion. Adaptive research to understand technical, institutional and policy factors that ease key constraints must be prioritized. Special attention should be paid to novel “management platforms” that bundle together soil improvement, proven crop and livestock varieties, intensified input use and farmer collective action, and are revealing their potential for increased incomes, improved sustainability of farming systems, and adaptation to a range of farming systems and agroecologies.

*Essential rural infrastructure:* Significant investment is required to expand basic rural infrastructure in the form of roads and footpaths, bridges, schools and other buildings, irrigation and drainage, water supply and sanitation, energy, and telecommunications. These investments catalyse and enhance the impacts of improved access to other assets and services (such as land and finance), enhance rural-urban linkages and boost commercial activity within rural areas

*Essential capacity development of farmer organizations and other rural collectives:* The same set of investments experienced by Amplifiers applies here.

*Public works and employment guarantee schemes:* Investments in initiatives that engage participants in manual, labour-oriented

activities, such as building or rehabilitating community assets and public infrastructure, can support consumption and avoid distress sales of land and other assets, thereby boosting purchasing power and enhancing resilience in the process. Selected assets should address immediate problems of food security, employment and high priority needs such as access to planting materials and stabilizing environmental degradation.

### **Conclusion**

While the private sector and many non-state actors are increasingly engaged in rural development, in all contexts national and local governments remain key actors: as investors themselves, as creators of conditions that draw in the resources from private and philanthropic sources that drive and sustain change, and, crucially, as protectors of the public interest. A major dimension of that public interest is the inclusivity of unfolding transformations.

The core message of this report is that fostering inclusive rural transformation is about making the right strategic choices in different contexts. That is part art, part science. The art lies in generating and sustaining political momentum for prioritizing agriculture, rural areas and agrifood systems as structural transformation unfolds, deepening and expanding the socio-economic mainstream. The science centres on the design and implementation of policies, institutions and investments that draw ever-increasing numbers of rural people into that mainstream.

Neither is straightforward. Problems of performance and equity within agriculture, rural areas and agrifood systems are recurring, deep, and widespread. Truly inclusive rural transformations must not only boost incomes broadly, they must reduce the non-monetary deprivations of rural people and enhance both their access to services and resources, and their political voice and participation. This report shows that when these challenges are met, rural areas can play decisive roles in social and economic development and can be inclusively transformed in the process. The link to the 2030 Agenda for Sustainable Development is

clear, powerful and affirmative. Rural people in inclusively transforming rural areas will be key actors in sustainable development solutions.

Timmer (2014) notes the importance of not overinterpreting the implications of structural transformation for rural areas. The suggestion that rapid exit from rural areas to urban areas – domestic or foreign – is a reasonable development strategy is misguided at best. IFAD has never adhered to that view. This report adds to that conviction, for it shows very clearly that the right selection of policies, institutions and investments can reward all rural lives today, tomorrow and long into the future.

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# Introduction



In 2015, as the world reflected on achievements against targets in the Millennium Development Goals (MDGs) and crafted the 2030 Agenda for Sustainable Development, the dominant narrative was sober yet positive and upbeat, and rightly so. In 1990, some 44 per cent of the population in developing regions lived on less than US\$1.90 a day. This rate had dropped to 14.9 per cent by 2012, reducing the number of people living in extreme poverty by 1.06 billion (World Bank 2016). Progress on inequality was not as strong. As measured by the Gini coefficient, inequality in low- and middle-income countries increased from 38.5 in the early 1990s to 41.5 in the late 2000s (UNDP 2013). Nevertheless, between 1990 and 1992 and 2010 and 2012, the proportion of undernourished people in developing countries declined from 23.3 per cent to 12.9 per cent, and from 1.01 billion people to 795 million in absolute terms (FAO et al. 2015).

The declines in poverty and undernutrition were sharpest in Asia, with China alone reducing its rural poverty rate from 66.6 per cent in 1990 to 6.5 per cent in 2012 (World Bank 2015). Gains in other regions of the world were less dramatic, but also important. But there is no escaping the fact that in most regions poverty rates in rural areas stood well above those in urban areas. With the exception of Asia and the Pacific and, to a lesser extent, Latin America and the Caribbean, the gap did not decline significantly over the period.

Rural development is one of the most reliable and potent forces for overcoming these trends and achieving broad-based social and economic development. The evidence is strong and clear that sustained investment to enhance productivity in agriculture and the broader rural economy has a large impact on both growth and poverty reduction (Fan 2008; Fan et al. 1999, 2002). The impact pathways are both direct, through increased incomes and enhanced food and nutrition security, and indirect, through improved education, healthcare and other important services.

This report examines rural development through the prism of the transformation of rural areas and the wider economy – rural

transformation and structural transformation. By embedding rural development within rural transformation, and that within structural transformation, developments in urban and rural areas can be viewed together and seen to be interconnected. The implications for rural development and rural transformation of deep and rapid demand-side changes in global and national factor markets and agrifood value chains can be examined. Drivers and determinants of pathways and levels of structural and rural transformation can be explored, with the aim of building an understanding of how they shape both opportunities and constraints to rural development and its inclusiveness.

The core strategic challenge facing governments, development agencies and other stakeholders is how to draw ever-increasing numbers of the poor and marginalized in rural areas into the mainstream.

### Focus and analytical framework

With the aim of speaking to these strategic challenges, shedding light on the strategic opportunities, and thereby articulating and clarifying the strategic choices facing decision makers in the coming years, the following three questions shape the report's overall narrative and content:

1. What are the different pathways (or patterns) of structural and rural transformation across the developing world?
2. What are the consequences of transformation for poverty reduction and inclusion?
3. What can be done by governments, the private sector, civil society and development partners, including IFAD, to stimulate and support inclusive rural transformation in different contexts?

### Propositions

In addressing these questions, the primary proposition of the report is that historical legacies and policy and investment choices shape the pathways, speeds and results of structural and rural transformations, leading to sharply different transformation and inclusion outcomes across countries. A supplementary

proposition is that a rural development strategy to promote inclusive rural transformation must recognize and accommodate these outcomes, strengthening inclusion-enhancing forces and blunting exclusion-promoting ones. These two propositions shape the design of the report's analytical framework, the selection and interpretation of evidence gathered in applying the framework, and the development of implications for policy reform, institutional innovation and investment.

### Analytical framework

Figure N illustrates the analytical framework guiding the report. As signalled by the propositions, the point of departure is the set of initial conditions that exist in a country: endowments or factors of production, human capital, traditional identities and historic legacies. These initial conditions affect the range and nature of choices available to governments and other key actors with respect to institutions, policies and investments aiming to affect the pace and nature of structural and rural transformation, which, in turn, condition and reflect each other.

These influences are mediated through interventions that, directly or indirectly, affect the level and rate of employment, access and rights to land and natural resources, availability of, and access to, rural finance, the depth and complexity of agrifood markets and value chains and agricultural technology innovation, empowerment and gender equality, and social protection. Several external factors shape the contexts within which these choices are made. Notable among these factors are political and social fragility, demographic conditions, urbanization, conditions of trade in international markets and, more recently, climate change.

Outcomes of structural and rural transformation include a reduction in rural poverty, improved food and nutrition security, and increased resilience to shocks and overall fragility, and more social and political inclusion for rural people. To be truly inclusive, these outcomes have to create lasting effects in the lives of rural people and thus be sustainable over

the long run. The extent to which this occurs, however, is predicated on the pace and quality of the underlying transformation.

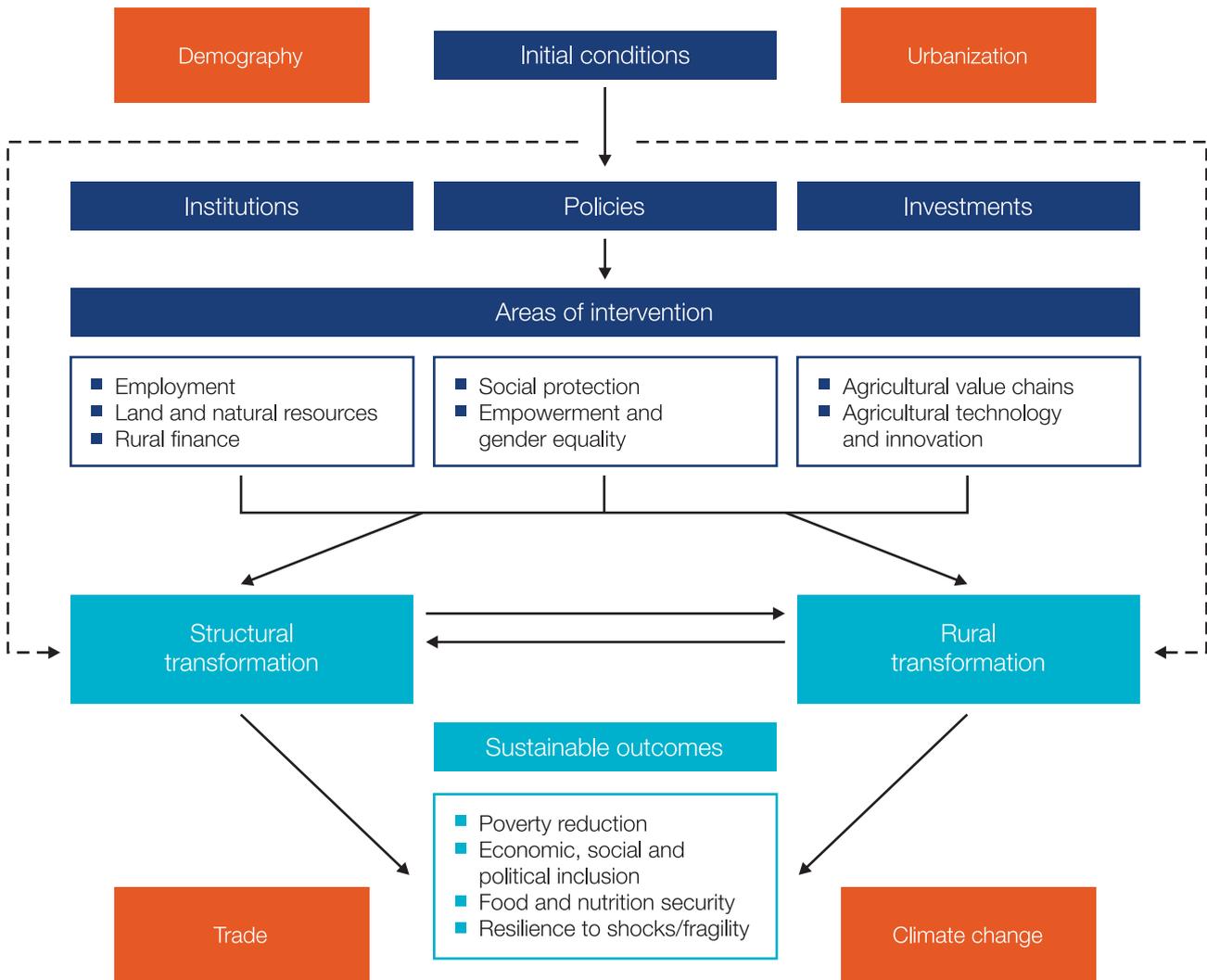
The analytical framework is employed to examine these issues from two perspectives: (1) a regional perspective based in part on a cross-cutting empirical analysis of levels and speeds of transformation and inclusion for a set of countries selected from all regions of the developing world, and also by examining how regional developments and country-specific choices featured in the framework have impacted transformation pathways and outcomes, and (2) a thematic perspective based on an analysis of the key policy action areas, key outcome areas, and cross-cutting issues signalled by the analytical framework.

### The regional perspective

The empirical analysis (detailed in the Overview and synthesis) reveals several regularities regarding structural transformation, rural transformation and rural inclusion (as captured by rural poverty reduction). Relatively more structurally transformed countries are also more rurally transformed. The higher the speed of structural transformation, the faster the pace of rural poverty reduction. Similarly, the higher the speed of rural transformation, the faster the pace of rural poverty reduction. Where structural transformation is relatively slow, fast rural transformation coincides with fast rural poverty reduction. Both rural transformation and rural inclusion would therefore appear to be most dynamic in the context of fast structural transformation, which, in turn, and especially where it is proceeding relatively slowly, is most vibrant alongside rapid rural transformation and rapid rural inclusion.

Rapid reduction in rural poverty in the absence of rapid structural and/or rural transformation is rare. However, several fast-transforming countries have not done so inclusively. Structural and rural transformations may be necessary for rural inclusion, but they are not sufficient. To achieve inclusion, not only must countries transform quickly, they must also take specific actions to reduce rural poverty and enhance inclusion more broadly.

FIGURE N Analytical framework



Source: Authors.

Based on these findings, the report hypothesizes that the inclusiveness of structural and rural transformation is an empirical issue whereby the path and speed of transformation and inclusion are linked to initial conditions, institutional factors, policy and investment. Two specific hypotheses are examined: (1) No country has reduced rural poverty significantly in the absence of rapid structural and/or rural transformation. This statement should be confirmed by the data, with few exceptions. (2) Countries that have gone through a significant structural and/or rural transformation have reduced rural poverty – and enhanced inclusion – significantly. This statement should be qualified by the data, with some countries having transformed inclusively, but several

having transformed non-inclusively. Four regional chapters, as now summarized, consider the extent to which these hypotheses hold in different parts of the world, further examining how initial conditions, institutional factors, policy and investment choices have manifested themselves in each region, and how – or if – they have affected the speed and inclusiveness of rural transformation.

**Latin America and the Caribbean**

Most countries in the LAC region had already reached relatively high levels of structural and rural transformation by the start of the period of analysis, with an urbanization rate of over 75 per cent. Growth and poverty reduction over the period were strong overall. Countries

underwent a vast rural transformation in the second half of the twentieth century, with four features in common: spatial integration as functional rural-urban territories formed where the majority of the rural population lives, diversification of rural economies from agriculture, transformation of agrifood systems and value chains under the dominance of corporations, and a blurring of the cultural distance between rural and urban youth owing to rural roads and communications technologies. The old rural and fundamentally agrarian societies have been replaced by new types of rural societies, in which agriculture is still important but no longer predominant.

Findings are consistent with the main hypotheses, namely that all countries (but one) that have reduced rural poverty faster than the region as a whole have also experienced rapid structural or rural transformation, or both, but that not all countries that experienced rapid transformation cut rural poverty rapidly. Almost every country with rapid rural poverty reduction also narrowed rural income inequality faster than the regional average.

As in APR, therefore, agricultural productivity growth and strengthening of the agriculture-based rural non-farm economy will be important to enhanced inclusion. In addition to pro-smallholder productivity-enhancing policies and investments (such as infrastructure investment in lagging areas, land reform for excluded people, focused agricultural R&D and improved access to technology and finance), social protection programmes have been and will remain central to rural poverty reduction in LAC.

Training to allow people to have access to more productive jobs and support for collective action and empowerment were critical to inclusion, and will remain so. In countries with sharp subnational differences in agro-climatic, socio-economic and structural conditions, territorial development strategies may be appropriate. A major emphasis should be to support the expansion of high-quality public goods, which will also demand a major effort to coordinate agricultural (and smallholder) policies and programmes with those related to public services, infrastructure and broader

economic development – something that probably can only be done on the basis of regional and territorial development approaches.

### **Asia and the Pacific**

In APR, where growth was rapid and poverty reduction significant over the period of analysis, the rural sector has been gradually transforming, moving from largely cereal- or grain-based production to higher-value production, such as livestock and fisheries. Driven mainly by rising income and urbanization, food-consumption patterns have been changing, shifting from starchy staples and rice towards fruit and vegetables, livestock and dairy products, fish, sugar and oils. Findings are strongly consistent with the two hypotheses, and more so than for any other region. Recent transformations of economies and rural societies in the region have coincided with the deepest and fastest structural transformation in developing countries, cutting sharply into rural poverty. The data do not reveal any country that transformed quite quickly that did not also cut poverty relatively fast. The data confirm that countries that transformed relatively slowly made significant progress against poverty, but did so more slowly than the regional average.

In countries registering fairly high rates of transformation and poverty reduction, productivity growth on smallholder farms and rapid growth of the rural non-farm economy were decisive. While labour-intensive manufacturing is a source of inclusive employment growth in the region, agricultural productivity growth and the agriculture-based rural non-farm economy remain central to structural and rural transformation that draws the rural poor into the mainstream.

Inclusion-enhancing policies and investments included infrastructure investment in lagging areas, land reform for excluded people, demand-driven agricultural R&D and enhanced smallholder access to technology and finance. Especially important were coherence and appropriate sequencing of institutional reforms, policies and investments.

Labour-intensive manufacturing will remain an important source of inclusive employment

growth in many countries in the region, but continued agricultural productivity growth and strengthening of the agriculture-based rural non-farm economy will be central to the structural and rural transformation that draws the rural poor into the mainstream.

### **Sub-Saharan Africa**

In SSA, the dominant narrative of a fast-transforming continent showing mixed but generally positive performance is valid, but must be tempered by recognition of challenging trends that threaten continued progress. Agriculture shows healthy growth in terms of both output and productivity, but the commodity mix has not been diversified much. The picture that emerges is of an expanding agricultural sector, but one with weak fundamentals that are preventing a broad-based reduction in poverty and inequality. Nevertheless, Africa's rural areas are transforming deeply and rapidly. Findings with respect to the hypotheses are that of the 23 countries out of 28 in the region that registered quite fast structural and rural transformation over the period of analysis, only 15 managed to cut poverty quickly. The burden of high population growth rates, poor infrastructure, and policy and institutional gaps is heavy. Notably, however, nine relatively slow transformers were able to reduce poverty at quite fast rates. These cases confirm that the demographic and political challenges facing African countries are not insurmountable. They also show that the direction and quality of public investment is central to inclusive pathways.

Because of the continued "youth bulge" in the labour force across the continent, inclusive transformation must focus on youth. Despite rapid urbanization, the waves of young people reaching adulthood and seeking to establish families and livelihoods will be predominantly rural for at least two more decades. While speeds and patterns of structural and rural transformation differ across the continent, similarities in factor proportions and competitive advantage imply that inclusive transformation springs mainly from agriculture

and the rural non-farm sector. Both of these require sustained productivity-enhancing investment to reach their full potential.

Agriculture is the primary employer, and will be called on to absorb new entrants to the labour force. Increased agricultural productivity and improvement in agriculture-related rural livelihoods will continue to be the primary avenue to achieve such inclusion in the near term. Enhanced agricultural growth will also drive growth in the rural non-farm sector. Targeted investment in infrastructure, skill development, and increased access to land and finance are critical. Rapid urbanization and fast changing food consumption patterns point to continued demand-driven changes in agrifood systems as high-potential sources of employment and income growth in rural areas.

### **Near East, North Africa, Europe and Central Asia**

In the NEN region, despite high diversity in their geography, history, natural resource endowments and socio-political contexts, countries have in common deep and far-reaching political and economic transitions that are strongly determining their structural and rural transformations. In particular, many countries are grappling with the aftermath of two major events separated by nearly two decades: the far-reaching remodelling of the Commonwealth of Independent States (CIS) triggered by the demise of the Soviet Union in the early 1990s, and the current reshaping of NEN political and socio-economic landscapes unleashed by the Arab "revolutions" that began in 2011. Factor endowments, particularly natural resource endowments such as water, farmland and minerals, are important drivers of structural and rural transformations. In most countries in the NEN region, dependence on oil revenue and its cyclical commodity effects translate into pronounced volatility in economic growth, which is particularly detrimental because stable growth is better than volatile growth at tackling poverty.

Findings indicate that the urban-rural poverty gap is a strong indicator of inclusion (the wider the gap, the lower the inclusiveness). Countries

that have succeeded in narrowing the gap typically register higher agricultural value added per worker. A combination of above-average structural transformation with above-average rural transformation results in relatively fast rural poverty reduction and a narrower urban-rural poverty gap. Conversely, countries featuring a combination of below-average structural and rural transformations achieve slow rural poverty reduction and see a wider urban-rural poverty gap.

Thus, no country has achieved an inclusive development pattern characterized by relatively fast overall poverty reduction and a concomitant narrowing of the urban-rural poverty gap without paying careful attention to how rural transformation interacts with the wider structural transformation. Key interventions to promote inclusive transformation patterns include boosting agricultural productivity and shifting to high-value agrifood chains, building resilience to anthropogenic and climate-induced shocks, empowering women, investing in infrastructure, and expanding access to farmland and other productive assets, especially for historically excluded populations.

### The thematic perspective

At issue in this report are drivers of inclusiveness and policies and investments that can enhance inclusiveness. The logic of inclusive rural transformation as captured in the analytical framework points to a set of six critical areas for policy action and investment: employment, markets and value chains, rural finance, agricultural technology innovation, land and natural resources, and collective action. Six chapters are devoted to these issues.

The report also includes eight brief thematic “Spotlights.” Two spotlights focus on two socio-economic outcomes that are powerful signals of the degree of inclusion: food and nutrition security and resilience to shocks. Given the increasing importance of civil strife, population dislocation, and natural and anthropogenic disasters, prospects for inclusive transformation in fragile situations are also considered in a spotlight. Also examined in spotlights are two

issues that cut across the policy actions and outcome areas set out above: gender equality and environmental sustainability. Not only do both of these issues have strong policy content in themselves, they are also powerful reflections and outcomes of inclusion. A sixth spotlight is devoted to the special circumstances facing indigenous peoples under rural transformation, a seventh to social protection and an eighth and final one to institutions and governance. Outlined below are key findings of the thematic chapters and spotlights.

### Employment

Overall employment trends – globally and nationally – will strongly influence the types and qualities of employment opportunities open to rural populations in the future. The better the overall employment prospects, the greater the chances that rural people will be able to improve their lives via employment and higher wages in rural and urban areas. The converse is true, of course – poor employment trends will have major implications for rural and agricultural development strategies.

Patterns of transformation seen in the past, where low-skilled labour left agriculture for low-skilled but higher-paying industrial jobs, will be hard to replicate. Manufacturing will not be available to many countries as an avenue for significant employment growth. The role of the state is thus primary, entailing a strengthening of the fundamental capabilities of the populace, expanding access to new technology, addressing gender- and culture-based inequities, providing a broad cushion of benefits, providing public goods, and strengthening the business environment through policy and infrastructural investment, which rural areas especially need.

### Markets and value chains

This chapter documents the drivers and implications of radical but predictable changes underway in the industrial organization of food markets across the globe. The drivers are urbanization, changes in food demand (dietary change itself driven by rises in income), the diversification of rural economies, and institutional changes that modify the set of

actors in the agrifood system and the relations (including power relations) between them.

The overall configuration of agrifood supply chains has changed from local and fragmented to geographically far longer chains. The role and importance of traditional village traders have declined, while those of urban wholesale markets and specialized modern wholesale and logistics have risen. Concentration (with a rise in scale), multi-nationalization and technology change (capital:labour ratio increase) of food retailing, processing and wholesale logistics have also increased. The expansion of these segments has provided employment opportunities to the poor as workers in food processing and wholesale/logistics firms.

Private standards of quality and safety have emerged, as has greater contract use. New opportunities are opening up for smallholder farmers, small traders and rural processors and other rural agrifood SMEs. But barriers to entry remain a significant problem.

The best remedial strategies are broad policy and public investments to enhance collective and individual assets and to improve capabilities for participating and prospering in the changing domestic markets for major staples, livestock and horticulture – the mainstream of market change.

### **Rural finance**

Over the past few decades, with the emergence and spread of innovative institutions and models, financial services have expanded around the world, with investments in rural financial systems being increasingly profit driven. Several investment funds now target agriculture. Agricultural value-chain finance offers new mechanisms that respond more closely to the investment needs of smallholder farmers and rural SMEs.

Remittances have become increasingly prominent sources of finance for rural households, and are especially important for the most vulnerable. But access is not yet broad-based, excluding the vast majority of poor, leaving them with unreliable ways to save money, protect and build assets, transfer and receive money and obtain credit.

The implications of expanding their access to these services for the inclusiveness of rural transformation are profound. Remedies include changes to regulations that reduce the costs of formal lending and financial service delivery to the poor, alongside support for financial literacy. Informal channels, too, fill important gaps that formal systems cannot address, and their roles should be recognized as valuable for financial inclusion.

### **Agricultural technology innovation**

Increases in agricultural productivity can drive rural and structural transformation by helping farmers to produce more and of greater value, as illustrated by Asia's Green Revolution. The types of technologies most suitable to support inclusive transformation depend on context-specific conditions, often changing as the transformation proceeds.

Smallholder farmers must be able to adopt and adapt more productive technologies. For that, they must have the means to overcome a range of impediments such as inadequate education and knowledge of the new technologies, as well as constraints on access to financing and markets. The remedies include innovative approaches to technology development and dissemination, improved governance, a better institutional environment for agricultural R&D, and enhanced access to agricultural finance, inputs, advisory services and output markets.

### **Land and natural resources**

Land, forest and water resources are crucial to transformation processes and to the livelihoods of rural people, especially smallholder farmers and ethnic minorities. Historically, depriving people of access to these resources has led to the mass exclusion of smallholders, indigenous groups and ethnic minorities – and for the latter two groups, often pushing them near to extinction – creating many of today's most vulnerable and marginalized populations. Risks of exclusion remain high because structural and rural transformations demand more and more of all three resources. Collective action is vital in

inclusion, as are institutions that can manage the resources at local, meso and micro level.

Remedies include institutions and policy measures that foster proper management of these resources while preventing further threats to rights-holders. It is critical to clarify and enforce property rights, especially for women, by enhancing transparency in managing and allocating the resources, ensuring participation in policy processes, enabling greater inclusion of historically deprived groups and reducing risks of exclusion of other groups.

### **Collective action and empowerment**

Even as structural and rural transformation opens up new opportunities for rural communities, it also generates major risks that smallholders, rural SMEs and other marginalized groups in rural areas may be left behind, excluded from benefits or rendered worse off in absolute terms. Such transformation can weaken the legitimacy of local norms and institutions and lower the potential of collective action as a force for inclusion.

Historically, rural elites all over the world have primarily used collective action to extract tribute or labour services from peasants. Even today, the capture of benefits of policies and programs by rural elites is still very widespread. Still, collective action organizations of small farmers and disadvantaged groups, while fraught with profound difficulties in largely uncharted waters, can enhance the scope for inclusive rural transformation. Countless farmer organizations and other rural collective bodies are already in place, often as entry points for multiple development initiatives. Building robust organizations that can empower rural communities to benefit from changes brought on by rural transformation can only be gradual – but is critical. Support must be consistent and sustained. Traditional norms and institutions, based on local culture and authorities, may serve to exclude women and other disadvantaged groups from participating on an equal basis in economic, social and political terms. Several trends and conditions associated with structural and rural transformation challenge the legitimacy of local norms and traditional

authorities and institutions and, therefore, may weaken both negative and positive forms of collective institutions. New forms of inclusive collective organizations need to take their place and tackle both existing and new challenges.

Policy and investment to enhance the delivery and inclusion-enhancing capacities of these organizations must focus on four areas: governance, operations, financing, and strategy and policy engagement. Government and the private sector have complementary roles for enabling them to deal with their many constraints. These roles must be identified, to provide incentives and enabling conditions for rural collectives to form, operate effectively and contribute to shaping rural transformation pathways in the interests of marginalized groups and individuals.

### **Social protection**

When inclusion-fostering policies and programmes are not enough to remedy exclusion, social protection – general or targeted – becomes necessary. Social protection regimes featuring safety nets and direct interventions to address vulnerability can be key complements to growth strategies. Where well targeted and run, they can ease access to investments and supply-side interventions, enhance resilience, promote equitable distribution of economic and social benefits from growth, and draw vulnerable areas and groups into mainstream growth processes.

When “preventive” and “protective” measures are supplemented by “promotional” investments in the productive capacities of rural populations, social protection can provide pillars of inclusive transformation. However, these measures must be supported to overcome challenges related to targeting in rural areas and long-term financial sustainability.

### **Institutions and governance**

Institutions are important in catalysing and sustaining inclusive transformation, as for example through setting common rules and creating incentives. They can open up opportunities for poor people and their organizations to seize economic, political and social chances, but can also increase

the challenges they face. Under different conditions of governance, income and capacity, similar institutional arrangements can lead to vastly different outcomes. Thus, asking which institutional arrangements matter most for inclusive rural transformation would be misleading. There is no unique set of formal and informal rules that can foster economic growth and social inclusion. Initial conditions – natural endowments, human capital, traditional identities and historical legacies – and governance affect the range and nature of choices open to governments and other key actors.

Macro institutional reforms may not be needed to boost sustainable and inclusive transformation but what are definitely needed are political and economic institutional principles that release the binding constraints on the rural economy, help strengthen state capacity to implement programmes and enforce decisions, ensure property rights (so that more investment goes into agriculture and the rural sector), and promote the participation of rural people, making them active actors in the transformation processes.

### **Resilience to shocks**

While structural and rural transformation does not “cause” shocks, it is a powerful disruptive force that fuels changes in rural economies that can potentially affect households’ and communities’ capacities to cope with the myriad hazards, vulnerabilities and risks they face. The forces underlying the transformation – especially commercialization and specialization – can catalyse and reward acquisition and use of new kinds of assets and capabilities that yield new livelihood options and new organizational forms and arrangements. Together these can confer greater resilience to shocks and boost capacity to recover from them. Yet those same forces can breed new hazards, vulnerabilities and risks that may combine to blunt the capacity to withstand and recover from shocks.

On balance, however, the forces underlying structural and rural transformation generate impacts that do more to enhance households’ and communities’ capacities to cope with and recover from shocks than the converse. But as

the overall aim is a transformation that features ever greater inclusion, there is scope for policy to enhance measures to improve capacity to manage risk: promoting efficient and effective disaster preparedness and response, enhancing risk transfer, and encouraging prudent risk-taking and livelihood diversification.

### **Fragile situations**

Fragility is a key driver of socio-economic change and is among the greatest development challenges. There were 47 fragile states and economies in 2013 and 50 in 2015, according to the OECD. In 2015, these states were home to 1.4 billion people – 20 per cent of the world’s population, with 43 per cent of those in absolute poverty. Over half of these states were in Africa. Although fragility is a complex phenomenon that varies over time and space, its impacts on structural and rural transformation are specific to the context, population and period.

Fragility may impede the efficient flow of resources to industrial and urban-based economic activities, forestalling higher productivity and incomes. It may also exacerbate rent-seeking behaviour that works against equitable and inclusive development.

Situations of fragility and violent conflict have some common elements such as poverty, inequality and vulnerability. They typically lack good governance and strong and effective policies, have limited numbers of highly educated and skilled workers, suffer from poor infrastructure and services, and sometimes have limited civil society and private sector activity. International support may be required to meet people’s basic needs, including security, and to ensure access to basic services according to humanitarian principles.

### **Gender equality**

Structural and rural transformations may have very different impacts on women and men. This is especially apparent in migration, where women may be disadvantaged because of the importance of childcare. For similar reasons, opportunities to participate in the rural non-farm sector also differ by gender. The same is true of access to land and a range of

productive resources. Women often face major barriers to entering the high-value agrifood supply chains that take on greater importance as transformation evolves. Women also face major hurdles in rural labour markets, which tend to favour educated young men.

Measures to overcome these constraints include direct interventions to enhance skills, build assets and improve access to key resources, alongside broader policy and institutional reforms to address sociocultural dimensions of gender bias and inequality.

### **Food and nutrition security**

Inclusive structural and rural transformation requires expanded food and nutrition security. Such transformation has been accompanied by wide and deep improvements in food and nutrition security, with food availability, access and utilization all registering steep gains.

But even in some places where the transformation has been rapid and sustained, incomes have increased, and food supply has been relatively easy with comparatively low and stable prices, food and nutrition insecurity has persisted, with undernutrition, overnutrition and micronutrient deficiencies coexisting. Different forms of food and nutrition insecurity thus serve as powerful signals of incomplete, uneven, unbalanced and non-inclusive transformation.

Policy on food and nutrition security – serving as a platform for inclusive and sustained structural and rural transformation – centres on nutrition-specific and nutrition-sensitive measures and investments that render fast-changing food systems better able to deliver and support healthy and nutritious diets for all consumers, especially pregnant women and young children, for whom malnutrition has long-lasting consequences. Also key are policy measures to counter the effects of forces that militate against expanded participation by small farmers and traders in commercial food production and trade.

### **Environmental sustainability**

In the long run, rising incomes associated with transformation enhance environmental consciousness and lead to environmental

improvements, albeit at different times and varying speeds depending on the issue at hand and other conditions. In the shorter run, however, transformation is likely to lead to environmental stresses. Spotlight 7 argues that transformation cannot be considered successful unless progress is being made with respect to environmental sustainability. During their period of classic transformation, OECD countries experienced many severe problems of urban sanitation, deforestation, loss of biodiversity, and air and water pollution. Sanitation improved during the late nineteenth and early twentieth centuries, but other challenges were not systematically addressed until the 1970s and 1980s. Since then environmental laws and programmes have led to major improvements.

Developing countries have also initiated programmes to safeguard the environment. Over the last decade, India and China have started to remedy the enormous congestion and pollution problems associated with their rapid economic growth. Yet many rural areas, especially in Africa, are experiencing serious soil degradation, and while progress has been made, especially on setting aside protected areas, deforestation and loss of biodiversity continue. To manage these issues, there is a need for major policy and institutional reforms and physical, institutional and capacity-development investments.

### **Indigenous peoples**

The world has more than 370 million self-identified indigenous peoples in some 70 countries. Latin America has more than 400 groups, each with a distinct language and culture. The biggest concentration is in Asia and the Pacific – an estimated 70 per cent.

They have rich and ancient cultures and regard their social, economic, environmental and spiritual systems as interdependent. They make valuable contributions to the world's heritage via their traditional knowledge and their understanding of ecosystem management. But among those who have been traditionally subjected to social, political and economic exclusion, indigenous peoples continue to face discrimination based on their identities

and disadvantages that limit (or even prevent) their access to social, economic and political opportunities and resources. Their socio-economic and human development conditions are significantly worse than those of other population groups. Even when they have made social and political progress, rural transformation may represent a threat to their traditional land-use practices or to their cultural and linguistic diversity.

### Organization of the report

The remainder of the report is in two parts. Part One comprises the regional analysis. Chapters 1–4 address rural transformation in LAC, APR, SSA (combining ESA and WCA) and NEN. Each regional chapter presents detailed descriptions of the pace and nature of structural and rural transformation, and tests the two hypotheses using available data. This part also has four thematic spotlights on social protection, institutions and governance, resilience to shocks and fragile situations.

Part Two is devoted to the thematic analysis. Chapters 5–10 address the implications for inclusive rural transformation of trends and developments in employment, markets and value chains, rural finance, agricultural technology innovation, land and natural resources, and collective action and empowerment. In each case, potential opportunities for, and threats to, inclusive

rural transformation are identified, along with implications for policy and investment to seize the former and mitigate the latter. Four thematic spotlights are also presented in this part, on gender equality, food and nutrition security, environmental sustainability and indigenous peoples.

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# **PART ONE** Regional analysis

## CHAPTER 1

# Structural and rural transformation in Latin America and the Caribbean



## Summary

This chapter looks at the structural and rural transformations in Latin America and the Caribbean (LAC) during the first decade of the twenty-first century, focusing on the Spanish- and Portuguese-speaking countries,<sup>10</sup> which account for 94 per cent of the rural population of LAC.

These countries underwent a vast rural transformation in the second half of the twentieth century, but most had four features in common: spatial integration as functional rural-urban territories formed<sup>11</sup> where the majority of the rural population lives, diversification of rural economies from agriculture, transformation of agrifood systems and value chains under the dominance of corporations, and a blurring of the cultural distance between rural and urban youth owing to rural roads and communications technologies (Berdegué et al. 2014).

These factors have influenced each other in multiple ways, and are both causes and consequences of the structural and rural shifts. The old rural and fundamentally agrarian societies have been replaced by new types of rural societies, in which agriculture is still important but no longer predominant.

By focusing on roughly the first decade of this century, we discuss the *advanced* stages of the two transformations of a still-developing region. Here, rural inequality remains extremely high, rural societies have already undergone tremendous change, and family farming has survived the shock of very rapid – and in some cases radical – liberalization, and yet keeps on contributing to the rural economy and to society at large.

Our findings are consistent with the main hypotheses of this report, namely that all countries (except Bolivia) that have reduced rural poverty faster than the region as a whole have also experienced rapid structural or rural transformation, or both, but that not all countries that undergo a transformation cut rural poverty rapidly. Every country with rapid rural poverty reduction has also narrowed rural income inequality faster than the regional average, except Chile.

These findings can be interpreted to suggest that it is very difficult to reduce rural poverty

quickly without rapid structural change in societies, but that such transformation by itself does not *guarantee* fast poverty reduction. Our findings do not support the oft-heard claim that the recent transformations of rural societies are anti-rural poor. Nor do they support the view that, if we transform the rural and national economies (and add social protection), poverty will automatically fall. What our analysis shows, instead, is that transformation and smart rural development policies are both needed if rapid rural poverty reduction is a national goal.

However, only three countries managed to do better than the regional average in all three dimensions of our analysis (structural and rural transformations and social inclusion). Why are they not doing better, as are countries in other regions that are less advanced along the transformation curve? Three proximate factors appear to be at play: in most countries, agriculture has not increased its productivity fast enough, other sectors of the economy have not generated enough high-productivity jobs, and rural economic growth and social-inclusion processes remain highly concentrated in certain territories, resulting in low rural poverty elasticities of growth.

The analysis of this region over this period is useful from an international perspective for at least two reasons: first, LAC allows us to see how structural changes in societies, at large, and in rural societies, in particular, can coexist with social exclusion, and that deep and rapid economic change does not always bring about development for all. Second, LAC can mirror the transitions in other developing regions, considering that over the past 30 years most of the LAC countries moved several steps up the scale towards becoming high-income and low rural poverty nations. As countries in other developing regions are undergoing the changes that LAC has already undergone, they may wish to review insights from LAC.

## Patterns of transformation

### Rural LAC in the late 1990s

At the start of the twenty-first century, Latin American rural societies were very different from those in the not too distant past. Around

2000, agriculture accounted for slightly more than 5 per cent of the region's economy, with a value of US\$100 billion. Thanks to productivity increases, agricultural value added in 2002 was 1.6 times higher than in 1980, and agricultural value added per worker was 2.2 times higher in 2002 than in 1980. These gains occurred even though agriculture as a share of regional GDP fell by 40 per cent over the period. Yet, in 2000, agricultural employment still accounted for 35 per cent of the regional total.<sup>12</sup>

In 1999, the region's rural poverty rate<sup>13</sup> stood at 64 per cent (based on national poverty lines) – or 77 million poor rural people – a step *backward* from the 60 per cent in 1980 (73 million rural poor), at the start of the neoliberal cycle in the region. Nor did the proportion of rural poor living in conditions of extreme poverty over the period improve, either.

Income inequality in 1999 was extremely high. That year, the labour income (including all forms of employment) of the richest decile of the rural population was a staggering 40 times that of the poorest rural decile, and the difference in total income (including government cash transfers and other social subsidies) was 18 times higher. The Gini coefficient of total rural income for the region as a whole in 1999 was 0.52. In Brazil and Bolivia (Plurinational State of), "leaders" in inequality at that time, it was 0.58 and 0.64, respectively.

By the late 1990s, the rural economy was very diversified and rural non-farm income (RNFI) was growing fast in the region, approaching half of total rural income (Haggblade et al. 2007): 39 per cent in Brazil, 41 per cent in Chile, 50 per cent in Colombia and Peru, and 55 per cent in Mexico – and 22 per cent, 41 per cent and 42 per cent in the more agrarian countries of Honduras, Ecuador, and Nicaragua, respectively (Reardon et al. 2001). In the late 1990s, RNFI accounted for the majority of the income of rural women in 10 of the 12 countries reported by Reardon et al. (2001). Yet non-farm activities employed 10-30 per cent of the rural economically active population, a lower participation than the share in income, showing that on average this tended to be far more productive than agricultural waged

labour or self-employment (Reardon et al. 2001).

The region had crossed the 50 per cent urbanization threshold in the early 1960s, and in 2000, 75 per cent of the population lived in urban centres. Rural areas housed 121 million people and one third of all the people living in poverty.<sup>14</sup> A large majority of rural people lived in territories characterized by close functional interactions between one or more small and medium-sized urban centres and numerous rural villages. Less than 10 per cent of the total rural population lived in places that were truly distant from a city (Barbier and Hochard 2014; Berdegue and Proctor 2014; Berdegue et al. 2015a).

A study commissioned by IFAD (Schneider and Cassol 2014) looked in depth at the family farm sector in eight countries,<sup>15</sup> and found that in spite of the rising importance of RNFI many of these households relied on agricultural production to generate a significant share of their income, from 27 per cent in Chile to 38 per cent in Colombia, 47 per cent in Mexico, 58 per cent in Brazil and 75 per cent in Nicaragua. There is no evidence that the family farming sector is in danger of disappearing any time soon. In fact, the large fraction of family farm households specializing in agricultural production suggests that many smallholders have adjusted to the severe post-1980 shocks of economic liberalization, dismantled public agricultural services and vastly increased market competition.

The number of family farms was estimated at around 15 million in the late 1990s and early 2000s (Berdegue and Fuentealba 2014). This group is extremely diverse (figure 1.1) but can be sorted into three main categories. About 10 million households have little land and other assets and very often are in unfavourable territories, whose livelihood strategy relies heavily on non-farm income. About 4 million households over 200 million ha, whose livelihoods depend predominantly on their farms, are integrated in agricultural markets, but face onerous challenges due to difficult territories and a lack of farm and household assets. And about 1 million family farms over about 100 million hectares of highly productive land, in more favourable territories, are quite

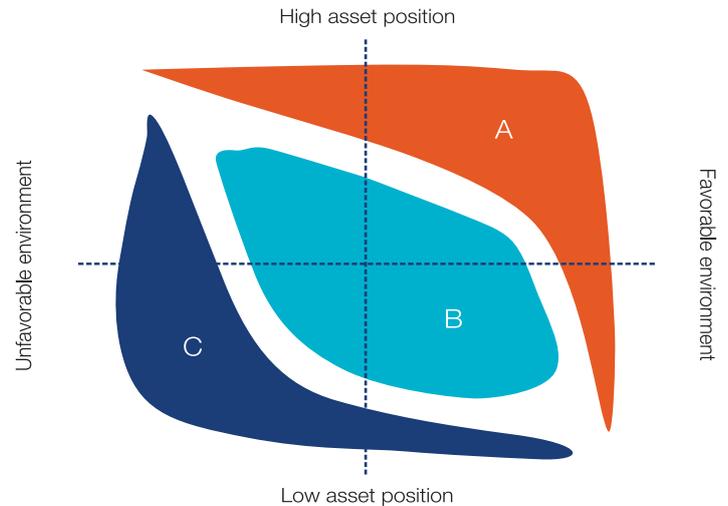
competitive even in demanding markets and value chains (Berdegué and Fuentealba 2014).

Over time, the large-farm sector has evolved from the hugely inefficient and unjust *hacienda* system to domination by corporations in most countries.<sup>16</sup> Estimates of the size or economic importance of this corporate sector, which includes modern agrifood manufacturing and at least some specialized services, are lacking, but several points are not in doubt: the number of corporate farms is small, in some countries the sector is an important employer, and it is responsible for the largest share of agricultural GDP<sup>17</sup> and almost all commercial agrifood processing. Even in countries where corporate agriculture or large-scale farms (or both) are very important, such as Brazil, the well-known dualist structure of Latin America (where a few large farms with landless hired labourers coexist with many smallholder farmers) remains a prominent feature of the countryside (box 1.1).

Brazil has recognized this dualism to such an extent that it has two agricultural ministries. The Ministry of Agriculture, Livestock and Food Supply is responsible for policies and regulations related to commercial agriculture and agribusinesses. The Ministry of Agrarian Development (MDA) is responsible for family farming and rural development. In 2015, the Ministry of Agriculture's budget was twice as large as that of the MDA. The MDA budget per family farm in 2015 was about US\$412, and that of the Ministry of Agriculture per corporate farmer US\$4,347 (the two agricultural ministries were in place in Brazil at the time of writing; since then the institutional structure has been reformed). Of course, family farms also benefit from programmes and services under the Ministry of Agriculture, such as the agricultural research of EMBRAPA (Brazilian Agricultural Research Corporation), just as agribusinesses benefit from family farmers – trained and organized with the support of MDA – who supply them with raw materials.

By establishing these two ministries, Brazil has tried to deal with a crucial challenge affecting *all* Latin American countries with their dual agrarian systems: the extreme difficulty in designing and implementing policies that

FIGURE 1.1 Types of family farms according to asset endowment and context



Note: type A includes about 1 million family farms, type B about 4 million households, type C about 10 million households.  
Source: Berdegué and Escobar (2002).

meet the capabilities, needs and objectives of essentially distinct social and economic agents, even if they share the activity of agriculture. In highly unequal countries, like Brazil, budgets and politics tend to be allocated according to economic and political power rather than social need.

The Brazilian institutional solution to agrarian dualism also has to serve the top tier of the family farm sector – few in number but at least as productive as corporate farms. Politically and socially, it is vital that these farmers are firmly in the camp of the family farm sector. But their capabilities, economic objectives, and strategies differ from those of the large majority of poor family farmers, and are in many ways closer to those of the corporate farm sector.

#### Post-2000 changes in LAC as a whole

In the logic of structural transformation, agriculture should decrease its share in the economy, while manufacturing and services grow. Over 2000-2012 agriculture's share in the LAC economy did in fact decrease by 6 per cent, but some countries "re-agriculturalized" over the period, due in part to the commodities boom: El Salvador, Paraguay, Nicaragua and Uruguay.

### BOX 1.1 Agrarian dualism in Brazil

Brazil is a global agricultural powerhouse. In 2012, its primary agricultural GDP was worth US\$112.7 billion, or 5 per cent of GDP, and absorbed 17 per cent of the country's labour. Agriculture, through its input and output linkages, accounts for an additional 17 per cent of GDP and 18 per cent of labour. In total, the wider agricultural and food sector and its related industries are thus responsible for over one fifth (US\$496 billion) of Brazil's economy and over one third of its labour (OECD 2015). This also means that in Brazil many farms are integrated into value chains, and that the options available to each individual farmer are increasingly dependent on decisions taken elsewhere in the agrifood system.

About 84 per cent of the 5 million farms (covering 330 million ha) meet the conditions defined in the Family Farming Law for being part of that sector. They control 24 per cent of the land (Schneider and Cassol 2014), from which they generate about 34 per cent of the gross value of the country's agricultural production (Vierha Filho and dos Santos 2011). Only 5 per cent of the family farms produce 64 per cent of the gross value of production of the family farm sector (Fornazier and Vieira Filho 2012). This is a classic example of what is called Latin America's "dualist" agrarian structure, but should be better known as a tripartite agrarian structure:

- 16 per cent of the farms (corporate farms) control 76 per cent of the land and produce 66 per cent of sectoral gross value.
- 4 per cent of the farms (the most productive of the family farms) control about 5 per cent of the land and produce about 22 per cent of sectoral gross value.
- 80 per cent of the farms (the least productive and poorest of the family farms) control about 19 per cent of the land and produce only 12 per cent of the sectoral gross value.

Sources: OECD (2015); Schneider and Cassol (2014); Vierha Filho and dos Santos (2011); Fornazier and Vieira Filho (2012).

Many authors have shown that agricultural development has a direct poverty reduction impact (World Bank 2007; Timmer 2009). However, the World Bank (2007) also showed that the agricultural growth elasticity of poverty in LAC was very low, even though the region was experiencing very positive agricultural development indicators at the time: "The paradox in Latin America is that while agriculture has been doing relatively well as a productive sector with a sustained 2.5 per cent annual growth in agricultural value added over the past 40 years, rural people have not fared well: rural poverty remains stuck at 58 million", (World Bank 2007, p. 239).

This "Latin American paradox"<sup>18</sup> led to a project by the Food and Agriculture Organization of the United Nations to look at this relationship in the eight LAC countries with the largest agricultural economies (da Silva et al. 2009). The four key findings were: (1) Even

in countries with vigorous agricultural and smallholder policies and budgets, agricultural growth made a relatively small contribution to poverty reduction, and the significant improvements in headcount poverty in several of the countries were largely due to social policies, private remittances, and the growth of the non-farm economy. (2) The relationship between agricultural growth and rural poverty varied markedly by subnational region and, relatedly, by the composition of agricultural production in different places. (3) The labour demand and the labour productivity and wages associated with specific value chains also varied significantly. (4) Initial levels of inequality had a large detrimental effect on the agricultural growth elasticity of poverty.

The analysis of this paradox by the World Bank (2007) added another explanatory factor, the poor quality of the governance of agriculture and rural areas. The Independent Panel on

Agriculture for Development in Latin America (PIADAL 2013, p. 87-89; free translation from the original in Spanish) concluded that agricultural and rural development policies in the region are “a sum of partial and disparate agreements built in a policy process based on negotiations between the state and narrow-base actors [...] these negotiations are sometimes almost private [and] rural social actors with less power, like smallholders, the poor and other socially excluded sectors, are almost always under-represented in those negotiations.”

Manufacturing is an important engine of development due to its unconditional convergence in labour productivity (Rodrik 2013). Historically, manufacturing has absorbed large numbers of low-skilled labour from less productive sectors. However, in LAC, its importance has recently shrunk: from 2000 to 2013, its contribution to the economy fell by four percentage points (to 15 per cent) and its total product grew less than that of agriculture. This is just the latest instalment of a trend initiated at the end of the import-substitution strategy in the 1980s (Narula 2002; Mesquita Moreira 2006).

Labour informality is an important aspect of these economies. For this report, focused as it is on *inclusive* rural transformation, labour informality is highly problematic as, by definition, it is related to unregulated, unsafe and less productive jobs. Further, it is closely related to economic inequality (Arim and Amarante 2015). Informal labour – not connected to social security – accounted for 45 per cent of labour in the region in 2011, from 68 per cent in Bolivia to 85 per cent in Uruguay (ECLAC 2013). Defining informality as low-skilled employment and self-employment, informality varies from 40 per cent in Chile to 70 per cent in Bolivia (Gasparini and Tornarolli 2009). In the last decade there has been a small drop in labour informality, related to a modest but significant fall of income inequality (Amarante and Arim 2015), but 60 per cent of youth are employed in informal jobs and 27 million formal jobs would be needed now to correct this problem.

As with the relationship between agricultural growth and poverty reduction, there are

very large subnational differences in labour informality. The “Latin American Report of Poverty and Inequality 2013” (Rimisp 2014) estimates the labour formality rate for six LAC countries. The mean national formality rate varies from 5 per cent (Ecuador) to 61 per cent (Chile). However, among Ecuador’s departments, it varies between 2 per cent and 9 per cent, while for Chilean regions it ranges from 40 per cent to over 70 per cent. In Brazil, with a mean national rate of formality of 45 per cent, the range among municipalities is from 5 per cent to 90 per cent.

Urbanization is concomitant with structural transformation. LAC is a region where urbanization has reached maturity, stabilizing at slightly below 80 per cent of the total population. The absolute number of rural people in our 19 countries started to decline sometime between 1990 and 1995. During the period 2000-2015, the region will have lost 1.8 million rural dwellers.<sup>19</sup>

Our understanding of this trend is, however, very much influenced by the way in which “rural” is defined in official statistics. In LAC countries, it is defined as a residual – that which is not urban. “Urban” thus absurdly includes everything from villages with only 2,000 or 2,500 inhabitants<sup>20</sup> all the way to the metropolitan regions of Mexico City and São Paulo (around 21 million each). In 2000-2015, LAC had 123 large cities and urban agglomerations (of 500,000 or more) with a combined population of 267 million people, or 53 per cent of the urban population. The rest of “urban” is made up of an unknown number of small and medium-sized cities of up to 500,000 inhabitants, where 236 million urban people (47 per cent of the urban population) live in close functional interactions with their surrounding rural hinterlands. The population of these small and medium-sized urban centres in rural-urban territories is projected to increase by 11 per cent between 2015 and 2030, absorbing many of the people who will be leaving the “officially rural” areas.

In almost all the LAC countries, urbanization is high but urban concentration is low. The global average rate of “urban primacy”<sup>21</sup> is

33 per cent. Most LAC countries, including most of the larger ones, are well below this. This prevalence of small and medium-sized cities is an undervalued factor that should feature much more prominently in LAC's rural development strategies and programmes. Christiansen and Todo (2014, p. 43) discussed this "missing middle" in rural transformation and concluded that countries with more decentralized patterns of urbanization show "more inclusive growth patterns and faster poverty reduction than agglomeration in mega cities."

Rural economies in all LAC countries are much diversified. Projecting from Dirven (2011), it is more than likely that, in 2015, the average share of rural non-farm employment (RNFE) for the region was already over 50 per cent. National statistics suffer from methodological issues in measuring individual participation in the labour market, but the trend is clear per estimates reported by Klein (1992) for the early 1980s (24 per cent RNFE), by Reardon et al. (2001) for the late 1990s (31 per cent RNFE) and by Dirven (2011) for 2008 (45 per cent RNFE).

Much of this RNFE is in low-productivity jobs, however, which Klein (1992) called "refuge" rural employment. Regions with greater agricultural dynamism also tend to have higher-quality and more productive RNFE (Reardon et al. 2001). Further, poorer households and individuals, with fewer assets, often engage in refuge RNFE rather than migrate from agriculture to jobs that are far more productive, frequently as part of diversified livelihood strategies at household level. This response may be a slight improvement over very small-scale subsistence agriculture, but it contributes little to sustained poverty reduction or to rural economic growth.

Even considering the low productivity of rural jobs, over 2002-2012 the 12 LAC countries with data reduced rural poverty by 26 per cent on average. The leaders in poverty reduction were Chile and Brazil, which cut rural poverty by 56 per cent and 42 per cent, respectively, followed by Peru and Bolivia with around 30 per cent each. Paraguay, the Dominican Republic and Mexico cut rural poverty by less than 20 per cent. While we do not have a complete and comparable data set for

Guatemala for the period, this country appears to be at the bottom of the region, with a rate of rural poverty reduction in 2002-2006 that, if projected over the full decade, would have come in at less than 6 per cent.

Further, for the first time since reliable statistics have become available, in the decade after 2000, rural LAC began to see a statistically significant decrease in income inequality: the ratio of total income of the top and bottom rural deciles went from 19 to 14 (2002-2013), a pattern very similar to that in urban areas. Bolivia, Colombia, Ecuador, Mexico and Uruguay did particularly well on this indicator, while the Central American countries, plus Paraguay, tended to see increased inequality.

The reduction in inequality is in part due to targeted government cash transfers, because the same ratio of rural *labour* income was much higher and showed almost no improvement, from 39 to 37 between 2002 and 2013.<sup>22</sup> The countries that did well in improving the distribution of total income and labour income include Bolivia, Colombia and Ecuador, while Brazil, El Salvador, Mexico and Peru had significantly worse performance in improving the labour than the total income distribution. So, while it is possible that gains in rural poverty and rural income inequality were driven, in part, by more employment and higher wages in agriculture, it seems that social protection policies were important, too.

The decade saw great progress in extending basic social services (health, education, water and sanitation, and electricity) to much of the rural population. The gender gap in access to these services narrowed sharply, although very wide ethnic inequalities remain in access to services – and on other indicators (box 1.2) – in all countries where data were available.

Gender issues are also crucial. The poverty femininity index grew by 7 per cent from 107.5 in 2002 to 115.2 in 2012 for the rural areas of LAC, meaning that rural poverty has fallen more for men than for women. The trend is the same in the 19 LAC countries, although rates vary.<sup>23</sup> Some authors argue that agriculture is feminizing in the region (Deere 2005; Lastarria-Cornhiel 2008).

**BOX 1.2 How indigenous peoples are marginalized**

Indigenous peoples are to a great degree socially marginalized by the region's structural and rural transformations. Indigenous peoples in LAC have suffered territorial dispossession and social exclusion since the Spanish conquest in the sixteenth century. Until recently, their socio-economic conditions were almost invisible in official statistics in most countries (ECLAC 2014a). The countries with the highest indigenous populations as a share of the total are Bolivia (62 per cent), Guatemala (41 per cent), Peru (24 per cent), Mexico (15 per cent) and Panama (12 per cent). Poverty is higher among indigenous peoples than in the rest of the population (Cord et al. 2015). For example, in Ecuador, the poverty rate in 2012 was 30 per cent for the total population and 60 per cent for indigenous peoples (Cord et al. 2015). In Guatemala, the poverty rate for the non-indigenous rural population in 2011 was 61 per cent, and 81 per cent for the rural indigenous group. In Mexico, poverty among people who speak an indigenous language was, in 2014, almost twice the rate in the rest of the population (77 per cent and 43 per cent), and the difference in extreme poverty was almost five times the rate (38 per cent and 8 per cent) (CONEVAL 2014). However, poverty reduction policies have had a stronger effect on the indigenous population, reducing the poverty gap between the two groups. Still, a large gap persists, not just in income and assets, but in education and health.

The share of indigenous peoples living in urban centres in 2000 varied from a high of 65 per cent of the indigenous population in Chile to 56 per cent in Peru, 53 per cent in Bolivia and 40 per cent in Nicaragua. The table below shows that in Guatemala and Chile urban indigenous peoples are far better off than their rural counterparts in terms of income, which could mean the conditions of social exclusion are stronger in rural than urban areas.

**Indigenous peoples' urban and rural incomes in Guatemala and Chile**

Guatemala (current quetzals, total income)

Year	Urban			Rural		
	Non-indigenous	Indigenous	Indigenous/ non-ind. (%)	Non-indigenous	Indigenous	Indigenous/ non-ind. (%)
2000	489	293	60	243	174	72
2006	885	531	60	456	312	68
2011	1643	827	50	713	533	75

Chile (current pesos, labour income only)

Year	Urban			Rural		
	Non-indigenous	Indigenous	Indigenous/ non-ind. (%)	Non-indigenous	Indigenous	Indigenous/ non-ind. (%)
2006	178 610	120 363	67	112 338	68 543	61
2009	225 538	153 370	68	131 564	82 877	63
2011	247 707	166 344	67	161 331	99 977	62
2013	294 247	207 008	70	180 875	134 061	74



A legacy of historical conflict means that several indigenous peoples in countries face a real risk of disappearing. In Chile, for example, seven different indigenous peoples have been pushed to extinction, at least one group as recently as the 1980s. A more recent cycle of territorial dispossession stems from exploitation of oil, gas and other mineral resources. Throughout LAC, there are 200 indigenous groups in voluntary isolation due to the pressure they receive over resources on their territories, and all of them are in a situation of extreme demographic risk, facing violence, illness and human rights violations (ECLAC 2014a).

Note: in 2013, Chile's Ministry of Social Development changed the way housing costs are imputed, and stopped adjusting the survey results with data from the National Accounts. For comparability purposes, for 2013, we use the old definition of autonomous household income per capita.  
Source: Casen (2006, 2009, 2011, 2013).

From 2002 to 2012, the share of agricultural employment in rural areas dropped by 6 per cent for the rural active population and for rural men, but for female workers it grew by 5 per cent.<sup>24</sup> The growing participation of women, mainly in temporary work (Lastarria-Cornhiel 2008; Soto Barquero and Klein 2012) may imply a correlation with poverty feminization. Rural territorial development has become a powerful idea in Latin America's rural development strategies. Modrego and Berdegué (2015) summarize the results of several national case studies covering around 9,000 municipalities, districts and provinces from nine countries representing over 80 per cent of the region's population.

In 42 per cent of these places, they found an indication of economic growth, in 36 per cent the growth was accompanied by poverty reduction, and in only 13 per cent was it also accompanied by improvements in income distribution. Of these locations, 29 per cent saw no growth and no gains in poverty or in income distribution. Significantly, in 29 per cent of these territories the authors report poverty or inequality reduction (or both) without localized economic growth, showing how social transfers and, in some places, private remittances from migrants have decoupled social from economic development.

### Typology of transformation processes in LAC

As in the other regional chapters, we developed a typology to classify countries by their position

in three domains (see below). The position of each country is defined relative to the average for LAC countries with a complete data set (16 countries). A country could therefore be in a low position in the rural transformation in LAC but be well advanced in comparison to a country in another region. More importantly, a country could be making good progress against its own past, yet be lower than the regional average. The three sets of indicators used are (table 1.1):

- *Structural transformation: change in the share of non-agricultural activities in GDP.* The period of change is between, approximately 1990 and 2014. Countries with a share of non-agriculture in GDP higher than 90 per cent are automatically considered transformed. For the rest, a change in percentage points per year equal to or higher than the regional mean change indicates advanced structural transformation.
- *Rural transformation: change in share of agricultural labour productivity (agricultural value added per worker).* A change equal to or higher than the regional mean change indicates advanced rural transformation.
- *Social inclusion in rural areas: change in rural poverty headcount rate.* A decline per year equal to or higher than the regional mean change indicates fast poverty reduction. This gives a limited picture of social inclusion. To partly compensate, some analysis on economic inequality, measured by the Gini coefficient, is used.

TABLE 1.1 Data for classification of LAC countries on the typology, 16 countries

Country	Structural transformation		Rural transformation		Social inclusion in rural areas		GDP per capita		Rural Gini coefficient	
	Share of non-agriculture in GDP (%)		Agricultural labour productivity (%)		Rural poverty headcount rate at national poverty line (%)					
	c. 1990	c. 2014	c. 1990	c. 2012	c. 2000	c. 2012	c. 1990	c. 2014	c. 1999	c. 2012
Brazil	91.9	94.4	1 990	2 014	70.6	31.1	10 331	15 412	54.7	49.5
Chile	91.3	96.7	1 712	5 470	51.8	27.9	9 193	21 967	49.5	47.1
Colombia	83.3	93.3	3 224	6 638	61.7	42.8	7 752	12 447	50.6	47.1
Dominican Republic	85.5	93.8	3 654	3 982	47.4	51.2	5 278	12 505	48.0	39.2
Guatemala	84.9	88.5	2 460	8 181	74.5	71.4	5 315	7 181	47.9	44.6
Mexico	92.2	96.5	1 477	2 009	66.5	63.6	12 479	16 496	50.2	47.5
Nicaragua	79.0	79.5	2 712	4 416	70.3	63.3	3 025	4 574	51.4	44.7
Peru	91.1	92.6	1 623	3 973	78.4	48.0	5 280	11 514	45.0	42.8
Bolivia	83.3	86.7	1 025	1 949	84.0	61.3	3 740	6 153	64.0	54.3
Ecuador	78.6	90.6	594	658	82.2	35.3	7 542	10 774	62.7	45.2
Honduras	77.6	86.2	1 222	2 647	71.3	68.5	3 205	4 214	54.2	57.8
Paraguay	83.0	79.1	1 644	3 173	52.5	33.8	5 985	8 038	56.0	53.2
Uruguay	90.8	91.4	5 475	10 297	20.7	3.0	9 841	19 929	43.1	36.9
Costa Rica	87.7	94.4	3 199	6 813	26.3	30.3	7 333	13 713	46.2	46.8
El Salvador	82.6	89.2	2 344	4 187	42.4	36.0	4 454	7 613	48.9	37.6
Panama	90.2	96.5	2 133	3 489	64.4	49.4	7 463	19 637	57.2	50.1

Sources: World Bank's World Development Indicators (WDI) (non-Brazil); ECLAC (2014b) (Brazil). Poverty data: WDI (non-Brazil); CEPALSTAT database (ECLAC), with an alternative national poverty line calculated by this United Nations agency for monitoring the Millennium Development Goals (Brazil).

The analysis yielded six broad categories (table 1.2). Within each, we looked at changes to economic inequality among the rural population, based on the rural Gini coefficient.

The findings suggest that poverty reduction depends more on structural transformation than rural transformation.

TABLE 1.2 Distributions of countries' outcomes for transformation and inclusion in Latin America and the Caribbean – typology

Speed of structural and rural transformation		Rural poverty reduction	
		Fast	Slow
<b>Fast structural transformation</b>	Fast rural transformation	Type A <b>Chile, Brazil*, Ecuador, Peru*, Uruguay*</b>	Type B Costa Rica, Dominican Republic, Honduras
	Slow rural transformation	Type C Colombia, Panama	Type D El Salvador, Guatemala, Mexico*
<b>Slow structural transformation</b>	Fast rural transformation	Type E <b>Paraguay, Nicaragua</b>	
	Slow rural transformation	Type F <b>Bolivia</b>	

Notes: fast structural transformation refers to countries with above-average rates of structural transformation. Slow structural transformation countries are those with rates below average for their regions. Rural transformation and poverty reduction are also measured relative to averages for each region. Countries in bold show a reduction in inequality equal to or higher than the regional mean. \* denotes the four countries in this region that, as described in the Introduction, are automatically classified as having fast structural transformation because their initial share of non-agriculture in GDP exceeds 90 per cent. Source: Authors.

### Explaining the observed patterns of transformation

Having seen how different LAC countries followed distinct patterns of structural and rural transformations, with very different implications for social inclusion in rural areas, we now contrast these patterns with those expected under differing development theories and policy approaches, to see if any shows much association with the trends just described.

#### Economic and trade liberalization

The most influential development theory since the 1980s is that free-market policies will accelerate structural and rural transformations and poverty reduction. However, the Heritage Foundation Index of Economic Freedom,<sup>25</sup> which measures trade openness, property rights and other aspects of free-market policies, shows only a weak correlation with our typology of

LAC countries (table 1.3). Three of the five type A countries (from table 1.2) are in the first positions of the regional ranking, but Brazil, also type A, is at the bottom. Costa Rica and Mexico – type B and type D, respectively, indicating slow poverty reduction – are high in the Heritage Index.

Nor do the changes in inequality show a particularly strong correlation with economic freedom. Despite the claims of many who argue that market liberalization promotes inequality, Colombia, Uruguay and Peru are among the leaders on economic freedom in the region (see table 1.3) and scored above average on reducing inequality. At the same time, Chile – the definitive leader in economic freedom – does not show as much of a reduction in rural inequality as other countries. Nicaragua, Brazil, Ecuador and Bolivia do well on this measure of social inclusion but are at the bottom of the

TABLE 1.3 Measures of economic liberalization versus country typology

Country	Heritage Index world rank	Trade openness (2011)	Type
Chile	7	64.6	A
Colombia	28	28.9	C
Uruguay	43	47.3	A
Peru	47	35.9	A
Costa Rica	51	84.3	B
Mexico	59	57.7	D
El Salvador	62	n.a.	D
Panama	68	79.0	C
Paraguay	83	58.8	E
Dominican Republic	86	31.5	B
Guatemala	87	51.8	D
Nicaragua	108	n.a.	E
Brazil	118	33.2	A
Ecuador	156	46.5	A
Bolivia	163	39.0	F

Notes: bold type denotes a reduction in rural inequality greater than the regional mean. Trade openness is measured as total imports plus total exports together as a share of GDP.

Source: Heritage Foundation (Heritage Index); Penn World Table 8.1 (trade openness); authors (last column).

Heritage Index. Perhaps the fairest conclusion is that while an open, market-oriented economy with a limited state – a “liberal” economy – can enhance economic growth, it does not, in itself, reduce rural poverty and inequality.

Most countries liberalized their trade policies from 2002 to 2012. Some countries, such as Paraguay, re-agriculturalized as a result. The countries with the most liberalized policies – Costa Rica and Chile – saw little reduction in inequality. Other countries, such as Brazil, which relied less on trade after 2000, did equally well or better than others such as Mexico, where trade became more important.

There is also a weak relationship between trade openness and the position of a country in our typology (see table 1.3, third data column). If the relationship was strong, one

would expect to see type A at the top of the table, but some are at the bottom. Thus, inequality reduction does not show any correlation with trade openness, either.

#### **Inclusive institutions**

Another prominent theory posits that the quality of institutions is crucial for inclusive development. Acemoglu and Robinson (2012) and other authors have argued that there is a strong relation between social organization and development, through inclusive economic and political institutions that stimulate innovation, while allowing broad participation and accountability. Conversely, “extractive institutions” constrain economic growth and overall development as they lead to policies that concentrate wealth and power among

elite groups. Inclusive institutions can be more important in countries with a large endowment of natural resources, like many in LAC. Gylfason and Zoega (2006) found an inverse relationship between natural resources on the one hand and civil liberties, economic growth, investment and secondary education on the other. Isham et al. (2005) found that countries dependent on localized natural resources have weaker institutions and more socio-economic divisions.

Mechanisms for distributing rents are important in nations with rent-seeking elites. LAC has fiscal policies, such as the *Sistema de Regalías* in Colombia and the *Canon minero* in Peru, that distribute considerable natural resource royalties to the regions that generated them, and to other disadvantaged places. At least in Colombia, the results are heterogeneous, and depend on the capacities of the regional and local governments, and society more widely, to use these resources in transparent and effective ways to promote development (Bonet et al. 2014). For Peru, Arreaza and Reuter (2012) find no evidence of better provision of public goods from the *Canon minero*, but they do find more public spending in region where it is applied, suggesting that the problem lies in inefficiencies of the local governments.

Using the World Bank's Worldwide Governance Indicators (2015a)<sup>26</sup> for 2012, we find no evidence that inclusive institutions affect structural or rural transformation indicators, but we do find a strong and statistically significant relationship between some quality of governance indicators and rural poverty reduction (table 1.4),<sup>27</sup> which shows a close fit with our earlier typology.

According to Acemoglu and Robinson's (2012) theory of inclusive institutions, there is a relationship between political and economic institutions (whether they are inclusive or extractive), and national prosperity, defined as economic growth that benefits the majority of society. In turn, many studies find societies with high levels of inequality of opportunity also have high levels of concentration of political and economic power (World Bank 2006). While the correlation is obviously not perfect,<sup>28</sup> a good case can be made for relationships that link trends

in inequality, the inclusiveness of political and economic institutions, and structural and rural transformation processes that lift large numbers of poor rural people out of poverty.

### Labour productivity

The movement of labour from lower to higher productivity jobs is at the very heart of the theory of socially inclusive structural transformation (Timmer 2007). McMillan and Rodrik (2011) argue that, in the early stages of development, non-agricultural labour productivity grows faster than agricultural labour productivity, but that they converge once total labour productivity surpasses a certain threshold.

In LAC, however, we find that the countries classified as more transformed are not necessarily those with lower labour productivity gaps. For example, the ratio of an economy's overall labour productivity to its agricultural labour productivity in a type A country like Brazil went from 5.8 to 2.5 between 1990 and 2012. In the same period the Dominican Republic, a type B country, shows a trend from 2.4 to 1.7. Nicaragua, a type E country, interestingly shows a gap below 1 in 2010, that is, higher labour productivity in agriculture than in the economy as a whole.

The countries in table 1.5 with smaller gaps are not necessarily converging to some high-productivity equilibrium. This can be seen in Nicaragua, Paraguay and Honduras, which have low-productivity gaps and very low levels of labour productivity in the overall economy, particularly in agriculture. In fact, countries such as Honduras or Nicaragua which are quite poor, have high rates of employment in agriculture and very low agricultural labour productivity, and yet already have productivity gaps as low as or lower than those of the three developed countries in table 21.5 (added for comparison). Surely this is a kind of "convergence" very different from that implied by the theory of structural transformation?

In table 1.5, it is possible to see a general trend downwards in the productivity gap between agriculture and the economy as a whole, and this is generally good news. McMillan and Rodrik (2011) find that in LAC

TABLE 1.4 Correlation between Worldwide Governance Indicators and rural poverty

Independent variables	Dependent variable: rural poverty at national poverty line <sup>a</sup>					
	1	2	3	4	5	6
Control of corruption	-17.0***	-	-	-	-	-
	(1.9)	-	-	-	-	-
Government effectiveness	-	-17.7***	-	-	-	-
	-	(2.7)	-	-	-	-
Political stability	-	-	-16.0***	-	-	-
	-	-	(1.9)	-	-	-
Regulatory quality	-	-	-	-10.5***	-	-
	-	-	-	(2.7)	-	-
Rule of law	-	-	-	-	-18.8***	-
	-	-	-	-	(2.2)	-
Voice and accountability	-	-	-	-	-	-25.3***
	-	-	-	-	-	(2.7)
Constant	48.7***	49.8***	47.7***	54.3***	44.5***	56.5***
	(1.4)	(1.5)	(1.5)	(1.5)	(1.7)	(1.2)
R <sup>2</sup>	0.4	0.3	0.4	0.1	0.4	0.4

Notes: a = ordinary least squares regression. \*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1. Standard errors in parentheses. Sources: authors' calculations from World Bank (2015) (non-Brazil); CEPALSTAT database (ECLAC) (Brazil).

productivity growth is mainly caused by within-sector labour productivity gains, with little structural shift between sectors. Since the 1990s, labour has moved between low-productivity jobs (agricultural to informal, low-quality urban or rural non-farm jobs) and not to manufacturing or to high-productivity services.

### Territorial development

Territorial development has also been a much-discussed strategy. A recent special issue of *World Development* (Berdegúe et al. 2015a) summarized the evidence and analysis. For our discussion, two findings are crucial:

- In LAC – a region with wide inequalities – national averages are very misleading. Each

country has rural territories that are transforming and not transforming, with different degrees of social inclusion.

- While geographical variables and national conditions, actors and policies are important determinants of territorial development, the structural features of each territory are critical in determining development at this level. These include the territory's social institutions related to resource access and control, economic structures (industrial organization and types of firms by size and origin of capital) and linkages to dynamic markets, linkages to intermediate cities, the degree to which public investment is directed towards public or private goods,

TABLE 1.5 Labour productivity in agriculture and the whole economy

Country	GDP per worker		Agricultural value added per worker		Agricultural productivity gap <sup>a</sup>	
	c. 1990	c. 2011	c. 1990	c. 2011	c. 1990	c. 2012
Chile	11 534	20 159	3 224	6 536	3.6	3.1
Mexico	18 827	20 624	2 663	3 809	7.1	5.4
Panama	10 317	16 181	2 369	3 862	4.4	4.2
Uruguay	9 667	15 111	5 475	9 559	1.8	1.6
Costa Rica	8 867	12 974	3 199	6 461	2.8	2.0
Dominican Republic	6 682	11 976	2 581	6 894	2.6	1.7
Brazil	9 939	11 964	1 712	4 770	5.8	2.5
Colombia	9 212	9 822	3 654	3 587	2.5	2.7
Peru	5 468	7 302	1 025	1 885	5.3	3.9
Ecuador	7 402	7 856	1 946	3 946	3.8	2.0
El Salvador	5 697	7 509	2 133	3 468	2.7	2.2
Guatemala	6 012	5 958	1 945	1 938	3.1	3.1
Paraguay	3 670	3 828	1 644	2 216	2.2	1.7
Honduras	3 681	4 060	1 222	2 237	3.0	1.8
Nicaragua	3 332	3 253	1 773	3 479	1.9	0.9
Bolivia	2 636	2 601	594	643	4.4	4.0
<b>Comparison countries</b>						
United States	75 482	95 535	31 577	62 957	2.4	1.5
Netherlands	72 630	86 981	31 040	61 026	2.3	1.4
Spain	62 477	67 001	16 048	33 198	3.9	2.0

a. Calculated as GDP per worker/agricultural value added per worker.  
Source: authors' calculations using WDI data (World Bank 2015b) data.

Annual change in agricultural productivity gap (%)	Sectoral employment (% of total employment)					
	Agriculture		Industry		Services	
	c. 1990	c. 2011	c. 1990	c. 2011	c. 1990	c. 2012
-0.7	1.2	10.3	25.1	23.4	73.2	66.4
-1.5	26.9	13.4	22.0	24.1	51.0	61.9
-0.2	19.1	16.7	26.3	18.2	54.6	65.2
-0.5	1.4	10.9	30.9	21.1	67.7	68.0
-1.5	25.9	13.4	25.9	19.5	47.5	66.9
-2.0	20.3	14.5	22.9	17.8	56.6	67.8
-3.9	7.5	15.3	25.2	21.9	67.3	62.7
0.4	7.4	16.9	29.1	20.9	63.4	62.2
-1.5	12.9	25.8	29.8	17.4	57.2	56.8
-2.9	50.1	27.8	16.7	17.8	33.2	54.4
-0.9	22.6	21.0	27.8	21.1	46.1	57.9
0.0	39.8	32.3	22.5	19.5	37.7	48.2
-1.2	26.6	27.2	14.6	16.1	58.7	56.7
-2.4	2.1	35.3	27.6	19.8	70.3	44.9
-4.5	40.5	32.2	13.6	16.5	39.5	51.2
-0.5	1.2	32.1	25.1	20.0	73.2	47.9
-3.4	2.7	1.6	24.1	16.7	73.1	81.2
-2.3	4.5	2.5	25.9	15.3	68.6	71.5
-4.0	9.0	4.4	30.2	20.7	60.8	74.9

the participation of the population in deciding investment priorities, and “transformative coalitions”.<sup>29</sup>

We can use this framework to look at the position of the different countries in our typology of rural transformation (see table 1.2). As expected, the national averages that inform the country typology do not correlate with the findings on territory-level development. Type A countries have many territories without (or only very little) transformation and with little or no social progress – 32 per cent of 4,200 municipalities analysed in Brazil and 42 per cent of 342 municipalities in Chile. Similarly, for type B and D countries, such as Mexico, although national rapid transformation does not appear to be lifting rural people out of poverty fast enough, 35 per cent of 2,400 municipalities show clear signs of improving their economic and social performance.

In fact, each country contains territories that in our country typology would be classified from A to F. National policies play out very differently when they “hit the road” in different places with particular histories and institutions.

### Conclusions and implications for policy and investment

LAC countries have diverse patterns of structural and rural transformation, with different degrees of social inclusion. All feature substantial urbanization, relatively small agricultural sectors and rising rates of agricultural labour productivity. Yet these general features have little predictive power for social-inclusion trends, and simplistic narratives are inadequate to explain development patterns. Countries and regions can transform in many ways, with many variations on how a single structural trend translates into inclusion.

The core questions of this report as they apply to LAC are:

1. Why are some LAC countries undergoing significant and rapid processes of structural and rural transformation, while in others both growth and the transformation processes remain very limited?

2. Why does the rural transformation in some LAC countries lead to inclusive, broad-based development opportunities and improved standard of living, while in others the process leaves significant groups of people behind?

3. What can be done by governments, the private sector, civil society and development partners, including IFAD, to stimulate and support inclusive and sustainable rural transformation?

One answer to questions 1 and 2 could be that only three of the 16 LAC countries with a complete data set (Brazil, Chile and Uruguay) show a pattern of development that more or less resembles the one expected from a projection of the experience of the now-developed OECD countries. That is, structural and rural transformations moving forward hand in hand, leading to productivity convergence and to broad-based social inclusion. In these three countries, however, significant sectors of the rural population, such as indigenous peoples, and important numbers of rural regions and territories, are left far behind.

Three of the 10 LAC countries reducing rural poverty rapidly are doing so in the absence of rapid rural transformation. This probably reflects the high importance in the region of social protection policies, including conditional and unconditional cash transfers and non-contributory pension schemes (the region has, for example, 135 million beneficiaries of conditional cash transfers). The generation of social policies championed since the mid-1990s decoupled rural poverty reduction from economic inclusion.

Why are the majority of countries not transforming faster, and doing so in ways that lift more rural people out of poverty? A hypothesis from this chapter is that three factors are at play: agriculture has not increased its productivity enough in most countries,<sup>30</sup> other sectors of the economy have not generated enough high-productivity jobs in all countries, and rural economic growth and social-inclusion processes remain highly concentrated in certain territories and groups, resulting in low elasticities of growth.

More fundamental issues remain. Why has agricultural productivity not grown faster? Why have non-farm and non-rural jobs not been created in greater numbers? Why do positive outcomes tend to be so sharply concentrated?

One hypothesis is that the economic inequality that rose sharply in LAC with the boom in commodity exports of the late nineteenth century (Williamson 2015) consolidated the rent-seeking extractive institutions that govern these countries (Acemoglu and Robinson 2012), bequeathing two legacies: (1) *Long-term* economic growth has been quite modest in most countries since the 1940s,<sup>31</sup> as the region depended more on commodity exports than on innovation, and (2) LAC missed the sharp decline in income inequality seen in North American and European countries after World War II, so that recent transformations took place in a context of record high inequality. In short, poor people never had a chance, as whatever growth there was tended to favour wealth concentration rather than inclusion.

If we accept this hypothesis, the answer to question 3 could be that a strategy for inclusive rural transformation cannot be decoupled from comprehensive efforts to promote more inclusive economic *and* political institutions – moving efforts from extractive, rent-seeking activities to productivity-enhancing, more socially inclusive ones. Chile, Brazil and Peru are making such efforts, and Colombia is designing a comprehensive and far-reaching set of rural policies that, if implemented, could go a long way to fostering socially inclusive rural transformation.

More specifically, it is very difficult to see how *any* rural agenda could have the needed impact unless other sectors of the economy can increase their capacity to generate millions of higher-quality and more productive jobs, which seems unlikely given that the region is “prematurely deindustrializing.”

Given these concerns, the inclusion agenda should have the following objectives:

1. *Concentrate on increasing agricultural competitiveness in the corporate and the family farm sectors, and on exploiting decentralized patterns of urbanization to stimulate rural economic diversification.*

This objective requires a major shift in agricultural and rural public budgets, which today are mainly allocated to private transfers to medium and large farmers and to agribusinesses in the more productive regions, and to infrastructure in those places. A major pro-rural poor and pro-smallholder policy shift in allocating and using public budgets is needed to counterbalance the accumulated and current effects of the dual agrarian structure.

A major emphasis should be to support the expansion of high-quality public goods, which will also demand a major effort to coordinate agricultural (and smallholder) policies and programmes with those related to public services, infrastructure, and broader economic development – something that probably can only be done on the basis of regional and territorial development approaches.

These policies will vary enormously by country. In most, but particularly types B and D, the impetus for change is unlikely to come from the agricultural sector itself, and a strategy for rural transformation with social inclusion will require the consolidation of policy coalitions with a substantial presence of non-rural stakeholders: consumers, social activists, environmentalists, and mid- and downstream private investors in agrifood systems.

IFAD and other international agencies can support this policy shift through policy dialogue and technical assistance. The private sector will naturally be a central – if not the main – actor in making the investments that lead to higher labour agricultural productivity and, in the countryside and in nearby small and medium-sized cities, to a greater number of more productive jobs in the non-farm economy. Much of this activity will be linked to the “quiet revolution” in food systems and value chains (see chapter 6).

*2. Promote much faster reductions in rural economic inequality by taking advantage of many countries' gains of the past 15 years.*

This development objective stands on its own ethical merits, but it is also essential for agricultural and rural economic growth to have a bigger impact on poverty reduction. This objective must include targeted policies and investments in support of lagging social groups (of which indigenous and Afro-descendant peoples, rural women and smallholder farmers are the top priorities) and lagging rural territories. This is an essential condition in a region that not only has high inequality but a dualist agrarian structure – non-targeted investments of public funds have disproportionately benefitted large landowners and agribusinesses.

In the past decade, conditional and unconditional cash transfers have been the main instruments improving social conditions in rural areas, but seem to have reached their fiscal and political limits. Generation of income by the poor themselves will have to play a bigger role. There are better structural conditions now than in the past,<sup>32</sup> including better rural infrastructure, a more educated rural labour force, fast-growing provincial small and medium-sized cities and, in some countries, such as Brazil, Chile, Colombia and Peru, better-designed rural development policies. Civil society and the conventional media now have greater capacity and will to denounce the corrupt and clientelistic practices that have plagued LAC development programmes for decades.

Long-term and consistent efforts to improve rural labour markets and educational systems are also required. Progressive fiscal policies are needed to reach large agricultural corporations, agribusinesses and firms engaged in extractive industries in rural areas. Again, IFAD has a role to play – as do other development agencies – through regular work with poor and vulnerable rural groups. Additionally IFAD should support agricultural and non-agricultural private firms that wish to engage on new terms with smallholder producers and help with the long-term social and economic development of lagging rural territories.

*3. Improving the social protection policies of the past two decades to increase their impact and long-term sustainability.*

The new generation of social protection policies – as being tested in Brazil, Chile, Colombia, Mexico and Peru – will have to include government transfers, economic development programmes targeted at poor and vulnerable groups and territorial development. The aim is that the new or improved assets and capabilities of the poor and vulnerable can be capitalized in a better socio-economic environment. IFAD and other development agencies are engaging in this promising policy arena that grew in national capitals rather than international headquarters, and they should become even more active.

Informality is generally high in LAC – at least 60 per cent in Bolivia, Mexico and Paraguay. As Fox and Gaal (2008) explain in their analysis of sub-Saharan Africa, it can be more effective to accept such high informality as a temporarily unchangeable fact of economic life and to craft policies to foster it as a way out of poverty. This is particularly important for many women. Nevertheless, given that informality and inequality are correlated in LAC, informality-reducing policies have an important place in the region.

It is unthinkable that the strategy to promote an inclusive rural transformation will, as in the past, be an agriculture-led strategy. There are three reasons for this: the relatively small size of agriculture in LAC's national economies,<sup>33</sup> the majority of rural Latin Americans living in or very near small and medium-sized provincial cities and towns, and RNFE accounting for a growing share of income. Latin American rural societies can no longer be understood through an agrarian lens, nor further developed by means of an agrarian policy toolkit. Agriculture still has a central role to play and, indeed, in many territories of each country agriculture remains the activity around which economic and social life is organized, but cross-sectoral, place-based approaches, such as territorial development, are today probably more pertinent.

This brings us to another policy domain, decentralization. If tomorrow's actions must be increasingly implemented at territorial level,

there is a need to strengthen the capacity of social actors and subnational governments in those places. It is not only a matter of fostering the decentralization of the state, and so strengthening local governments. It is, above all, a question of developing the capacity of all public and private actors living and working in each rural territory (including in their small and medium-sized cities) to plan together, resolve conflicts and collaborate in carrying out comprehensive development agendas. IFAD is already doing this, mainly in the Andean countries and Brazil.

A final word is in order about the role of IFAD in the region, and particularly the six countries<sup>34</sup> with high numbers of rural people, per capita GDP above US\$4,000 and very large government budgets and other capacities to support development. These countries are spending several hundred dollars of their own resources on each inhabitant in rural areas every year, and have the qualified staff and organizational capacity to design policies and programmes as they see fit.

In these countries, IFAD and other development agencies, need to develop a business case that is focused on adding value through knowledge-based initiatives that promote improvements in the quality of national policies and programmes. This can be done through targeted loan-based projects with explicit innovation-seeking objectives and clear scaling-up strategies. However, it can be done more effectively by combining these loan-based projects with technical assistance, South-South learning, and policy dialogue projects.

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## Spotlight 1: Social protection

Social protection is important in driving rural transformation and ensuring its inclusiveness. The policies of social protection – defined as a set of interrelated public policies and interventions implemented to reduce poverty, vulnerability and risk – via universal and targeted social interventions have the potential to enhance the capacity of vulnerable groups to participate in their communities' economic, social and political life. Equally important, to the extent that they enhance the participation of often marginalized groups – smallholder farmers, women, landless labourers and indigenous groups – they can be crucial drivers of inclusive rural transformation. Yet social protection is not enough in isolation to drive rural transformation. It must be combined with suitable macroeconomic policies, decentralized governance and institutional structures, and public–private investments in rural infrastructure, in particular smallholder agriculture.

### Social protection evolution: from protective and preventive to promotional

Social protection can be an enabler of inclusive rural transformation, but needs to be contextualized and integrated within an overall view of the complex, multi-dimensional nature of livelihoods. Not only must it be targeted and

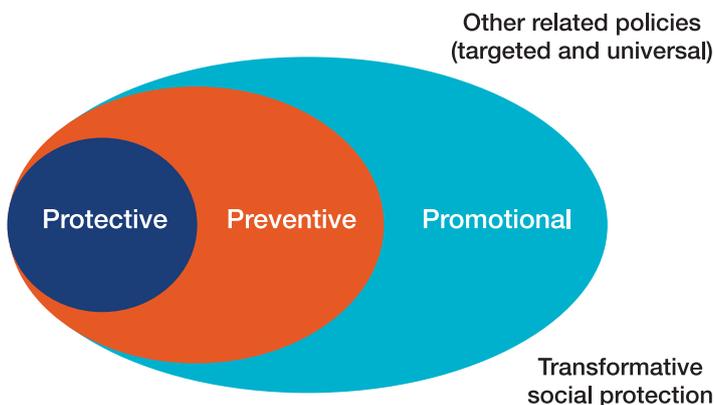
responsive to specific rural realities, it should go beyond filling shortfalls in income and consumption to promote productive investment, creating synergies with wider policies to foster economic opportunities.

Three types of social protection measures can be distinguished: Protective with the specific objective of guaranteeing relief from deprivation; preventive that directly seeks to avert deprivation; and promotional that aims to enhance real incomes and capabilities (Guhan 1994) (figure S1.1).<sup>35</sup> These measures might overlap given that social protection policies and programmes could be, at the same time, protective, preventive, and promotional.

For spurring investment, growth, and rural and structural transformation, it will be necessary to move beyond protective and preventive measures towards promotional ones. To date, protective and preventive forms remain the most common typologies of social protection, though within these there is growing awareness of the need to develop more universal, all-encompassing measures. Innovations in developing countries such as Brazil, China, Mexico and South Africa have provided new comprehensive models with important lessons – relevant for developing and OECD countries (Barnett and Chalk 2010; Devereux 2010; Ribe et al. 2010, cited by Gentilini and Omamo 2011). More pertinent is the role of broader promotional forms that address wider dimensions of economic and social empowerment. Indeed, conceptually, social protection appears to have evolved into consideration of overall social and political development, including all elements of protection against shocks.

Despite encouraging cases in some countries, such a conception is still out of line with the mainstream reality of social protection, though there is potential to build on and adapt good practices in promotional social protection. Graduation models – which integrate measures such as cash transfers, access to formal saving services, training and transfers of assets – have shown potential. These models have gained

FIGURE S1.1 Typology of social protection interventions



Source: Authors.

attention for their ability to increase the productivity of the poorest of the poor. Many of these measures have been inspired by the Bangladesh Rural Advancement Committee (BRAC) Graduation Model, initially piloted in six countries (Ethiopia, Ghana, Honduras, India, Pakistan and Peru) in 2002, which has shown encouraging signs of sustainable impacts on key elements of rural transformation (box S1.1).

To realize its potential, social protection must be embedded within a broader policy framework that encompasses a wider range of decisions that allow vulnerable populations to become full citizens. Social protection is a means to help reduce poverty, exclusion and inequality while promoting political stability and social cohesion. This approach broadens the definition of social protection with an emphasis on policies and interventions that can activate inclusiveness in different rural subsectors or populations.

### Social protection programmes often fail to reach rural people

A review of social protection programmes around the world reveals that, despite the gradual emergence of new models, few programmes are explicitly targeted or tailored towards rural people. In most countries, social protection policies are not designed to serve the rural poor nor address rural vulnerabilities and constraints.

This lack of specificity is at odds with the concentration of poverty in these areas and with the particular and pronounced risks associated with rural people and their livelihoods. The specific nature and severity of risks to rural areas have wide implications for the impact of emerging technologies and business opportunities. Without tailored social protection mechanisms, rural people may reject productivity-enhancing and income-generating transitions that are likely to enhance livelihoods

#### BOX S1.1 Assessing impacts of graduation models

The BRAC Graduation Model “Challenging the frontiers of poverty reduction” was implemented in 2002 to target 100,000 ultra-poor households in the poorest 15 districts. The BRAC methodology combines multiple interventions to enable extremely poor populations to achieve sustainable gains in income and other dimensions of well-being (MacMillan 2013).

The five main components of BRAC programmes are targeting, consumption stipend, formal saving accounts, transfer of productive assets and productive training. These graduation programmes provide a holistic set of services, including the grant of a productive asset, to the poorest households in a village (which BRAC calls the “ultra-poor”). The beneficiaries are identified through a participatory process in a village meeting, followed by a verification visit by the organization’s staff. Selected beneficiaries are then given a productive asset that they choose from a list, training and support for the asset they have chosen, general life-skills coaching, weekly consumption support for a fixed period, and typically access to savings accounts and health information or services (Banerjee et al. 2015).

Das and Misha (2010) found compelling evidence on the success of the programme in Bangladesh, noting that positive effects on income, food security, employment and asset holding remained six years after the intervention concluded. Similarly, Banerjee et al. (2015) analysed programmes in six countries,<sup>36</sup> and found that the programme’s primary goal – to substantially increase consumption of the very poor – was achieved by the end of the programme and maintained one year later. The same authors conclude that a multi-dimensional graduation approach to increasing income and well-being for the ultra-poor is sustainable and cost-effective.

Sources: MacMillan (2013); Banerjee et al. (2015); Das and Misha (2010).

in the long term, if there is a possibility of these reducing their income in the short term.

The reliance of rural people on natural resources, climates and biological processes for their livelihoods is predominantly derived from the role of agriculture and its related activities – for instance, provision of downstream services such as input and machinery supply, or upstream transport, storage and marketing services. Rural landscapes are frequently exposed to climatic and weather-related shocks, with many rural people deriving their livelihoods from some of the world's most fragile landscapes – mountainous areas, drylands and floodplains, etc. Rural producers are also vulnerable to volatile crop price fluctuations. All this means that many rural people are exposed to more severe risks than their urban counterparts, implying the need for rural-tailored programmes.

Good practices exist, but much more needs to be done to adapt and scale them up. In Ethiopia, the Productive Safety Net Programme is increasing productivity in agriculture, developing local infrastructure, and providing rural people with a minimum level of food security while reducing the need for them to sell assets to cope with shocks. The programme provides access to productive assets, technologies and credit services working in partnership with private micro-finance institutions that invest in local infrastructure while providing transfers in cash and food (Hoddinott et al. 2012; World Food Programme 2012). Another example is the *Juntos* (Together) cash transfer programme in Peru, which is targeted at rural areas most affected by the political violence that hit the country between 1980 and 2000, and is combined with the *HakuWiñay* (Let's Grow) programme that develops productive capacities, rural entrepreneurship and access to financial services.

### Social protection enables rural transformation

Social protection can promote inclusive rural transformation in many ways, though evidence remains scarce (particularly at the macro level) on concrete impacts. Inclusive

rural transformation is necessarily dependent on the capacities of rural people to invest in different forms of capital, and on the prevalence of opportunities to translate this access into improved incomes and livelihoods. This prevalence is largely determined by wider policies and institutional frameworks that must be combined with social protection programmes to bring about an inclusive rural transformation. Social protection programmes induce investment in capital by rural people as follows:

- *Human capital*: Better health and nutrition, reduced stunting, and improved school enrolment and performance have all been tied to effective social protection programmes, in particular where transfers have been targeted at women (ODI 2011; FAO 2015).
- *Physical capital*: Productive investment is induced in smallholder households by social protection programmes, with significant positive relationships between the receipt of social assistance and capital accumulation (Hidrobo et al. 2014, cited by FAO 2015).
- *Financial capital*: Social protection is a key tool for addressing savings and credit difficulties faced by rural households as a result of the seasonal nature of agricultural-related income sources and rural labour market demand. Evidence points to positive impacts of social protection on both savings and access to credit (Ahmed et al. 2009, for Bangladesh; also Evans et al. 2014; Daidone et al. 2014).
- *Social capital*: Increased participation in and re-entry into social networks has been linked to social protection programmes (for Paraguay, see Soares et al. 2008, cited by FAO 2015). These networks can in turn help rural households to manage risks and credit constraints.
- *Natural capital*: The increased livelihood security provided by social protection reduces the short-term imperative to exploit environmental resources unsustainably (see Spotlight 7).

In more general terms, social protection enables households to favour riskier, higher-return

investments by alleviating concerns over capacity to meet short-term basic needs (FAO 2015).

Improvements in rural employment have also been encouraging, creating direct jobs (box S1.2) and prompting indirect knock-on effects on labour markets (Samson et al. 2015). Also significant is the economic empowerment of women associated with gender-sensitive targeting, as well as documented impacts across the health and education dimensions of human capital. This has been shown to contribute to the growth of new businesses and productive income-generating activities (World Bank 2012; de la O Campos 2015).

Multiplier benefits can result from a combination of higher levels of capital combined with links to wider policies and investments that create commercial opportunities for rural people. Increases in disposable income create additional demand for local goods and services, in particular in the non-farm economy (because households are able to devote a greater share of their income to non-food purchases), which contribute to virtuous circles where farm and non-farm growth reinforce each other (Haggblade et al. 2007). There is a wealth of evidence to support the hypothesis that, in the right conditions,

social protection can be a crucial contributor to inclusive rural transformation.

### Implementation challenges

Two key challenges concerning social protection relate to its affordability and how it is targeted. Many analyses conclude that social protection is affordable, but reiterate issues of defining affordability and ensuring sustainability and country ownership. Certain redistribution and financing capacities undoubtedly prevail in many countries: Ravallion (2009, cited by Gentilini and Omamo 2011) found that the average marginal tax rate needed to close the poverty gap at US\$2/day in a sample of 10 selected countries exceeds 80 per cent. Given this, it is unsurprising that domestic financing in many social protection programmes is not greater than 5 per cent (McCord 2009, cited by Gentilini and Omamo 2011). This raises certain questions on national ownership of social protection and sustainability. More encouragingly, however, Ravallion (2009) found that affordability starts to increase rapidly with sufficient economic growth, suggesting the possibility of mutually reinforcing inclusive growth and redistribution.

#### BOX S1.2 Employment generation social protection programmes

Many social protection programmes have been based on generating employment, chiefly through public works initiatives. The largest and best known is the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in India.

The MGNREGA aims at two interlinked goals. The first is to ensure livelihood security of rural residents by providing at least 100 days of guaranteed wage employment in a fiscal year to every household with an adult member willing to do unskilled manual work for a minimum wage. The second is to mobilize surplus labour in rural areas to generate rural economic growth. At least a third of the beneficiaries of the scheme must be women. The Act came into force on 2 February 2006 and was implemented in phases to cover all rural districts within three years. At its peak in 2010/11, it covered more than 55 million rural households, about a third of all rural households, generating 2.6 billion days of employment that year (FAO 2015).

The Act raised agricultural wages significantly, especially for women (Berg et al. 2012; Zimmermann 2012). On asset creation, areas with poorer results are cited as lacking technical staff (Gupta et al. 2012; Narayanan 2014).

Sources: FAO (2015); Berg et al. (2012); Gupta et al. (2012); Zimmermann (2012); Narayanan (2014).

This suggests that progressive structural and rural transformations provide opportunities to enhance the breadth and depth of rural transformation programmes. In advanced economies such as the Nordic countries in Europe, social protection is integrated into general social programmes such as health, education and pensions for old and/or disabled people. Such integration has started in China and India.

Targeting is also controversial. While multiple targeting methods exist, social protection programmes have been increasingly dominated by administrative-based targeting, such as means testing. These methods have been criticized for their perceived arbitrariness (particularly where thresholds are used to determine programme eligibility) and, sometimes, contributions to social tensions. They are particularly troublesome where the distinction between vulnerability and poverty profiles are blurred, as in rural areas where poverty is widespread (Gentini and Omamo 2011). Social tensions have been reported in recipient areas between beneficiaries and non-beneficiaries, including Ghana, Kenya, Lesotho, Mexico, United Republic of Tanzania and Zimbabwe (OPM 2013a, 2013b; Barca et al. 2015; Pellerano et al. 2014; Evans et al. 2014; and Adato et al. 2000, cited by FAO 2015). Reaching vulnerable households without creating such tensions is a serious challenge, requiring balancing targeting methods.

Other areas for reflection surround philosophical and political divergences over the fairness and desirability of income redistribution that is associated with social protection, as well as more operational issues of beneficiary verification, programme enrolment and exit strategies, and the appropriateness of cash versus food assistance.

### Implications for policy

From a policy perspective, key insights include:

- Social protection is necessary but not sufficient for inclusive rural transformation. It can be expected to contribute when it simultaneously combines the three interventions (protective, preventive and promotional) on the same territory, taking into account context-related opportunities. However, such initiatives need to be integrated with broader eradication policies, and with strong political commitment. They may also be difficult to implement in lagging countries owing to budget constraints.
- Rural social protection has to be defined, reshaped and implemented based on context-specific factors, given that rurality imposes challenges on these interventions. These factors include structural economic dynamics, institutional environment, and social relations' vulnerabilities and opportunities. Rural sensitivities should be central to the design, implementation and evaluation of interventions.
- Methods exist for integrating social protection and agriculture programmes. Linking public expenditures on agriculture to social protection programmes can not only further growth linkages and transformation, but also enhance inclusiveness.
- Social protection programmes targeted at women show greater benefits, particularly on key inclusion criteria such as child health and nutrition. These outcomes are especially important because maternal and child malnutrition perpetuate exclusion and poverty from generation to generation – undermining the capital needed to drive rural transformation, as well as the inclusivity of the process.

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## CHAPTER 2

# Structural and rural transformation in Asia and the Pacific



## Summary

The Asia and Pacific (APR) region has witnessed remarkable growth in gross domestic product (GDP) in recent decades, averaging an annual 4.5 per cent in 1980-2000 and 4.4 per cent in 2000-2013, compared with 2.6 per cent and 2.0 per cent for the rest of world over these periods. This rapid growth lifted its share of global GDP from 18.1 per cent in 1980 to 27.8 per cent in 2013. Although growth shows great variation across countries, its overall pace underpins a gradual convergence of lower middle-income countries towards higher middle-income countries in per capita terms, with a steep decline in poverty and malnourishment, but rising inequality and growing pressure on land, natural resources and the environment.

The rural sector in APR has been gradually transforming, moving from largely cereal- or grain-based production to higher-value production, such as livestock and fisheries. Driven mainly by rising income and urbanization, food-consumption patterns have been changing, shifting from starchy staples and rice towards fruit and vegetables, livestock and dairy products, fish, sugar and oils. The reduction in import barriers in developed countries has encouraged trade in these commodities. Moreover, the growing demand for livestock products and the rising costs of fossil fuels, combined with concerns about the environment and energy self-sufficiency, have spurred production of crops for animal feed and biofuels. Off-farm employment in the region has also expanded significantly.

Processes of rural transformation in the region have coincided with the deepest and fastest structural transformation in developing countries. APR displays the usual pattern of structural transformation in which labour productivity in agriculture is lower than it is in other sectors of the economy, rendering the declining share of agriculture in GDP lower than the labour share. There is a strong positive relationship between agriculture and structural transformation. Countries with higher agricultural productivity or production growth also have higher overall economic growth and structural transformation than those with lower

agricultural growth, reflecting the linkages and multiplier effects from agricultural productivity and agricultural growth with structural transformation. These include releasing surplus labour for industry and services, producing low-cost food, supplying exportable commodities that can help finance imports of key technology packages and capital equipment, and raising rural incomes that can increase demand for industrial products. Agrifood supply chains in Asia are shifting from involving multiple vertical linkages to fewer intermediaries over longer distances and closer horizontal connections. An important driver is the growing number of women entering the urban workforce, particularly in services.

Analysis of data from nine countries in the region confirms the report's major hypotheses. Specifically, no country has reduced rural poverty fast without both fast structural transformation and fast rural transformation. No country has reduced rural poverty slowly in the presence of both fast structural transformation and fast rural transformation. Countries that have gone through both fast structural transformation and fast rural transformation have also reduced rural poverty quickly. Countries that have not gone through both fast structural transformation and rural transformation have not reduced rural poverty quickly. Countries that have gone through either significant structural transformation or rural transformation have mixed outcomes, reducing rural poverty either quickly or slowly. Case studies of China, India, the Philippines and Viet Nam confirm that policies, institutions and investments are fundamental to the speed and inclusiveness of rural transformation. The design and implementation of institutions, policies and investments in each of these countries have influenced the path and speed of rural transformation and their outcomes for inclusion and poverty reduction. In all four countries, land reform, rural investments and sectoral policies have been decisive.

Countries with fast inclusive and sustainable rural transformation face the challenge of sustaining speed and outcomes. While labour-intensive manufacturing will

remain an important source of inclusive growth for this type of country, strengthening inclusive institutions, policies and investments is a priority, as is adapting them to new circumstances. Enhancing sustainable agricultural development is essential, with a particular emphasis on overcoming growing stresses from water and land degradation. Countries with relatively slow and non-inclusive rural transformation should primarily focus on overcoming the binding economic, institutional and political constraints to achieving faster structural transformation and rural transformation and to reducing poverty. They should consider comprehensive measures to align institutions, policies and investments, so as to maximize their impact on stimulating sustainable and inclusive growth.

For countries showing mixed results on structural transformation, rural transformation and poverty reduction, the role of agricultural and rural development remains central to boosting both structural and rural transformation. Countries with slow structural transformation should prioritize job creation in the rural non-farm economy, and in services and industry in urban and semi-urban settlements – a major area of action. Countries with slow rural transformation should consider enhancing their institutions and policies to enable the rural poor to access agricultural land and credit, and focus investments on agricultural technology and rural infrastructure. In addition to exploring decentralization, countries should ensure that appropriate market and pricing policies are in place to foster agricultural growth and, thus, rural transformation and structural transformation.

## Structural and rural transformations in Asia and the Pacific

### Recent economic and social trends

APR<sup>37</sup> is an extremely diverse region in its demography, economic and social development, natural resources, physical landscapes, and cultural and historical legacies. Around 3.8 billion people inhabit the 29 countries covered by this chapter, with populations ranging from 0.1 million to 1,360 million, and national population densities from as low as two

people per sq. km of land to as high as 1,200. China and India together account for more than 60 per cent of the region's population. More than half the region's population live in rural areas, most of whom are still engaged in agriculture. Urbanization rates vary widely by subregion. More than 70 per cent of the Pacific's population live in urban areas,<sup>38</sup> while in South and South-West Asia only 34 per cent of the population do so (ESCAP 2013).<sup>39</sup>

The region has witnessed remarkable growth in GDP in recent decades, averaging an annual 4.5 per cent in 1980-2000 and 4.4 per cent in 2000-2013, compared with 2.6 per cent and 2.0 per cent in the rest of world over these periods.

This rapid growth has lifted its share in global GDP from 18.1 per cent in 1980 to 27.8 per cent in 2013.<sup>40</sup> Such performance was driven by China and India, the region's two largest developing economies, which achieved together annual growth of 7.4 per cent in 2011-2015. Yet while countries like Afghanistan, the Lao People's Democratic Republic, Mongolia, Myanmar, Papua New Guinea and Timor-Leste grew at above 7 per cent a year, others, including Malaysia, Nepal, Pakistan and Thailand, all grew at below 5 per cent. The Pacific Islands as a subgroup also registered, in comparison, slower GDP growth in 2009-2013 (IFAD 2015).

Although growth showed great variation across countries, its overall pace underpinned a gradual convergence of lower middle-income countries towards higher middle-income countries in per capita terms. Bangladesh and Myanmar became lower middle-income countries, and Mongolia an upper middle-income country. Afghanistan, Cambodia and Nepal are still low-income economies.

Growth in APR has generally been associated with a steep decline in poverty and malnourishment. The poverty rate in the region's developing countries fell from about 71 per cent in 1981 to 15 per cent in 2011, based on the purchasing power parity (PPP) US\$1.25-a-day poverty yardstick, and from 91 per cent in 1981 to 40 per cent in 2011, based on the PPP US\$2-a-day yardstick (World Bank 2015c). As with growth rates, poverty reduction

has progressed unevenly across the region, with China and India accounting for most of the region's overall reduction, in view of their large populations.

The reduction in poverty went hand in hand with the rapid decline in the proportion of the hungry, which was estimated to have fallen by more than 0.5 per cent annually, from 25 per cent in 1990 to 12 per cent in 2014 (FAO et al. 2015). South-East and East Asia led the downward trend, with 69 per cent and 59 per cent reductions in the proportion of the hungry, respectively. Progress in South Asia was slower, its proportion of poor people declined by 34 per cent over the period. India only marginally reduced its share of underweight children under 5 years old, in spite of strong economic growth.

Despite these gains, APR is still home to the largest number of the world's poor, with about 560 million (55 per cent of the global total) living below the US\$1.25-a-day poverty line in 2011 and 76 per cent of them living in rural areas. Poverty in the region is therefore largely a rural phenomenon.

The impact of economic growth on the pace of poverty reduction has been held back by widening inequality in income distribution in most Asian countries over the past few decades. The ratio of the share of total income accruing to the richest 10 per cent of the population to that of the 40 per cent poorest (the Palma Index) has, for example, climbed from 1 to 1.3 in Bangladesh (1992-2009), from 1.5 to 2.1 in China (1994-2009), and from 1.1 to 1.5 in Indonesia (1993-2010). Although rural wages in most Asian countries have grown (ODI 2014), wages in other sectors, particularly in manufacturing, have grown even faster (ILO 2012). Inequality was reinforced, too, by economic structures and social practices that disproportionately affect women, indigenous populations and ethnic minorities, as reflected by persistent disparities in access to land, asset ownership, credit, education, health services and other productive assets.

### **Rural transformation**

Agricultural growth has been remarkable in the region, particularly since the 1970s when the Green Revolution hugely boosted grain

productivity and moved the region to a new stage of agricultural development (Ruttan 1977; Barker et al. 1985). More than 2.2 billion people in the region rely on agriculture for their livelihoods. Agricultural GDP in developing Asia surged from US\$2.4 trillion in 2000 to US\$10.0 trillion in 2011 (from US\$1.2 trillion to US\$2.6 trillion, excluding China). In 2007, about 87 per cent of the world's 500 million small farms (those smaller than 2 ha) were in Asia and the Pacific, and in many countries, average farm size continues to diminish.

From the early 1980s, investment in irrigation and increased use of chemical inputs further stimulated agricultural growth (World Bank 2008). The average annual growth rate of agricultural GDP accelerated from 3.4 per cent in the 1980s and 1990s to 3.8 per cent in the 2000s. (In 2013 it was particularly strong in the Lao People's Democratic Republic, Mongolia and the Philippines.) But these increases were accompanied by a decline in the share of agricultural value added in GDP, a sign typical of economies undergoing transformation. Since 1990, labour productivity growth in Asia has been robust, recording an annual average of 2.2 per cent, with China, the Republic of Korea and Malaysia leading the region and Bhutan, Nepal and the Philippines lagging behind (IFAD 2015).

The rural sector in APR has been gradually transforming, moving from largely cereal- or grain-based production to higher-value production, such as livestock and fisheries. Driven mainly by rising income and urbanization, food-consumption patterns have been changing, shifting from starchy staples and rice towards fruit and vegetables, livestock and dairy products, fish, sugar and oils. The reduction in import barriers in developed countries has encouraged trade in these commodities. Moreover, the growing demand for livestock products and the rising costs of fossil fuels, combined with concerns about the environment and energy self-sufficiency, have spurred production of crops for animal feed and biofuels (IFAD 2014).

In response to changes in food demand, the share of non-cereal crops in total crop area rose from 36 per cent in 1980 to 50 per cent in

2013 in APR (FAO 2014). A similar significant increase also occurred in livestock. The share of non-cereal production (non-cereal crops plus livestock) in total value added in agriculture (crops plus livestock) rose from 63 per cent in 1980 to 77 per cent in 2013.

Looking at nine countries with reliable data, and measuring rural transformation as the annual growth of agricultural labour productivity, widely varying speeds of rural transformation are seen in the region, ranging from 0.98 per cent per year for Pakistan to 3.83 per cent per year for China (table 2.1).

Off-farm employment in the region has also expanded significantly. Misra (2013) estimates that the non-farm sector's share in total rural employment in India had risen from 19 per cent in 1983 to 22 per cent in 1993-1994 and to 32 per cent in 2009-2010. In Pakistan, more than half the rural workers are employed away from farms. The rural non-farm sector is an important pathway for poverty reduction and employment (Farooq 2014).

The speed of rural transformation through rising off-farm employment depends heavily on supply and demand for labour (push and pull factors). In APR, with improving agricultural productivity since the 1970s (owed primarily to the Green Revolution, consistent progress in agricultural technology and marketing reforms), labour has been released from farming in nearly all developing countries. At the same time, urbanization and industrialization have raised the demand for rural labour. However, economies' ability to absorb surplus agricultural labour in rural and urban areas differs, influencing the path and speed of rural transformation in each country (Jatav and Sen 2013).

Attractive opportunities have opened up in agriculture, leading to large investments and competition for land (rubber plantations in Cambodia, palm oil production in Indonesia, etc.). These developments have combined with high population density to generate significant land scarcity, which creates major obstacles to adoption of heavy mechanization and labour-saving technologies. Still, new sources of economies of scale have emerged,

reflecting technical change (zero tillage and biotechnology), new markets (contracts with supermarket chains for large continuous and uniform deliveries) and institutional changes (such as access to international finance) (IFAD 2011).

### Structural transformation

During the last few decades, the processes of rural transformation in the region have coincided with the deepest and fastest structural transformation in developing countries (IFAD 2014). APR displays the usual pattern of structural transformation in which labour productivity in agriculture is lower than it is in other sectors of the economy, rendering the declining share of agriculture in GDP lower than the labour share. The difference between the two shares (the blue dots in figure 2.1) declines with the rising per capita income until it is almost eliminated (figure 2.1).

Agriculture's share in GDP has fallen far faster (about 2.5 per cent a year since the 1970s, faster than the world average), than its share in total employment (1.7 per cent a year, slower than the world average). The divergence between labour productivity in agriculture and in the rest of the economy has thus increased in the region, widening more than in the rest of the world. This divergence is an important component of the increasing inequality in the region's income distribution, which is particularly acute for middle-income countries facing a difficult trade-off between increasing farmers' incomes and keeping food prices low and stable (IFAD 2015).

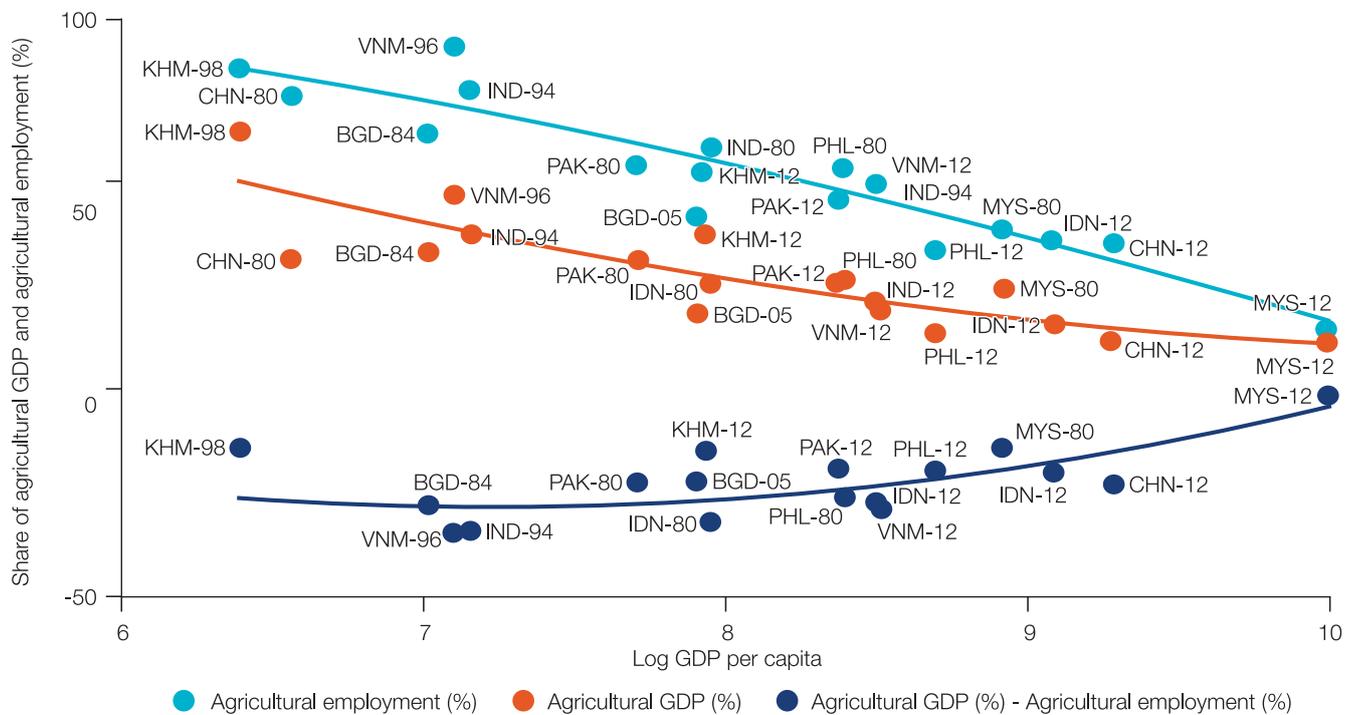
There is a strong positive relationship between agriculture and structural transformation. Countries with higher agricultural productivity or production growth (China, Viet Nam and Cambodia) also have higher overall economic growth and structural transformation than those with lower agricultural growth (the Philippines, Bangladesh and India), reflecting the linkages and multiplier effects between agricultural productivity, agricultural growth and structural transformation. These include releasing surplus labour for industry, construction, services, producing low-cost food that allows wages for

TABLE 2.1 Agricultural labour productivity, nine countries

Country	Agricultural labour productivity				Data years	
	Added value (constant 2005 US\$)		Annual change (%)		Base year	End year
	Base year	End year	National	Regional average		
Bangladesh	267.0	602.0	3.44	2.21	1990	2014
China	317.0	754.0	3.83	2.21	1990	2013
India	459.0	689.0	1.71	2.21	1990	2014
Indonesia	613.0	1 079.0	2.38	2.21	1990	2014
Cambodia	349.0	514.0	1.86	2.21	1993	2014
Philippines	826.0	1 152.0	1.39	2.21	1990	2014
Viet Nam	266.0	489.0	2.57	2.21	1990	2014
Lao PDR	345.0	522.0	1.74	2.21	1990	2014
Pakistan	857.0	1 083.0	0.98	2.21	1990	2014

Note: different base year for Cambodia is due to lack of data.  
 Source: World development indicators (World Bank 2015)

FIGURE 2.1 Convergence of shares of agricultural GDP and employment in APR, 1980 and 2012



BGD = Bangladesh, CHN = China, IND = India, KHM = Cambodia, MYS = Malaysia, PAK = Pakistan, VNM = Viet Nam. Note: the figure is based on data for two years (the early and recent years) from each country.  
 Note: Log GDP per capita is a logarithmic transformation of the level of gross domestic product of the country (constant 2011 purchasing power parity international dollars) in the year of reference.  
 Source: IFAD, based on World development indicators (World Bank 2015)

workers in industry to be kept down, producing fibre and other crops that can be inputs to production in other parts of the economy, supplying exportable commodities that can help finance imports of key technology packages and capital equipment, and raising rural incomes that can increase demand for industrial products.

These multiplier effects of agriculture in industry and services have been well documented (Johnston and Mellor 1961; Schultz 1964; Johnston 1970; Graff et al. 2006; Timmer 2009). One example, alongside increased demand for high-value and processed food, is the rapid emergence of better-integrated agricultural supply chains and supermarkets. Agrifood supply chains in Asia are shifting from involving multiple vertical linkages to fewer intermediaries over longer distances and closer horizontal connections. An important driver is the growing number of women entering the urban workforce, particularly in services (IFAD 2014).

### **Structural transformation, rural transformation, and rural poverty reduction**

The impact of structural transformation on rural poverty reduction differs among countries due to the degree of inclusiveness of growth (Balisacan and Fuwa 2003; Huang et al. 2008b; Timmer 2008; World Bank 2008). The speed of structural transformation also matters greatly for rural poverty reduction. The relationship between the two elements might be taken as the inverse of the average annual change in the share of non-agricultural GDP and average annual change in rural poverty (figure 2.2).

The coordinate (-1.90, 0.57) is the mean for the nine countries. The countries in the bottom-right quadrant showed slow structural transformation and slow rural poverty reduction in the past two decades (against the regional averages). They include the Philippines, Pakistan, India and Bangladesh. Viet Nam, China, the Lao People's Democratic Republic and Cambodia, in the top-left quadrant, had both fast structural transformation and fast rural poverty reduction, again, compared to regional averages. Indonesia is an exception, for despite its slower structural transformation than the mean of all countries,

the rate of its rural poverty reduction was above the regional average. Timmer (2004) argues that Indonesia's long-run pro-poor growth record is among the best in Asia owing to the country's efforts to balance growth and distribution during its structural transformation.

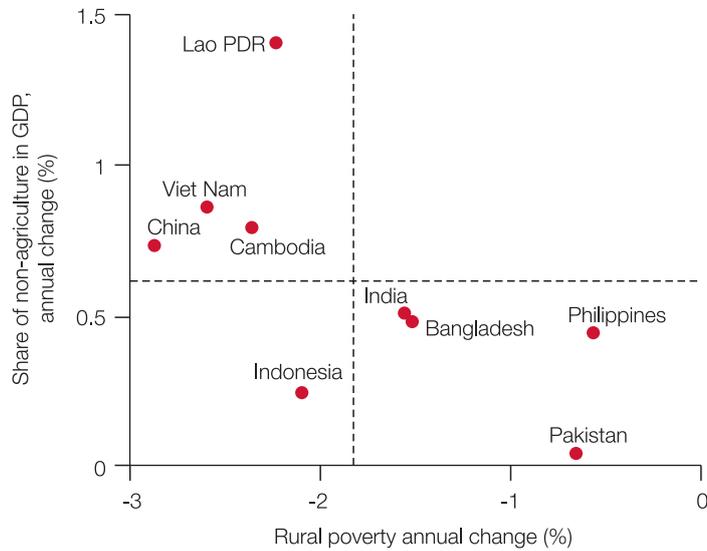
As with structural transformation, the speed of rural transformation is also positively correlated with the extent of poverty reduction (figure 2.3). Viet Nam, China and Indonesia, for example, in the top-left quadrant from the coordinate (-1.90, 2.22) had faster rural transformation and faster rural poverty reduction. On the other side of the line, the Philippines, Pakistan, and India had slower rural transformation with slower annual poverty reduction. Bangladesh had fast rural transformation but, compared to the nine countries, showed slower rural poverty reduction, which might be related to its slow structural transformation. Cambodia and the Lao People's Democratic Republic, with slower rural transformation, have shown faster rural poverty reduction, which also may be largely due to their fast structural transformation.

Combining the countries into categories based on their speed of structural transformation, rural transformation, and rural poverty reduction, yields the results in table 2.2. In summary:

- No country has reduced rural poverty quickly without both fast structural transformation and fast rural transformation (the bottom-left corner of the table is empty).
- No country has reduced rural poverty slowly in the presence of both fast structural transformation and fast rural transformation (the top-right corner is empty).
- Countries that have gone through both fast structural transformation and fast rural transformation have also reduced rural poverty quickly (China and Viet Nam).
- Countries that have not gone through both fast structural transformation and rural transformation have not reduced rural poverty quickly (Philippines, Pakistan and India).
- Countries that have gone through either significant structural transformation or rural

FIGURE 2.2 Changes in non-agricultural GDP and in rural poverty, nine countries

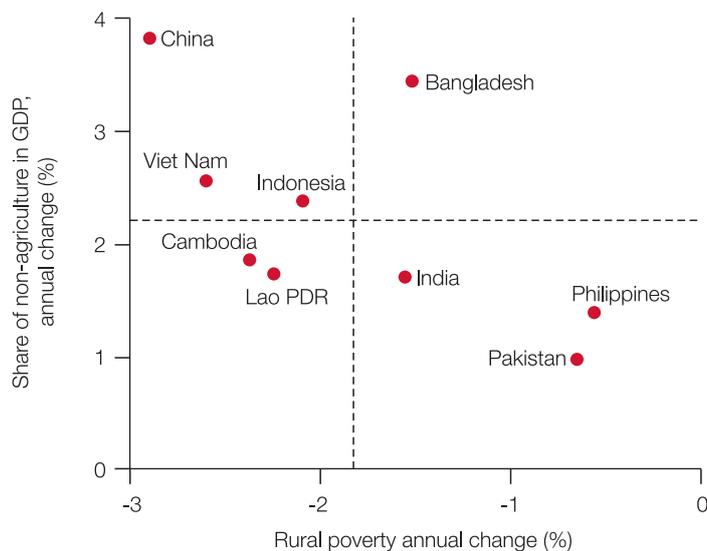
Structural transformation and rural poverty reduction, 1990s-2010s



Note: the simple means for “average annual change in the share of non-agricultural GDP” and “average annual change in rural poverty rate” of the nine countries are 0.57 (as indicated by vertical dotted line) and -1.90 (as indicated by horizontal dotted line), respectively.  
Source: IFAD, based on World Bank (2015)

FIGURE 2.3 Rural transformation and rural poverty reduction, nine countries

Rural transformation and rural poverty reduction, 1990s-2010s



Note: the simple means for “average annual growth of agricultural labour productivity” and “average annual change in rural poverty rate” of the nine countries are 2.22 (as indicated by horizontal dotted line) and -1.90 (as indicated by vertical dotted line), respectively.  
Source: IFAD, based on World Bank (2015)

transformation have mixed outcomes, reducing rural poverty either quickly (Indonesia, Lao People’s Democratic Republic and Cambodia) or slowly (Bangladesh).

The associations between structural transformation, rural transformation and poverty reduction are much sharper in the APR region than in other regions (discussed in the Introduction), probably because economic growth, structural transformation and rural transformation were, on average, faster than elsewhere. This is quite important, as in other regions fewer of these expected associations have been confirmed.

Based on these results, it is possible to divide the nine countries into three groups:

**Group I:** countries with fast structural transformation, rural transformation and rural poverty reduction (China and Viet Nam). This group is a classic but much more rapid structural transformation and rural transformation than the “classic” transformation experienced by OECD countries in the twentieth century. Successful rural transformation in these countries increases structural transformation and vice versa as rural transformation and structural transformation are strongly linked. They also significantly reduce rural poverty.

**Group II:** countries slow in structural transformation, rural transformation and poverty reduction (the Philippines, Pakistan and India). Slow structural transformation and slow rural transformation contribute to slow rural poverty reduction.

**Group III:** countries with mixed experiences: (i) fast in structural transformation but slow in rural transformation and fast (but less fast than group I, or moderate) in rural poverty reduction (Lao People’s Democratic Republic and Cambodia), (ii) slow in structural transformation but fast in rural transformation and fast (but less fast than group I) in rural poverty reduction (Indonesia) and (iii) slow in structural transformation and slow in rural poverty reduction (Bangladesh).

TABLE 2.2 Distributions of countries' outcomes for transformation and inclusion in Asia and the Pacific

Speed of structural and rural transformation		Rural poverty reduction	
		Fast	Slow
Fast structural transformation	Fast rural transformation	China, Viet Nam	
	Slow rural transformation	Lao PDR, Cambodia	
Slow structural transformation	Fast rural transformation	Indonesia	Bangladesh
	Slow rural transformation	Philippines, Pakistan, India	

Note: fast structural transformation refers to countries with above-average rates of structural transformation. Slow structural transformation countries are those with rates below average for their regions. Rural transformation and poverty reduction are also measured relative to averages for each region.

Source: Authors.

### Patterns of transformation: four country case studies

To build an understanding of factors driving these results, developments over the last decades in four countries from these groups are examined: China and Viet Nam from group I and India and the Philippines from group II. At issue is how initial conditions and different institutions, policies and investments have shaped structural transformation and rural transformation processes. Together, these countries account for three-quarters of the region's population and thus constitute a powerful lens through which to build insight into structural and rural transformation in the region.

#### Initial conditions and key trends

Table 2.3 presents the evolution of key indicators of initial conditions in the four countries, most of them over the last 50 years. On arable land, all four countries were similarly constrained in 1960s. Per capita arable land was less than 0.2 hectares in China and Viet Nam, while the Philippines and India had slightly larger units per capita (0.25 and 0.35 ha, respectively). With rising populations, the amount of arable land per person has been falling in all four countries. Similarly, the average farm size has been falling. Currently, average farm size ranges from less than 1 hectare in China and Viet Nam to

1.2 hectares in India and nearly 2 in the Philippines (FAO 2015).

While the size of agricultural holdings has been decreasing, the share of cultivated land equipped for irrigation has risen sharply, by 44 and 35 per cent, in China and India between 1990 and 2010. In the same period, the Philippines saw a decrease on this indicator from an already low share (15.7 to 14.4 per cent), while Viet Nam maintained its 45.4 per cent. These differences are important because the expansion of irrigated land is a source of growth in crop production and land productivity.

China and India are the world's most populous nations, together accounting for some 37 per cent of the global population in 2013 (WDI 2015). In the Philippines, the urban population share was already 31 per cent in 1961, nearly twice that in the other three countries. By the early 2010s, the urban population exceeded the rural population in China, and accounted for about one third of the total population in India and Viet Nam, and nearly half the population in the Philippines.

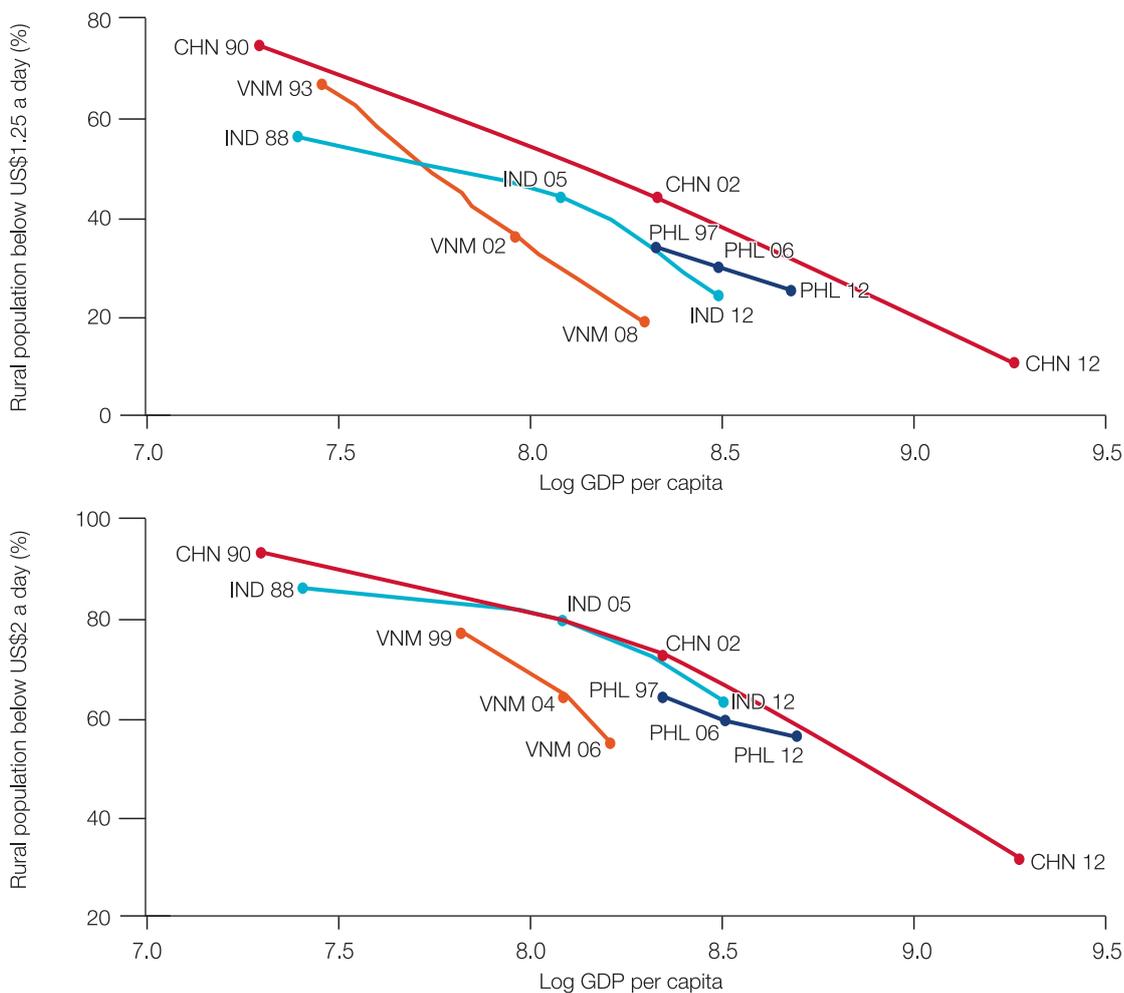
In rural poverty (figure 2.4), the steepest falls in the US\$1.25 or US\$2-a-day metric over the past two decades have been in China and Viet Nam. Economic development has differed in the four countries. Five decades ago, GDP per

TABLE 2.3 Major indicators: initial conditions and trends, four countries

	China	Viet Nam	India	Philippines
<b>Per capita arable land (ha)</b>				
1961	0.16	0.18	0.35	0.25
1980	0.10	0.12	0.24	0.20
2000	0.10	0.10	0.16	0.13
2012	0.09	0.11	0.14	0.11
<b>Share of cultivated land equipped for irrigation (%)</b>				
1990	37.9	45.4	29.1	15.7
2000	41.7	44.9	35.5	14.0
2010	54.5	45.4	39.4	14.4
<b>Share of urban population (%)</b>				
1961	17.2	15.0	18.0	30.6
1980	20.3	19.2	23.1	37.5
2000	36.8	24.4	27.7	48.0
2013	53.8	32.3	32.0	49.3
<b>GDP per capita (PPP 2011 constant international US\$)</b>				
1990	1 490	1 500	1 780	4 010
2000	3 610	2 650	2 550	4 240
2010	9 230	4 490	4 550	5 610
2013	11 500	5 120	5 240	6 330
<b>Agricultural GDP share (%)</b>				
1960	40 <sup>a</sup>		43	27
1980	30		35	25
2000	15	23	23	14
2013	10	18	18	11
<b>Industrial GDP share (%)</b>				
1960	31 <sup>a</sup>		19	31
1980	48		24	39
2000	46	34	26	34
2013	44	38	31	31
<b>Service GDP share (%)</b>				
1960	29 <sup>a</sup>		38	42
1980	22		40	36
2000	39	43	51	52
2013	46	43	51	58
<b>Gini coefficient</b>				
1984/85	27.7		31.1	41.0
1993/94	35.5	35.7	30.8	42.9
2002/03	42.6	37.6	-	44.5
2011/12	37.0/47.6 <sup>b</sup>	35.6	33.6	43.0
<b>Share of public agricultural expenditures in agricultural GDP (%)</b>				
1980	10.9		2.4	3.2
1990	6.1	2.3	4.5	6.1
2000	8.2	8.5	3.8	7.4
2010	20.1	6.5	5.9	8.0

<sup>a</sup> Average for 1961-1963. <sup>b</sup> 37.0 based on WDI (2015) and 47.6 based on the National Bureau of Statistics of China (2013).  
Sources: World development indicators (World Bank 2015); FAO (2015); IFPRI (2013); NBSC (2013).

FIGURE 2.4 GDP per capita and rural poverty rate, four countries, circa 1998-2012



CHN = China, IND = India, PHL = Philippines, THA = Thailand, VNM = Viet Nam.

Note: economic development has differed in the four countries. Five decades ago, GDP per capita in the Philippines was more than seven times that of China and nearly three times that of India. Since 1980, India and Viet Nam have narrowed their income gap with the Philippines. In the early 2000s, China's per capita GDP surpassed that of the Philippines.

Note: Log GDP per capita is a logarithmic transformation of the level of gross domestic product of the country (constant 2011 purchasing power parity international dollars) in the year of reference.

Source: IFAD, based on World Bank data.

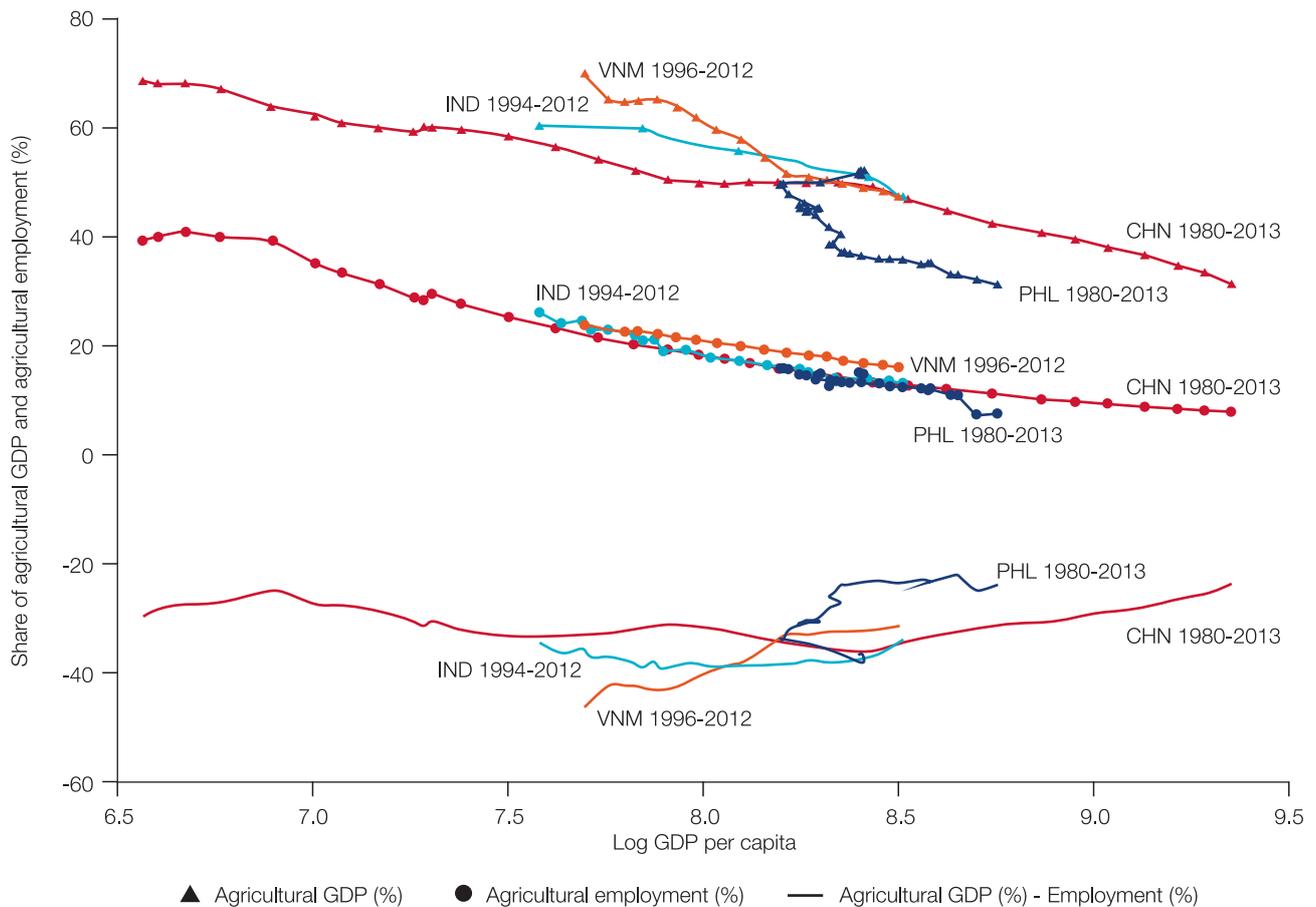
capita in the Philippines was more than seven times that of China and nearly three times that of India. Since 1980, India and Viet Nam have narrowed their income gap with the Philippines. In the early 2000s, China's per capita GDP surpassed that of the Philippines.

Structural transformation (measured as changes in share of agricultural GDP and agricultural employment) was much faster in China and the Philippines (1980-2013) when compared to that of India and Viet Nam (mid-1990s-2012).<sup>41</sup> Economic growth in China was much faster than in the Philippines. Viet Nam had faster structural transformation

and economic growth than India (figure 2.5). A larger change in the *x*-axis reflects faster economic growth (in GDP per capita) and the larger change in the *y*-axis reflects faster structural transformation.

Among the four countries, China had the fastest structural transformation, with agriculture's share in GDP falling by some 30 percentage points during 1960-2013 (or 20 percentage points since 1980; see table 2.4). In 2013, the share of agriculture in China's GDP was similar to that of the Philippines (10 and 11 per cent, respectively), but the speed of structural transformation in the Philippines has

FIGURE 2.5 Structural transformation and GDP per capita, four countries



CHN = China, IND = India, PHL = Philippines, THA = Thailand, VNM = Viet Nam.  
 Note: Log GDP per capita is a logarithmic transformation of the level of gross domestic product of the country (constant 2011 purchasing power parity international dollars) in the year of reference.  
 Source: IFAD, based on World development indicators (World Bank 2015).

been moderate since 1980. (In 1960, its share of agricultural GDP was already much lower than China, India and Viet Nam.)

The cases of China and the Philippines help to show how the path and speed of structural transformation matter also for inclusive growth. China has undergone significant structural transformation and massive job creation for rural labour in its market reform and trade liberalization since the 1980s. This includes the rapid growth of labour-intensive manufacturing in rural (including rural township and village enterprises) and urban areas in the 1980s and 1990s, and even faster growth in manufacturing and services since China joined the World Trade Organization in 2001. Quick manufacturing growth created not only jobs for rural surplus labour but also high demand for services.

Therefore, despite the rapid expansion of manufacturing, the share of industrial GDP declined from 48 per cent in 1980 to 44 per cent in 2013 because of much faster growth in labour-intensive service sectors, whose share of total GDP increased from 22 per cent to 46 per cent over the period. In 2014, China had 294 million rural labourers (more than half the rural labour force) who worked more than six months in off-farm employment. More than 60 per cent of them were migrants, most of them working in urban areas (NBSC 2015).

The Philippines went through a more moderate process of structural transformation over 1960-1980 as the share of agricultural GDP declined by only two percentage points, from 27 per cent in 1960 to 25 per cent in 1980. Only after 1980 did the economy start to transform

moderately (see table 2.4). With slow growth in manufacturing and fast population growth, the service sector has become a major absorber of surplus rural labour, and the unemployment rate has stayed high. The lack of structural transformation in the Philippines is largely explained by persistent policy distortions (macro policy, import substitution, inequality of land distribution, etc.) that have slowed the growth of agriculture and manufacturing (World Bank 2013). The Philippines “missed a crucial step in the structural transformation process: the rise of manufacturing and the associated successful job creation in urban areas,” a major reason for diminished economic transformation and inclusive growth (World Bank 2013).

The share of non-cereal agricultural GDP shows correlation with the progress of rural poverty reduction among the four countries. The share of non-cereal products (crops plus livestock) in agricultural GDP increased by 21.5 per cent, 11.6 per cent and 1.1 per cent in China, India, and the Philippines, respectively, during 1980-2010. In Viet Nam, where rural transformation started later, this share has seen an 8 per cent increase over the past decade.

Across the region, many of the most marginalized areas and minority communities still face huge challenges. Poor initial development conditions (such as lack of natural resource endowment), costly infrastructure development and lack of local market opportunities hinder their enjoyment of the fruits of overall economic development. In China, those left behind are concentrated in the western region and remote areas with large minority populations (Montalvo and Ravallion 2010). Large numbers of India’s poor live in its semi-arid tropical region. The poverty incidence rate for indigenous groups is twice as high as for non-indigenous groups (World Bank 2007). The incidence of poverty in Viet Nam is also highest in the remote northern and central highlands, particularly in indigenous areas (Minot and Baulch 2005). In the Philippines, poverty incidence is higher in conflict-affected Mindanao than in non-conflict provinces, and higher in remote mountain areas than in the lowlands (World Bank 2013).

As measured by the Human Development Index, all four countries have recorded sweeping gains in human development over the last few decades. Similarly, the Global Hunger Index developed by the International Food Policy Research Institute (IFPRI) showed that while all countries made strong improvements from 1990 to 2014, Viet Nam (ranked 7.5) and China (5.4) have reached a moderate situation, while the Philippines (13.1) and India (17.8) still have to overcome challenges (IFPRI 2015).<sup>42</sup> Over the past decade, India has, however, made progress in fighting undernutrition: child wasting fell from 20 per cent to 15 per cent between 2005-2006 and 2013-2014, and stunting fell from 48 per cent to 39 per cent. The Indian government has also scaled up nutrition-specific interventions. Yet progress in reducing child undernutrition is uneven among the states. One factor that makes it more likely that babies will be born underweight is the low social status of women, which affects women’s health and nutrition (IFPRI 2015).

A key finding in this report is that the speed of the shift to inclusion beyond poverty is not always positively correlated with income equality, as measured by the Gini coefficient. In fact, the Gini has worsened in China, but has changed only moderately in the other three countries (see table 2.4). In China, interregional inequality has been rising, too, most notably between the more highly developed eastern region and the lagging central and western regions (Li and Wei 2010) and between urban and rural areas, reinforced by long-standing urban-rural inequalities (Long et al. 2011).

Similarly in Viet Nam, although economic development in rural areas has resulted in higher income per capita and consequent improvements in living standards, it has also brought income inequality. Despite the gains in per capita income in rural areas, tackling residual poverty is proving hard owing to few assets, low education and poor health status, particularly among ethnic minorities, who are disproportionately represented among the rural poor. Average income per capita in rural areas is less than 50 per cent of that in urban areas. Rural poverty incidence is nearly three times that in

urban areas. Many rural households maintain an income level just above the poverty line. With few or no savings, little state support and an almost total dependence on natural resource gathering and subsistence agriculture, they are vulnerable to shocks. Poverty is concentrated in upland areas in the northeast and northwest mountains, parts of the central highlands, and areas of the central coastal region.

The per capita income ratio between urban and rural areas has been about 2.0 in India, the Philippines and Viet Nam over the past two decades, with a rising trend in India (Kanbur et al. 2014), and a falling one in Viet Nam (from 2.3 in 1999 to 1.89 in 2012) (GSOV 2014). The same ratio has stayed largely unchanged in the Philippines (Kanbur et al. 2014). China has the widest gap, despite the rapid growth of farmers' income. The ratio increased from about 2.0 in the early reform period to a peak of 3.33 in 2009, and then declined to 2.92 in 2014 (NBSC 2015). This recent narrowing reflects a bigger commitment by the authorities to narrow the divide (see box 2.1).

Unemployment is a challenge across the region, but with variation by country. In Viet Nam, while unemployment rates are higher for youth than for the total labour force, they have been quite low (5-6 per cent), moderate in China and India (9-11 per cent), and worrisome in the Philippines (nearly 20 per cent). Unemployment rates are lower for women – including female youth – in China, show no significant difference in Viet Nam and India, but are about 3 per cent higher in the Philippines (table 2.4).

Differences in employment between women and men are often due to their different roles in the economy and society. Men are generally more likely to participate in off-farm business, particularly business involving migration to urban areas, while married women tend to work more in farming and take care of their children and elders at home (Wang et al. 2011; Misra 2014). In India, about 300 million young people (aged 13-35) live in rural areas, and many of them are forced to migrate seasonally or even permanently, but lack the skills required by the modern economy. The Philippines, with

limited domestic job opportunities, has seen more women than men leave the country (for domestic services and other jobs abroad). In China, nearly all rural youth now participate in non-farm employment. In addition, more educated men and women have higher off-farm employment opportunities. Similar observations apply to India and Viet Nam.

Across the region, many of the most marginalized areas and minority communities still face huge challenges. Poor initial development conditions (such as lack of natural resource endowment), costly infrastructure development and lack of local market opportunities hinder participation in the benefits of overall economic development.

In China, those left behind are concentrated in the western region and remote areas with large minority populations (Montalvo and Ravallion 2010). Large numbers of India's poor live in its semi-arid tropical region. The poverty incidence rate for indigenous groups is twice as high as for non-indigenous groups (World Bank 2007). The incidence of poverty in Viet Nam is also highest in the remote northern and central highlands, particularly in indigenous areas (Minot and Baulch 2005). In the Philippines, poverty incidence is higher in conflict-affected Mindanao than in non-conflict provinces, and higher in remote mountain areas than in the lowlands (World Bank 2013).

### **Policies, institutions and investments**

A key theme of this report is that policies, institutions and investments matter fundamentally to the speed and inclusiveness of rural transformation. The design and implementation of institutions, policies and investments in each of the four countries have influenced the path and speed of rural transformation and their outcomes for inclusion and poverty reduction. In all four case study countries, land reform, basic rural investments and sectoral policies have been decisive.

Over the past 60 years, China has pursued three major rounds of land reform. The "total land reform" initiative in the 1950s took land away from the landowning classes and redistributed it to all farmers.

TABLE 2.4 Unemployment rates, total and youth, four countries, 1991-2013 (%)

Rate	China	Viet Nam	India	Philippines
<b>Total (% of total labour force)</b>				
1991	4.9	2.5	4.3	9.0
2000	4.5	2.3	4.3	11.2
2010	4.2	2.6	3.5	7.3
2013	4.6	2.0	3.6	7.1
<b>Male (% of male labour force)</b>				
1991	4.8	2.4	4.0	8.1
2000	5.1	2.4	4.3	11.2
2010	5.5	2.5	3.3	7.4
2013	5.2	1.8	3.5	7.2
<b>Female (% of female labour force)</b>				
1991	4.1	2.6	5.0	10.6
2000	3.8	2.2	4.2	11.2
2010	3.4	2.8	4.4	7.1
2013	3.8	2.2	4.0	6.9
<b>Youth total (% of total labour force aged 15-24)</b>				
1991	9.0	4.7	10.6	17.3
2000	9.3	4.6	10.0	23.0
2010	9.0	6.0	10.2	16.8
2013	10.1	5.4	10.5	16.7
<b>Youth male (% of male labour force aged 15-24)</b>				
1991	10.6	4.6	10.2	14.9
2000	10.9	4.8	9.9	21.4
2010	10.4	6.0	9.8	15.7
2013	11.7	4.8	10.3	15.4
<b>Youth female (% of female labour force aged 15-24)</b>				
1991	7.4	4.8	11.5	21.2
2000	7.6	4.4	10.1	25.6
2010	7.3	6.1	11.4	18.8
2013	8.1	6.2	11.3	18.6

Source: World Development Indicators (World Bank 2015)

### BOX 2.1 Strengthening inclusiveness through integrated and participatory approaches in poor areas in China

China's transformation has been fuelled by strong market reforms, fast industrialization and rapid urbanization. But as wages increased in the industrial and services sectors, average incomes among rural and urban households diverged, to a ratio of 1:3 by 2014. Pockets of poverty persist in rural areas, particularly in mid- and western areas of the country, far from the industrialized coastal areas.

IFAD supported the government in pursuing more inclusive growth by tackling pockets of rural poverty using an integrated but flexible (modular) approach that included options for stakeholders to test and scale tailored solutions. This collaboration was well demonstrated in Xinjiang Uygur Modular Rural Development Programme (MRDP), which ran from 2008 to 2013 in north-western China, where IFAD worked with four prefecture Poverty Alleviation Offices. The programme relied on close community engagement. It used participatory approaches for delivering modular interventions in management of natural resources, village livestock service stations, financial services through women's federations and rural credit cooperatives, market linkages through farmers' cooperatives and market associations, and "demand-responsive" agricultural services through innovative "technical envoys" for farmers, who delivered demonstrations on the farms of poor, rather than leading, farmers. The programme also addressed the special needs of rural women for literacy education and market-oriented skills training.

Due to its participatory and demand-driven approaches, and to its decentralized execution of modules by empowered local officials, the programme greatly helped to lift agricultural production and established a lending programme targeted at poor villages and households. Sample surveys indicate that 94 per cent of households increased their household assets, and that a significant majority increased their production of crops and livestock. Government statistics show higher growth rates in farmers' incomes and food production in programme villages than the four prefectures. This cut child malnutrition considerably: chronic malnutrition in children under 5 years fell from 38 per cent in 2007 to 16 per cent in 2014, and the prevalence of underweight children decreased from 17 per cent to 2 per cent for boys, and from 15 per cent to 4 per cent for girls, in the same period.

The government and IFAD further adapted these approaches within Inner Mongolia's Ulanqab Prefecture, where farmers suffer from limited water availability and land degradation. The Inner Mongolia Autonomous Region Rural Advancement Programme used similar participatory approaches to MRDP to benefit about 210,000 rural households, and helped reduce poverty in the programme area from 28 per cent at the start of the programme to 10 per cent at its completion.

Source: IFAD 2015.

The second land reform in the 1970s and 1980s built on the household responsibility system, dismantled the communes and “contracted” cultivated land to all village households, based mainly on the number of people and labour in the household, and giving them rights and responsibilities in land use (Brandt et al. 2002). More recent land reforms have emphasized securing land-contracted rights for the original contracted households and operational rights for land transfers through the rental market, the latter enabling middle and large farms to emerge rapidly (Huang and Ding 2015).

The government invested heavily in rural areas, especially in transportation infrastructure, agricultural research, irrigation, education, and health (IFAD 2015). The government also adopted supportive policies such as agricultural tax exemptions, subsidies for agricultural production and higher prices for government procurement of agricultural commodities, domestic and international trade liberalization, and expanded social protection and social security coverage (IFAD 2015). The result was rapid, sustained and inclusive transformation of rural areas. But stresses on natural resources and the environment have emerged, with stresses from water and land degradation becoming increasingly severe.

In Viet Nam, beginning with the major reform of Resolution No. 10 in 1988, individuals were given land-use rights, in a shift from de-collectivization of farms. The Land Law of 1993 further widened farmers’ rights, including the right to rent, buy, sell and bequeath land, and to use it as collateral. Special attention was given to women’s rights to land. The outcomes of these policies were the main factors in a sharp gains in agricultural productivity, farmers’ income and rural poverty reduction (Nguyen and Goletti 2001; Kompas et al. 2012). Sectoral policies, institutions and investments have included price and marketing reform in agriculture and the rest of the economy, agricultural R&D, agricultural trade liberalization, aggressive price decontrol, dismantling of parastatal trading firms, and heavy investment in communications, energy, and transport infrastructure. The National

Targeted Programme for Socio-Economic Development in Communes facing Extreme Difficulties in Ethnic Minority and Mountainous Areas – better known as Programme 135, Phase 2 (2006-2010) – dramatically expanded the number of schools, roads and components of market infrastructure, and improved access to new means by which minorities can profit from their assets.

India’s major land reforms have aimed to provide the rural poor with access to arable land through policy and legislation, including the abolition of intermediaries, tenancy reform and regulated ceilings on land holdings. Results have been mixed – the proportion of landless farmers even increased from 33 per cent in the 1970s to 40 per cent after 2000 (Sinha 1984; Rawal 2008). More than half the rural households were landless in the early 2010s (SECC 2011). Implementation of land reforms has varied greatly among states, and has been held back by social stratification and related political bottlenecks. India has increased its public investment in agricultural R&D in recent years. Although it recorded falling irrigation investment in the 1980s and 1990s, it saw a return to investment growth early this century (Varma et al. 2012), and the share of cultivated land equipped for irrigation rose from 29 per cent to 39 per cent over 1990-2010 (FAO data). But groundwater levels and soil fertility are rapidly declining in the food bowl of India, risking lowered food crop yields of 20-40 per cent by 2050 by some projections.

The government has developed what many consider the largest employment programme in the world, based on the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). Its objective has been not only to provide wage labour, but also to generate productive assets, which could lead to sustainable livelihood opportunities and thus gradually reduce dependence on such a public works programme. During 2006-2009, MGNREGA generated 6 billion person-days of work, involving an outlay of about US\$16 billion. The government has fostered rural decentralization and local empowerment since the 1950s. While results have been modest

and mixed overall, significant positive impacts have been achieved on empowering women, scheduled tribes and castes, and on improving the quality of water delivery, health care and education (Nagarajan et al. 2014).

After gaining independence in 1946, the Philippines made several land reforms aiming to redistribute land. Progress has been uneven. The country still has wide land inequality. The share of landless farmers climbed from 58 per cent in the 1970s to 70 per cent in 2010 (Boyce 1993; USAID 2011). From the early 1990s, the government started transferring irrigation management from the central level to decentralized users of irrigation services (World Bank 2013). But slow growth of government fiscal income has kept down public expenditure on water control, and the limited expansion of irrigation has been made possible mainly through loans from international agencies (Llanto 2012). The share of cultivated land equipped for irrigation even fell slightly, from 16 per cent to 14 per cent in 1990-2010. Public investment in other rural infrastructure has been limited. Government spending on the road network as a share of GDP dropped to only 0.3 per cent in 2009. Low investment added to the poor conditions of farm-to-market roads, stymying tight and timely links between production and consumption areas. During the typhoon season, frequent landslides shut down roads completely. Substantial investment is required to upgrade road networks (IFAD 2009). Sectoral policy has been aggressive but has also had mixed results.

Market liberalization has been less successful than in other countries in reducing price distortions and allowing farmers to better allocate their land, labour and capital to increase agricultural productivity. But, as in India, the government has sought to address persistent poverty and undernutrition through in-kind food subsidy programmes, making substantial budgetary outlays (United Nations 2015). Jha and Ramaswami (2010) found that the overall return to the two countries' food subsidy programmes is low, with income impacts on the poor of less than 5 per cent of incremental spending. Persistent policy distortions, such as

the rice self-sufficiency policy and large subsidies for inputs, are part of the reason for the lack of agricultural transformation in the Philippines (World Bank 2013). Trade liberalization, though, has contributed to poverty reduction in the Philippines (Cororaton and John 2007). The outflux of migrant workers and the large influx of remittances from them and other overseas Filipinos, are important features of structural transformation and rural transformation. Remittances were estimated at US\$28.4 billion in 2014 (WDI 2015).

### Conclusions and implications for policy and investment

Differences in the path and speed of structural transformation and rural transformation in APR lie mainly in the growth of productivity and the extent to which employment can be generated in the farm and non-farm sectors in rural and urban areas. Though initial conditions matter, institutions, policies and investments are primary factors determining the path, speed and inclusiveness of rural transformation. Fostering sustainable and inclusive rural transformation requires policymakers to combine policies to promote rural transformation and enhance structural transformation, as growth and inclusiveness are outcomes of both transformations. Without substantial structural and rural transformation, it is hard to achieve sustainable growth and really *inclusive* rural transformation.

While countries and the transformations in the region are distinct, strategic areas for policy and investment emerge for countries at similar levels and speed of inclusive and sustainable rural transformation. Countries with fast inclusive and sustainable rural transformation (group I) face the challenge of sustaining their success. While labour-intensive manufacturing will remain an important source of inclusive growth for this type of country, strengthening inclusive institutions, policies and investments is a priority, as is adapting them to new circumstances. Rapid growth has been accompanied by major distributional consequences, particularly for faster-growing economies (Zhuang et al. 2014). Fostering

integrated urban-rural development and balanced regional development to narrow urban-rural and regional income gaps is another priority. Policies to strengthen provision of rural public goods and rural financial institutions and investments – targeting left-behind regions – are required.

Another central concern tackling increasing stresses from water and land degradation linked to fast structural and rural transformation. There is a need to enhance sustainable agricultural development, including sustainable management of natural resources, with a particular emphasis on overcoming growing stresses from water and land degradation. Countries should consider exploring policy options for increasing efficiency of water and modern inputs (by, for example, cutting overuse of fertilizer and pesticide).

Policies and institutions should be tailored to each country's circumstances, but a common thread among fast transformers is dealing with the impacts of rising wages – as in China now or in Viet Nam in the near future – by, for instance, updating technology in manufacturing and services. Policies should also aim to keep increasing agricultural productivity by, among other things, enhancing the security of land tenure and consolidating farmland, so as to further expand the rental market.

Countries with relatively slow and non-inclusive rural transformation (group II) should primarily focus on overcoming the binding economic, institutional and political constraints to achieving faster structural and rural transformation and to reducing poverty. They should consider comprehensive measures to align institutions, policies and investments, so as to maximize their impact on stimulating sustainable and inclusive growth. Countries in this group face the common challenge of creating more jobs for rural workers, on and off the farm, and in rural and urban areas. In rural areas, policy priorities should include investing more in agricultural technology and rural infrastructure, eliminating market distortions on agricultural and rural growth and fostering a better business environment to promote private sector investment (including

fiscal and financial incentives). Additionally, strengthening institutional reforms in farmland and rural finance would enable the poor to access agricultural land and credit. There is also a need to decentralize fiscal and administrative responsibilities and funding so that lower-level authorities can allocate resources according to local needs.

For countries showing mixed results on structural transformation, rural transformation and poverty reduction (group III), strategic priorities will depend on the circumstances of each and the type of transformation to be enhanced. Still, the role of agricultural and rural development remains central to boosting structural and rural transformation in all cases. Countries with slow structural transformation should prioritize job creation in the rural non-farm economy, and in services and industry in urban and semi-urban settlements – a major area of action. Countries with slow rural transformation should consider enhancing their institutions and policies to enable the rural poor to access agricultural land and credit, and focus investments on agricultural technology and rural infrastructure. In addition to exploring decentralization, countries should ensure that appropriate market and pricing policies are in place to foster agricultural growth and, thus, rural and structural transformation.

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## Spotlight 2: Institutions and governance

Institutions matter for structural and rural transformations as they matter for economic growth, poverty reduction, political stability and social inclusion. Understood as the formal and informal “rules of the game,” institutions shape the behaviour of political, social and economic actors (including civil society and farmers’ organizations), their interactions, and the formal or informal arenas in which those interactions take place (Scartascini et al. 2010). They not only foster transformation, but also make it more inclusive by ensuring that all people, particularly those left behind, have access to rights, services and resources.

The institutions that influence the economic, social, and political life of people do not appear in a vacuum: they are embedded in a context and are influenced by historical events and culture. As seen in the Introduction, initial conditions shape, and are shaped by, institutions. Natural endowments, human capital, traditional identities and historical legacies affect the range and nature of choices open to governments and other key actors. Some initial conditions do not change, like geographical attributes, but others evolve. In the last few decades, a raft of institutional arrangements in developing countries has helped hugely to lift human capital in education and health by improving access to primary school and to vaccines, antibiotics and micronutrient supplementation, especially for the poor.

Asking which institutions matter the most to fostering sustainable and inclusive rural transformations would be misleading. Institutions matter and are a cause and an effect of economic growth (Rodrik et al. 2002; Rodrik 2004). There is no unique set of formal and informal rules (or dynamics) that foster economic growth and social inclusion. But even if we establish a causal link between institutions, on the one hand, and sustainable and inclusive transformations, on the other, the relationship does not specify the rules, laws or institutional designs responsible for the outcomes (Rodrik 2004).

For instance, Brazil, Cameroon, Malawi, Turkey and Viet Nam are examples of countries that have experienced fast structural or rural transformation (or both) and significant poverty reduction in the last few decades. They have done so with different combinations of political and economic institutions, policies, enforcement mechanisms and levels of investment. Hausmann et al. (2004) identified more than 80 cases of growth acceleration, of which the vast majority were not fully related to the conventional major economic reforms associated with economic liberalization. They concluded that it is not an extensive set of institutional reforms that initiate the growth of countries, but identification and unleashing of the “binding constraints” on economic growth that prevented them from growing.

The decentralization process in Asia is another example of a common institutional arrangement that led to different outcomes in different countries. As presented in chapter 2, China, Viet Nam, the Philippines and India have adopted fiscal and administrative decentralization since the 1990s. In China, the provincial and county government responsibility system attracted business and investment, triggering local economic growth and remarkable structural change (Qian and Weingast 1997; Jin et al. 2005). Viet Nam is also a reasonably decentralized country (Duc 2005). However, subnational governments do not always have discretion to decide how to allocate the funds that they receive from central government (De Wit 2007). That is why some analysts prefer to use the term “deconcentration,” understanding subnational governments as “only spending units” (Duc 2005). The Philippines has followed much larger administrative decentralization but, because it was not accompanied by a proportional fiscal change, local governments are fiscally constrained. India amended its Constitution in 1992 to support rural and urban decentralization, but again, limited fiscal and administrative decentralization generated challenges and constraints preventing the country from accomplishing its goals at local level.

Institutions, then, are not good or bad, in themselves. Acemoglu and Robinson (2012) have made a distinction among them, depending on how they distribute political power and economic benefits among social groups. They define “inclusive institutions” as those which lead to “a more equal distribution of income, empowering a broad segment of society and making the political playing field even more level.” “Extractive” ones are those that allocate political power narrowly and reinforce extractive economic institutions to hold power. In line with other studies, the authors support the notion that inclusive political and economic institutions lead to inclusive economic growth that benefits society as a whole, also contributing to poverty and inequality reduction. This argument is consistent with studies that link high levels of inequality with high levels of concentration of political and economic power (World Bank 2006). A good case can be made about relationships that tie levels and trends in inequality, the inclusiveness of political and economic institutions, and structural and rural transformation processes that lift large numbers of poor rural people out of their condition (chapter 1).

Even when the outcome (for economic growth and social inclusion) of specific political and economic institutions depends heavily on context, certain principles remain crucial. Rodrik (2002) compared China and Russia to demonstrate that “most of first order economic principles come institution-free. Economic ideas such as incentives, competition, sound money, fiscal sustainability, property rights do not map directly into institutional forms.” What is important is to ensure the rule of law and secure property rights so that investors consider their investments protected. It is then up to each country to decide on its own institutional mechanism to enforce that protection, through common law, civil law or even Chinese-type socialism.

Democracy is not sufficient to achieve fast economic growth (Przeworski 1999). However, participatory regimes favour inclusion and a more equitable distribution of political, economic and social benefits. The analysis in

chapter 1 confirms the strong and statistically significant relationship between some quality of governance indicators and rural poverty reduction. When democracy is not a condition for economic growth, basic political rights such as freedom of speech or freedom of association favour more inclusive societies.

### **Institutions for, and of, poor people**

Two types of institution can be distinguished as of immediate concern to poor people: providers of goods and services, and enabling agencies (IFAD 2009). Enabling agencies are those which establish the policy and legal frameworks that “enable” the conditions for inclusive transformations to happen and, therefore, the role poor people will play in them. They may support expansion of financial services and access to them by poor people, access and management of natural resources by local communities, and expansion of markets and value chains by smallholders.

For rural transformation to be inclusive, institutions also need to be so, for which a key condition is that civil society itself must be inclusive (World Bank 2000). Thus organizations – understood as actors or *players* (North 1991) – are key elements of inclusive institutions. Together, institutions and social organizations are key vehicles for poor, rural people to overcome their isolation from centres of power and influence (IFAD 2013). By supporting collective action and empowerment of rural people and their organizations, public institutions can enhance and expand the inclusiveness of rural transformations. In other words, institutions and social organizations, including farmers’ organizations, allow poor rural people access to productive resources, political and civil rights or public services, and so help to increase opportunities for poor and disadvantaged people to participate in political, economic and social processes.

Global interdependence, decentralization and the rapid development of civil society organizations all present opportunities to increase the participation of poor people in society, provided they are organized to influence the institutions, policies and decisions that

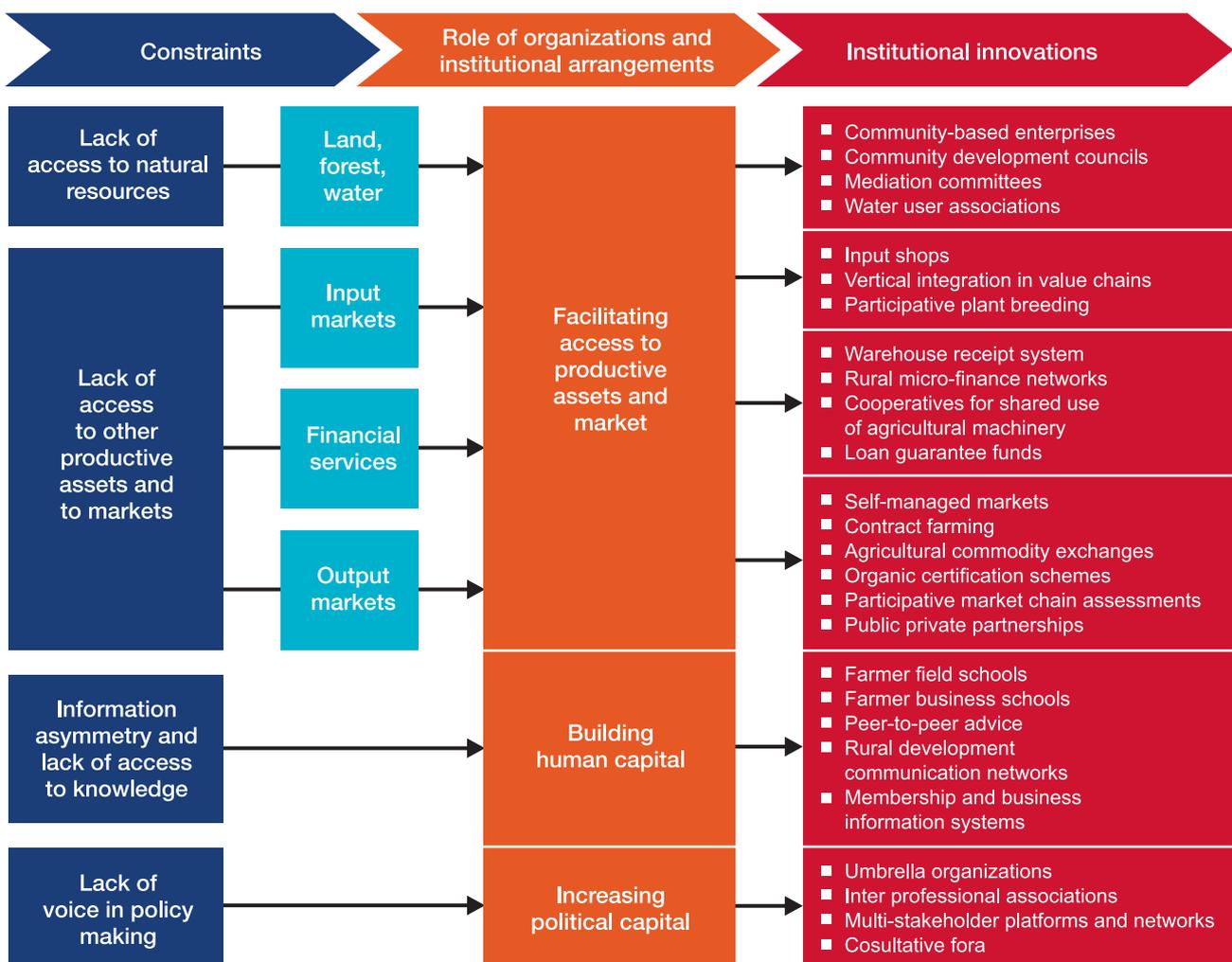
affect their lives and determine the economic benefits of their activities (IFAD 2013). In the last few decades, small-producer organizations have developed good practices that have allowed them to overcome the key constraints they faced to fully engage in rural transformation and seize the economic opportunities that derived from them. IFAD and the Food and Agriculture Organization of the United Nations (FAO) have identified these good practices and have shown how, under certain conditions, rural organizations enable small producers to access and manage natural resources, to access markets for goods and services, to access information and knowledge, and to participate in policymaking (FAO 2012; see figure S2.1).

An important element to promote inclusive institutions is to have strong vertical and horizontal institutional and organizational linkages. The best method is to focus on the functional aspects of institutions and organizations, specifically increasing information flow and exchange, sharing financial resources, and ensuring better decision-making, and technical and managerial skills (FAO 2012).

### Institutions for sustainable and inclusive transformations

Institutions are important to establish common rules and create incentives. They can open opportunities for poor people and their organizations to better seize economic, political

FIGURE S2.1 Small producers' constraints and institutional innovations



Source: FAO (2012).

and social opportunities, but they could also increase their challenges. Similar institutional arrangements could lead to different outcomes and vice versa. Therefore, it is not possible to determine which institutions better foster economic growth and poverty reduction.

Even when sustainable and inclusive transformations do not necessarily require macro institutional reforms, they need common political and economic rules – to ease the binding constraints on the rural economy, to ensure property rights (thus attracting more investment in agriculture and the rural sector), and to promote the participation of rural people and their organizations – so they, too, are active actors in transformation.

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## CHAPTER 3

# Structural and rural transformation in Africa



## Summary

The dominant narrative about social and economic development in Africa is of a fast-transforming continent showing mixed but generally positive performance. While the positive tone is justified, it must be tempered by recognition of challenging trends and enduring gaps that threaten continued progress.

As incomes grow and diets diversify during structural transformation, the demand for food generally shifts from basic staples to horticultural and livestock products. This leads to a shift in the overall structure of agricultural production. But evidence from Africa suggests that while such a shift is occurring in some countries, it is not yet the norm across the continent. Agriculture shows healthy growth in terms of both output and productivity, but it is not diversifying its commodity mix much. The picture that emerges is of an expanding agricultural sector, but one with weak fundamentals that are preventing a broad-based reduction in poverty and inequality.

Nevertheless, Africa's rural areas are transforming deeply and quickly. Comprehensive data are not yet available, but case study evidence points to weighty changes underway in the structure and functioning of its food systems. Urbanization and rapidly changing consumption patterns has fuelled a sharp shift in diets beyond grains into non-grain foods, such as dairy, fish, meat, vegetables, fruit and tubers, and heavily into processed foods. Despite the persistence of severe poverty, average incomes have risen and a middle class has emerged, further fuelling diversification of demand.

Also registering profound change is Africa's non-farm rural economy. The rural nonfarm business environment is fraught with many difficulties, including a lack of basic infrastructure, inadequate credit and insurance markets, poor tenure security and ethnic and gender disparities. For Africa's budding rural non-farm sector to offer a ladder from underemployment on farms to more rewarding self-employment and regular wage work in the local economy, it must also become a more reliable source of regular liquidity.

Most African countries face three major inclusion challenges: coping with the "youth bulge" (which is unique to Africa), dealing with small and declining manufacturing sectors, and overcoming deeply entrenched barriers to factor mobility. Cutting across all three challenges is Africa's urgent need for stable and remunerative rural jobs. The importance of agriculture extends well beyond primary production, and is likely to grow with continued transformation of food systems and lagging growth in manufacturing. In any scenario, agriculture will continue to play a greater role than has been the case in other transformations, because factor proportions and comparative advantage favour it.

Evidence confirms that most of the African countries that registered relatively high rates of structural and rural transformation over the last two decades managed to cut poverty quickly, while very few of the slower transformers were able to do so. Still, a significant number of countries registering quite rapid transformation showed slow poverty reduction. A common feature of such countries was limited technical dynamism (as measured by growth in total factor productivity) in agriculture.

While speeds and patterns of structural and rural transformation differ across the continent, similarities in factor proportions and competitive advantage imply that inclusive transformation springs mainly from agriculture and the rural non-farm sector. Both of these require sustained productivity-enhancing investment to reach their full potential. The goal for public policy and investment must be to spur job creation within these sectors. Focusing on rural youth, it is useful to distinguish between those who choose to stay on farm and those who decide to leave.

Improving prospects for tomorrow's farmers entails more profitable management of existing farms, with enhanced access to technology, markets, finance, information and infrastructure. Because most young African farmers lack secure property rights over land, recent progress in land administration and documentation of tenure rights must be consolidated and advanced, and rental markets must be strengthened. Closing enduring gender gaps in access to core assets,

inputs and services – land, livestock, labour, education, extension and financial services, and technology – is vital.

Young Africans who exit farming must build the skills that can enhance their employability and entrepreneurial capacity. To enhance employability, targeted improvement of key technological skills, vocational training for jobs in the commercial sector and basic “life skills” for success in working environments are required. Young people must also acquire basic business development skills. But improved skills alone are insufficient – they must be accompanied by expanded access to finance and financial services. Further, as most rural occupations are informal, growth and deepening of the rural informal economy must be supported, in part with physical infrastructure.

Attracting private investment into agriculture and the rural non-farm economy is critical, but many agricultural rules in Africa actually serve to deter rather than encourage such investment. Reforming the regulations that limit private entry and investment in value chains that serve smallholders must be a priority. Innovation in the information and communications technologies favoured by youth and to other information-based resources must continue, with the aim of deepening access to credit and financial services.

### Major trends and patterns of structural and rural transformation

Structural transformation reflects changes in the relative contributions of agriculture, services and manufacturing to GDP. Rural transformation is embedded within structural transformation, as rural people change their occupations, invest, diversify livelihoods and relate differently to each other within their families, communities and social institutions. This section investigates how these dual processes are unfolding in Africa today.

#### Economy-wide structural shifts

Between the early 1990s and 2010-2012, per capita incomes in Africa grew by 1.28 per cent a year, on average – 1.57 per cent in ESA and 1.06 per cent in WCA. The faster growth in

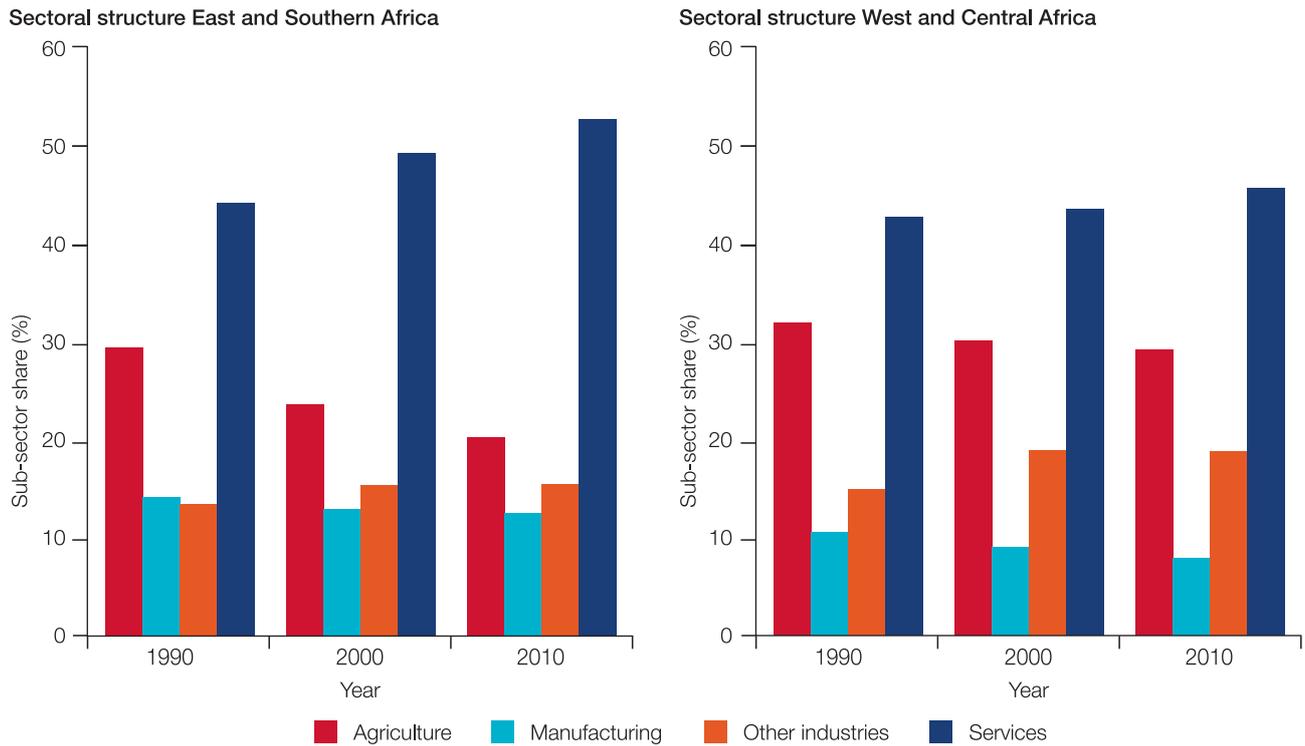
ESA was accompanied by quicker structural transformation (figure 3.1). The share of agriculture in GDP fell faster in ESA than in WCA, while that of services grew more quickly. The opposite was the case for the share of manufacturing, which fell further and more rapidly in WCA than in ESA. Other industries gained share more rapidly and to a higher level in WCA than in ESA.

Africa’s structural transformation is similar to other transformation processes. The regularity of agriculture’s relative shrinkage as a share of both GDP and labour is well illustrated for a number of African countries in figure 3.2. At low levels of GDP, agriculture’s share is large, and the proportion of the labour force employed in agriculture is even larger due to low labour productivity. As income rises, agriculture’s relative share falls, but that of labour falls even faster as farm workers exit and the productivity of those who remain rises. Eventually, at very high levels of income, primary agriculture is a small share of the economy (although the agrifood industry as a whole is larger), agricultural labour as a share of the work force is small, and those employed on farms have about the same productivity per worker as those employed elsewhere.

Agricultural production is the most important sector in most African countries, averaging 24 per cent of GDP for the region. Agribusiness supplies, processing, marketing and retailing add about 20 per cent of GDP (World Bank 2013). But many African countries, such as Côte d’Ivoire, South Africa and Zambia, already have smaller agricultural sectors than did today’s middle- and high-income countries at the same point (table 3.1). The smaller size of the agricultural sector is balanced by the larger size of the service and mining sectors.

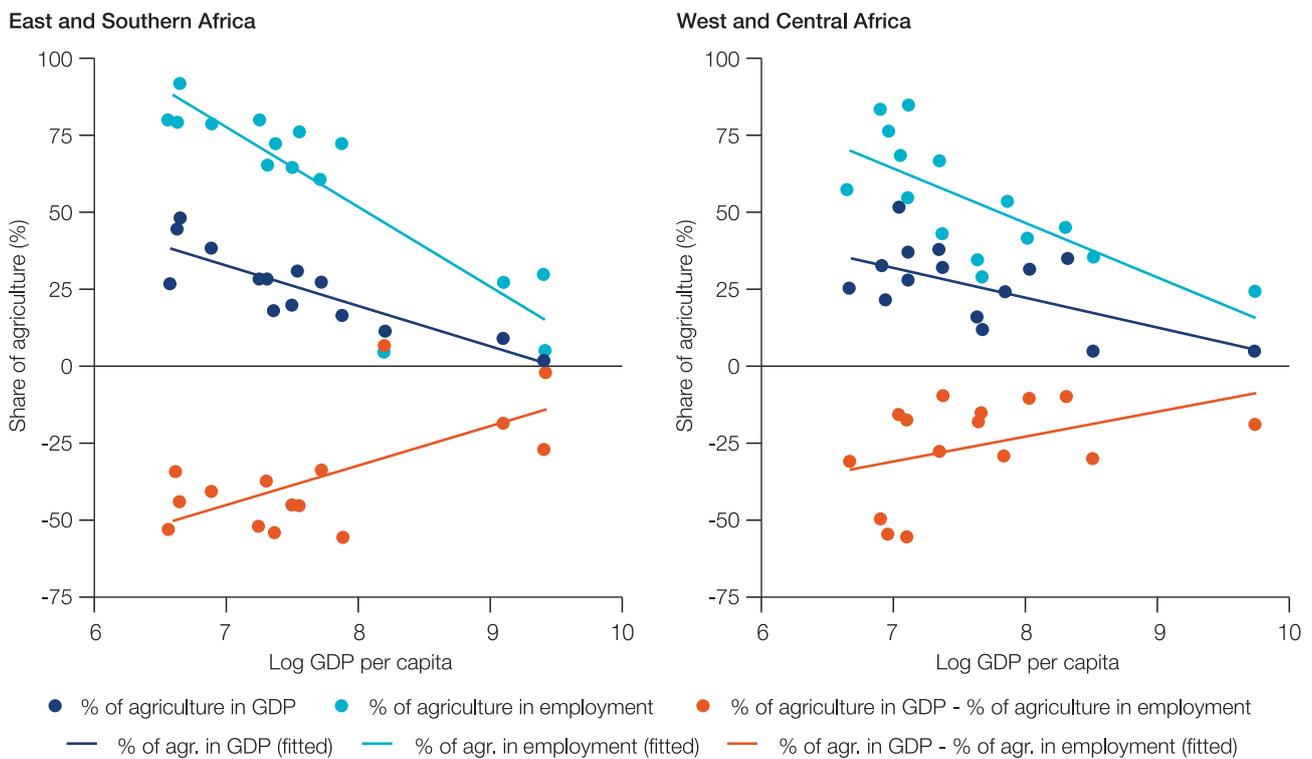
Dependence on agriculture ranges from a high in Ethiopia and Sierra Leone (where primary agriculture contributes about half of aggregate GDP) to a low in South Africa and Zambia. Despite their differences, countries of the continent share trends in demography (high birth rates, declining death rates, rapidly growing population and labour force) and, to a lesser extent, in urbanization.

FIGURE 3.1 Structural change of the economy in sub-Saharan Africa, 1990-2010



Source: IFAD, based on World Bank (2015)

FIGURE 3.2 Share of agriculture in total employment and GDP, circa 2010-2013



Source: IFAD, based on World Bank (2015)

Agro-industry is also predominant in the manufacturing sector of many African countries (figure 3.3), unlike other regions where light and heavy manufacturing are more prominent than food processing. The importance of agriculture thus exceeds that of primary production, and is likely to grow with continued transformation of food systems and lagging growth in manufacturing.

The service sector is broadly defined and covers much that is “in between” agriculture and industry, including trade and transport, personal services, machinery repair, tailoring, carpentry, social services and activities of the nongovernmental organization (NGO) sector, as well as highly skill-intensive services in finance, insurance, medicine and education. Much service work is unskilled and informal,

TABLE 3.1 Heterogeneity among selected African countries

Country	Agriculture, value added (% of GDP, 2012)	Employment in agriculture (% of total employment)	Rural poverty ratio (at nat'l poverty line)	Agriculture, value added (annual % growth, 2005-2012)	TFP growth rate (% avg 2005-2012)	Population growth rate (annual %, 2005-2012)	Urbanization rate (annual %, 2005-2012)
Burkina Faso	35.34	84.8 (2005)	52.8 (2009)	6.00	-0.083	2.96	3.51
Cabo Verde	8.10	N/A	44.3 (2007)	-1.75	3.063	0.54	1.37
Côte d'Ivoire	22.54	N/A	54.2 (2008)	-0.06	0.268	1.84	1.51
DRC	21.77	N/A	75.7 (2005)	3.13	-1.169	2.85	1.28
Ethiopia	47.98	79.3 (2005)	30.4 (2011)	8.35	2.678	2.71	2.00
Ghana	22.96	41.5 (2010)	37.9 (2012)	3.56	1.439	2.49	1.39
Kenya	29.21	61.1 (2005)	49.1 (2005)	2.72	0.556	2.72	1.69
Madagascar	28.20	80.4 (2005)	81.5 (2010)	2.13	1.022	2.88	2.05
Malawi	28.74	N/A	56.6 (2010)	3.30	2.934	2.99	0.68
Mali	42.26	66 (2006)	50.6 (2010)	6.34	2.166	3.17	2.31
Mozambique	28.87	N/A	56.9 (2009)	6.31	2.181	2.65	0.66
Nigeria	22.05	44.6 (2004)	52.8 (2010)	6.15	-0.468	2.74	2.13
Rwanda	33.44	78.8 (2005)	48.7 (2011)	5.26	6.189	2.71	4.35
Sierra Leone	56.75	68.5 (2004)	66.1 (2011)	6.13	2.942	2.45	0.76
South Africa	2.52	4.6 (2011)	68.8 (2011)	1.95	3.152	1.33	0.88
Tanzania	28.69	76.5 (2006)	33.3 (2012)	3.97	1.462	2.98	2.49
Uganda	25.93	65.6 (2009)	27.2 (2009)	1.40	-2.686	3.42	2.14
Zambia	10.35	72.2 (2005)	77.9 (2010)	0.33	3.137	2.93	1.13

Note: TFP is total factor productivity.

Sources: columns 1, 2, 3, 4: World development indicators (World Bank 2015); column 5: USDA, Economic Research Service; columns 6, 7: author's calculations from World development indicators (World Bank 2015).

and employees of informal enterprises are often family members. Entry costs are low. Technical change in transportation, communications and financial services has allowed productivity to grow. The rise of the service sector suggests that productivity and earnings must be somewhat higher than in agriculture, but probably not by much at the entry level. World Bank Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) data confirm that a positive productivity gradient exists, but it is not very steep (McCullough 2015). Movement of many people across a relatively flat productivity gradient will not boost aggregate national productivity by much, but it prevents the decline that would occur if movement were impossible. (These issues are addressed in further detail below.)

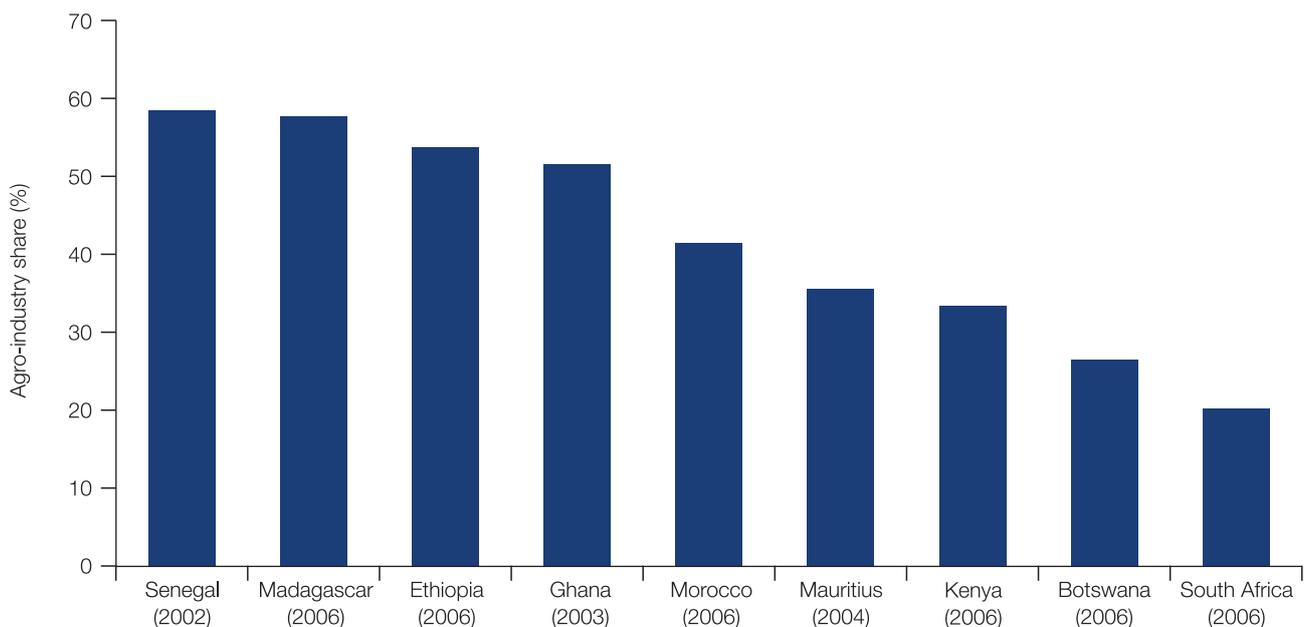
In summary, commodity export earnings, faster agricultural growth, better economic policy, improved governance and more regional integration have underpinned rapid economic growth in the twenty-first century. With growth has come structural change that in many ways mirrors past experiences and in other ways deviates from it.

The agricultural sector has grown absolutely and declined relatively, as resources have shifted to other sectors, primarily services. The demand for services comes in part from the agricultural sector. Much demand is generated by resource rents (and in some countries official development assistance) channelled back into the economy through public spending (Gollin et al. 2013). The rapid growth in the service sector shows a high degree of responsiveness to new opportunities, but sustained growth in that sector will require technical change in agriculture to shift the foundations of the middle class from the public sector to competitive manufacturing and services.

### Developments in agriculture

As incomes grow and diets diversify during structural transformation, the demand for food usually shifts from basic staples to horticultural and livestock products. This leads to shifts in overall structures of agricultural production. Figure 3.4 suggests that, in aggregate, such a switch in agricultural production structure has yet to occur in Africa. Trends in ESA and WCA are broadly similar to the Africa-wide trend.

FIGURE 3.3 Agro-industry as share of total manufacturing value added, mid-2000s



Source: Roepstorff et al. (2011). Calculated from WDI.

But country-level data show a mixed picture (figure 3.5). In some economies, the expected shift in production structure is clear, including Tanzania and South Africa in ESA and Cabo Verde and Senegal in WCA, but in others no clear trend is evident, including Kenya in ESA, or is missing, as in Ghana in WCA.

Overall, the limited shift in production structure is reflected in relatively flat growth on several measures of agricultural sector performance (table 3.2). The first two rows allow for comparison of Africa with the rest of the developing world (RODW), while the second two rows compare ESA and WCA. While RODW registered per capita GDP growth more than twice that of Africa, its agricultural growth (2.71 per cent) lagged significantly behind Africa's (3.26 per cent). Crop diversification, as measured by the increase in the share of non-cereal commodities, grew at 0.04 per cent, one third that of the RODW (0.12 per cent). The slow rate of diversification generally is consistent with the findings summarized in figure 3.4. While agriculture shows solid GDP

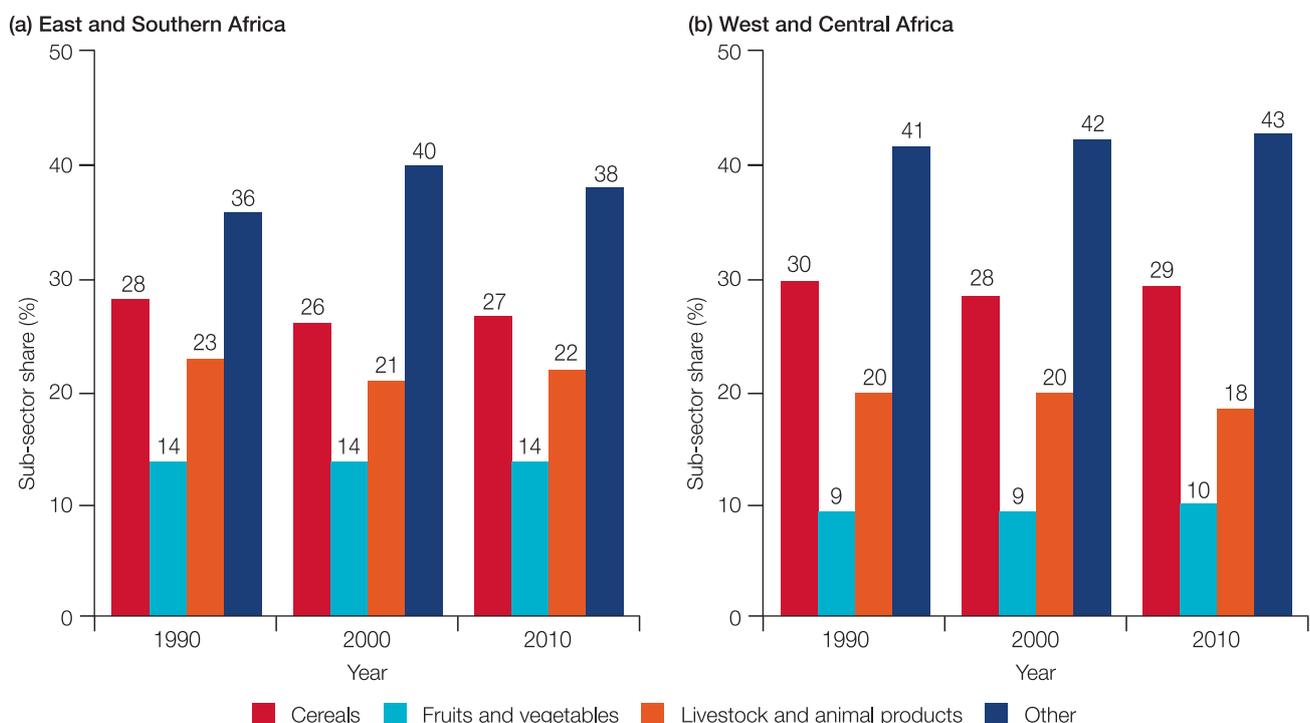
and productivity growth, it is not diversifying its commodity mix greatly.

Table 3.2 also reports three rates of productivity growth in agriculture: total factor productivity (TFP), and labour and land productivity. All three are slower in Africa than in the RODW, further affirming the still low level of diversification from basic staples. With a largely poor and relatively quickly growing population dependent on staples in both production and consumption, agricultural transformation in Africa is still at a relatively early stage.

Comparing the averages between ESA and WCA does not reveal a clear dominance of one of the regions, with performance varying across indicators. Per capita incomes grew some 0.5 per cent faster in ESA (1.57 per cent) than in WCA (1.06 per cent), but agricultural growth rates were reversed – 0.9 per cent higher in WCA. As signalled in figure 3.4, both subregions registered slow growth in the non-cereal share of GDP.

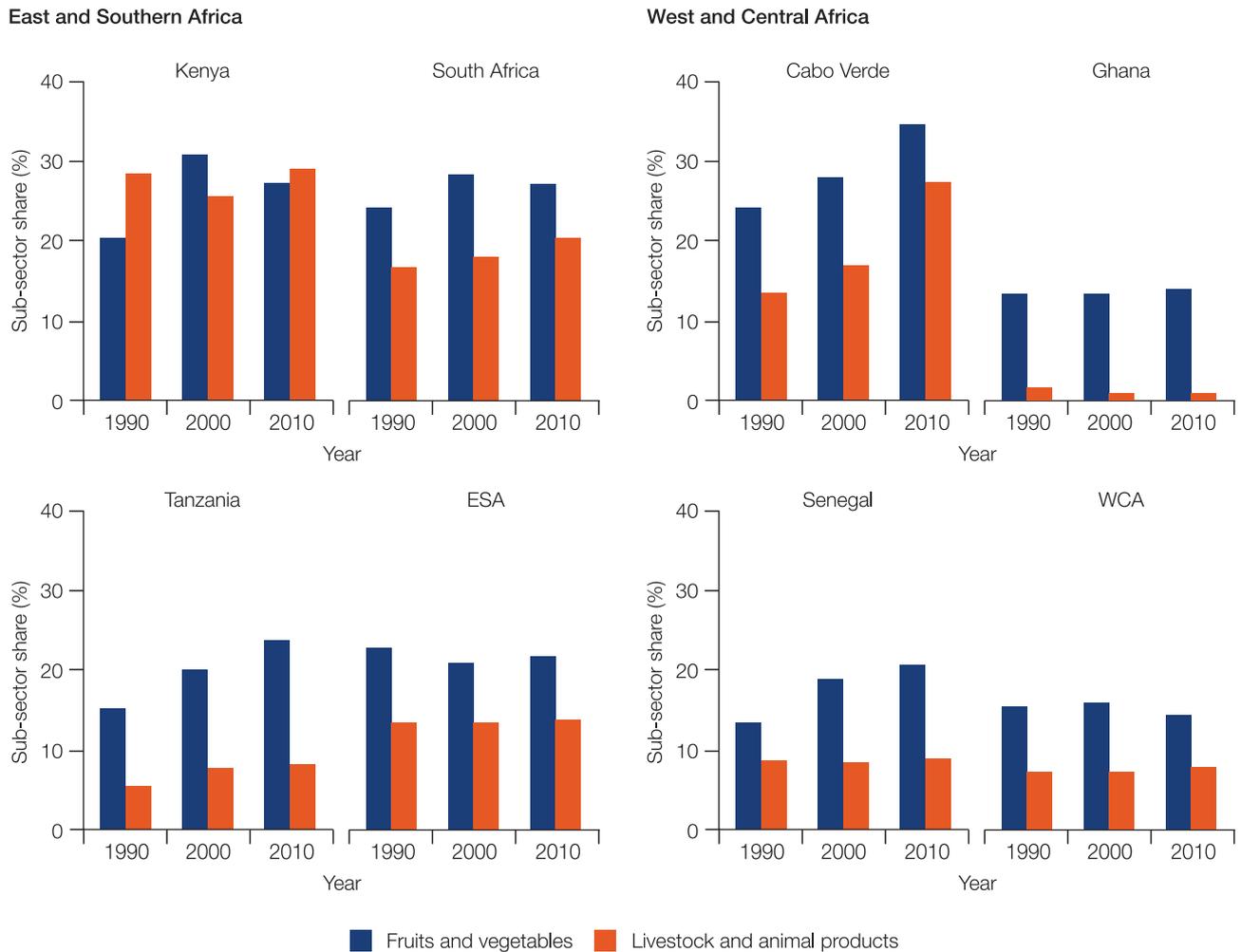
So the agricultural sector is growing rapidly, but still has weak fundamentals that

FIGURE 3.4 Change in the composition of agricultural output in sub-Saharan Africa, 1990–2010



Note: 1990, 2000, and 2010 represent three-year averages for 1989–1991, 1999–2001, and 2009–2011.  
Source: data from FAOSTAT.

FIGURE 3.5 Change in the composition of agricultural output in selected sub-Saharan African countries, 1990-2010



Note: 1990, 2000 and 2010 represent 3-year averages for the 1989-1991, 1999-2001 and 2009-2011 periods respectively. Source: data from FAOSTAT.

limit the needed reductions in poverty and inequality. Extreme poverty and inequality declined more slowly in Africa than in the RODW (table 3.3). Poverty remained concentrated in rural areas in 2010 (figure 3.6). In both ESA and WCA, rural poverty in 1990 was close to 60 per cent, but declined only slowly over the following 20 years, and was still at 56.7 per cent in WCA and 52.8 per cent in ESA in 2010. The decline was a bit quicker in faster-growing ESA than in WCA. Urban poverty declined sharply in ESA, from 37.0 per cent in 1990 to 27.3 per cent in 2010, whereas it increased in WCA from 28 per cent to 32.3 per cent. In short, poverty reduction was faster in countries with higher agricultural growth.

The contribution of technical change to Africa’s recent agricultural growth, while greater than in the late twentieth century, is now generally less than in other global regions, particularly during periods of rapid growth in those regions (figure 3.7). Most of Africa’s agricultural growth can still be attributed to expansion of land and labour plus shifts in the composition of output. In the relatively favourable period of 2001-2008, 69 per cent of observed growth in agriculture could be attributed to expansion of area, 14 per cent to favourable prices or terms-of-trade effects, and only 17 per cent to increased use of inputs (including labour) and to technical change (Fuglie and Rada 2013). Technical dynamism

TABLE 3.2 Characteristics of rural transformation in Africa and other regions

Region	Annual change %					
	GDP per capita c. 1990-2014	Agricultural GDP c. 1990-2014	Crop diversification (Non-cereal crops in agricultural output) c. 1990-2012	Total agricultural factor productivity 1992-2012	Labour productivity c. 1990-2014	Land productivity c. 1990-2012
SSA	1.28	3.26	0.04	1.07	1.09	1.06
RODW	2.66	2.71	0.12	1.75	2.04	1.76
ESA	1.57	2.78	0.04	1.20	0.51	1.01
WCA	1.06	3.68	0.05	0.97	1.71	1.10

Notes: SSA = Sub-Saharan Africa; RODW = Rest of developing world; ESA = East and Southern Africa; WCA = West and Central Africa.  
Source: IFAD calculations based on World development indicators (World Bank 2015).

TABLE 3.3 Trends in rural poverty and inequality in Africa and other regions, 1990-2010

Region	Annual change %	
	Extreme rural poverty (US\$1.25/day PPP 2005)	Rural Gini coefficient
SSA	-0.78	-0.13
RODW	-1.24	-0.33
ESA	-0.64	-0.14
WCA	-0.91	-0.11

Notes: PPP = 2005 purchasing power parity; SSA = Sub-Saharan Africa; RODW = rest of developing world; ESA = East and Southern Africa; WCA = West and Central Africa.  
Source: IFAD calculations based on World development indicators (World Bank 2015).

through innovation (as measured by growth in TFP) has not yet been a major source of growth in Africa.

Some African countries, such as Burkina Faso, Ethiopia, Mali, Mozambique, Rwanda and Tanzania in table 3.1, show rapid growth of agricultural GDP but less from TFP growth than in other parts of the world during periods of strong growth. Rapid agricultural growth with expansion of land and absorption of labour accompanied by modest improvements in TFP is consistent with Africa's factor endowment and can be inclusive. It has improved since the 1990s, when population growth increased the agricultural labour force faster than other

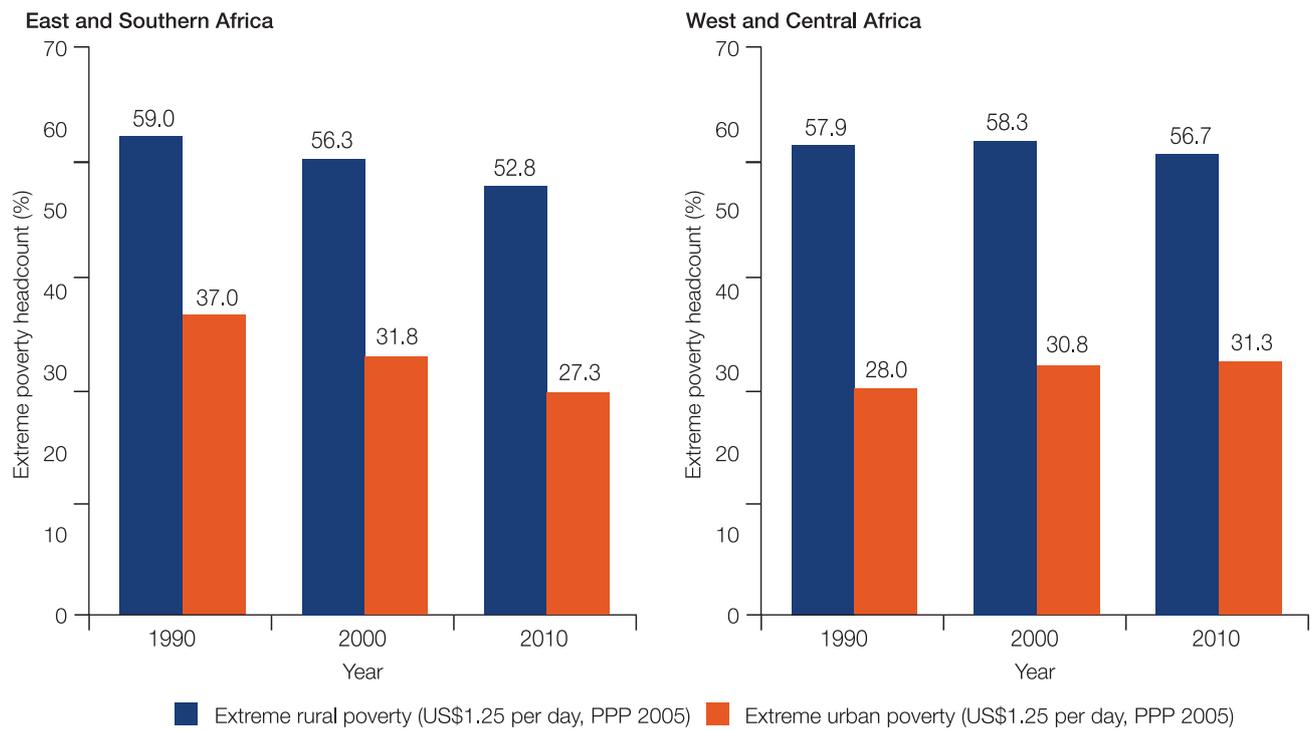
factors of production, and the sector saw little technical change – labour productivity in these circumstances fell.

Where agriculture is growing and absorbing labour while TFP is rising, job opportunities grow. Shifts to better technology could bring even faster growth. There is no inherent trade-off between TFP growth and job creation, as long as demand is strong. Current developments in food systems point to rapid growth of such demand.

#### Developments in food systems

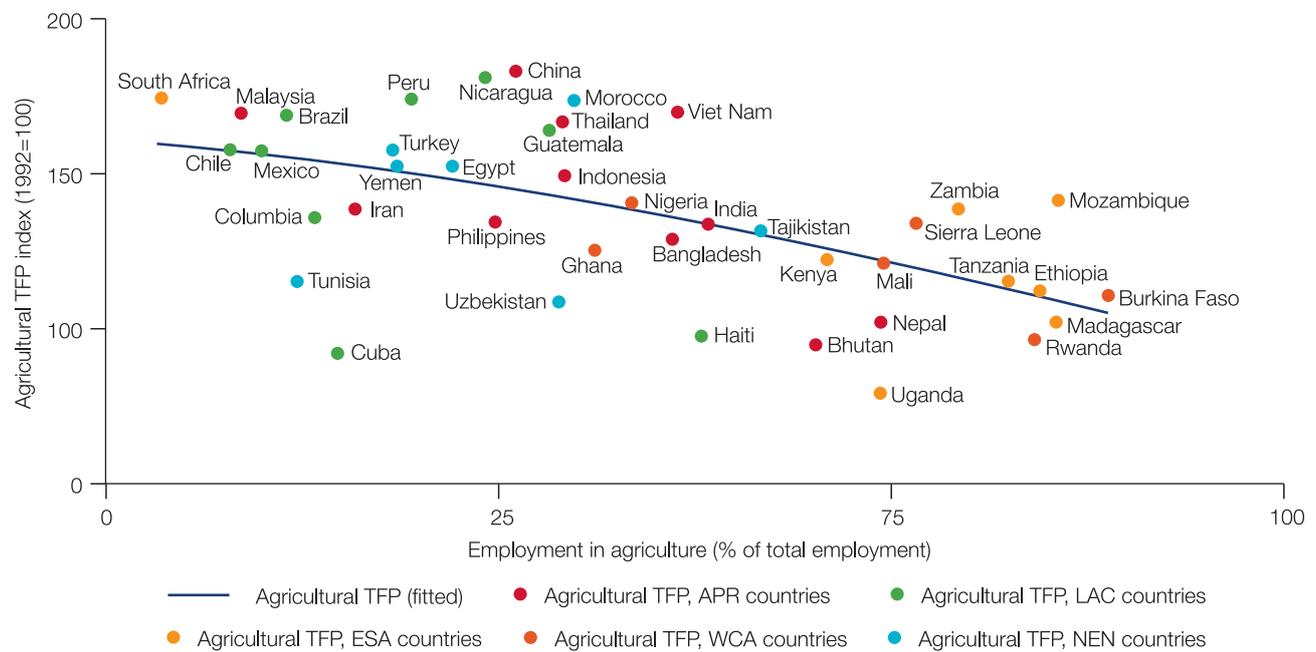
As noted elsewhere, food system transformation is a central feature of broader changes. Africa is no exception, as big changes are underway in

FIGURE 3.6 Trends in rural and urban poverty in ESA and WCA, 1990-2010



Source: IFAD, based on World Bank (2015).

FIGURE 3.7 Agricultural total factor productivity (TFP) by share of agriculture in employment



Source: IFAD calculations based on USDA and WDI indicators.

food system structure and functioning across the continent. Interlocking networks of relationships for production, processing, distribution and consumption of food commodities are shifting dramatically. Capacity to meet quality standards is increasingly crucial to access value chains (Reardon and Timmer 2012; Tschirley et al. 2015a, b).

Comprehensive data are not yet available, but several case studies suggest that African food markets have expanded hugely. Reardon et al. (2015) estimate, apparently conservatively, that between 1970 and 2010, rural-urban food supply chains in Africa moved about five times more food to the proliferating cities, rural market volume of purchases of food expanded eight times and marketed food volumes expanded six times, with much of the upsurge in the 1990s and 2000s.

The number of cities with more than 1 million inhabitants in Africa rose from two in 1950 to 50 in 2010, and is projected to rise to 93 by 2025. Smaller cities are growing even faster. The World Bank (2013) estimates that urban food markets will increase fourfold to exceed US\$400 billion by 2030 (figure 3.8).

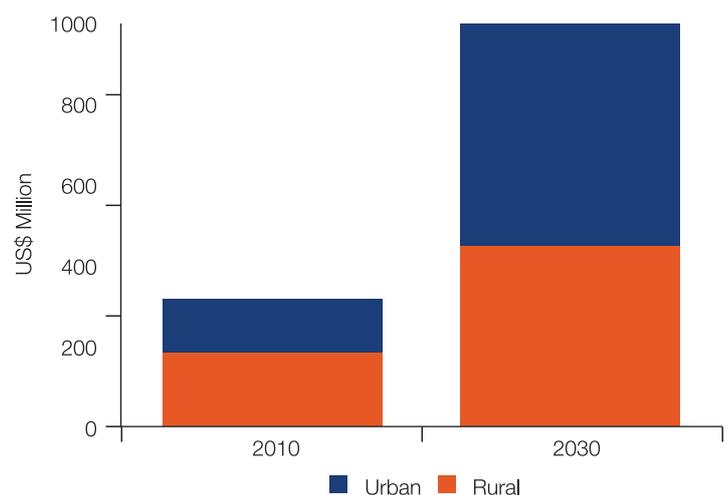
Urbanization and new consumption patterns have fuelled a sharp shift in diets beyond grains into non-grain foods, such as dairy, fish, meat, vegetables, fruit, and tubers, and heavily into processed foods. Despite the persistence of severe poverty, average incomes have risen and a middle class has emerged, further stimulating demand growth and diversification. The share of Africa's population in the middle class (with an income of US\$2-US\$20 a day in 2005 purchasing power parity, PPP, terms) rose from 24 per cent in 1990 to 33 per cent in 2008. As the population of sub-Saharan Africa was 495 million in 1990 and 822 million in 2010, this suggests an expansion of the middle class from 119 million to 271 million – more than doubling in two decades (Ncube et al. 2011).

Women are increasingly working outside the home and have less time to shop for and prepare food, while men often work far from home. The food-processing sector and fast-food segment have grown quickly as a result. Even the rural poor are buying processed foods: in ESA,

they spend 29 per cent of their food outlays on such food. Of processed food, 17 per cent is in the form of purchased milled grains classified as low-processed items, 48 per cent is non-grain low-processed foods and 35 per cent is high-processed food (Reardon et al. 2015).

Private investment in food systems is expanding quickly (World Bank 2013). What Reardon (2015) calls the “quiet revolution” in food supply chains spans retail, wholesale, first- and second-stage processing, packaging, branding and logistics. Also targeted for investment is the full range of product transformation functions: trucking, processing, storage and wholesaling. These transformations in food systems are very uneven among and within countries, with sharp differences in opportunity based on proximity to cities and access to key assets. Nevertheless, evidence suggests that farmers who are linked to growing urban and regional markets are investing in soil conservation, building organic matter in their soils, using productivity-enhancing seeds, breeds and fertilizers, and investing in irrigation and even sometimes machines (WFP 2015; World Bank 2013).

FIGURE 3.8 Projected food market growth in Africa to 2030



Source: World Bank (2013).

### Developments in the rural non-farm economy

The rural non-farm economy plays a decisive role in the pace and quality of change (see the Introduction). Non-agricultural labour is six times more productive than agricultural labour in Africa – against 4.5 times in other developing countries, 3.4 times in middle-income countries and 2.2 times in high-income countries (Gollin et al. 2013). Rural diversification associated with movement into the rural non-farm economy and secondary towns in Africa reduces poverty more than does rural-to-urban migration, complementing the finding that agricultural growth reduces poverty more than does non-agricultural growth (Dorosh and Thurlow 2014).

As is the case with much of Africa's rapidly changing food systems, comprehensive data on Africa's non-farm rural economy are lacking. But case studies and recent analysis of LSMS-ISA data point to growth that is widespread yet constrained by a range of physical and institutional factors.

Rural non-farm enterprises are on average less productive than their urban counterparts. The vast majority of rural non-farm enterprises are small, informal, household outfits operated for managing and coping with risks in high-risk environments, and are hobbled by poor access to affordable financial services such as insurance.

Productivity varies hugely among them. Businesses in transport, hospitality, and professional services are more productive than agri- or sales businesses, but the former have high sunk costs that act as barriers to entry. Women, often more burdened by household tasks, may be additionally constrained. Moreover, these types of activities tend to be more risky and would not therefore attract the large majority of rural households that join the non-farm enterprise sector to minimize their agricultural risks. Non-farm enterprises in rural areas are also less likely than those in urban areas to operate year-round, and are almost twice as likely to cease operations owing to death or illness. Many African rural households are engaged mainly in high-risk, rain-fed farming. Faced with such risks, and a range of market imperfections, households increasingly diversify income sources to reduce farming risk

through non-farm entrepreneurship (Nagler and Naude 2014).

These findings confirm the need to distinguish between rural household income diversification motivated by "push" and "pull" factors (Haggblade et al. 2007, 2010). Diversification driven by push factors sometimes extracts a household from poverty, while that tied to pull factors is usually associated with an upward spiral of incomes and assets.

However, the rural non-farm business environment has many difficulties, including lack of basic infrastructure, inadequate credit and insurance markets, poor tenure security, and ethnic and gender disparities. Concerns that the push into rural non-farm activity may merely add the equivalent of subsistence-level non-farm activity to a risky and poor agricultural income base are valid. Even if the non-farm household enterprise sector can offer an escape from poverty in the best-case scenario, it may only be able to offer low-paying vulnerable employment.<sup>43</sup> If Africa's budding rural non-farm sector is to offer a ladder to more rewarding work in the local economy, it must also become a more reliable source of regular liquidity (Barrett et al. 2015).

### Major inclusion challenges

Inclusion has many dimensions, including gender, race, ethnicity, disability, religion, sexual orientation and occupation. Exclusion from economic opportunity along any of these lines can be costly for society and painful for individuals. Exclusion correlates closely with poverty. Each dimension is relevant in most parts of Africa.

This section addresses three urgent challenges. One is unique to Africa: coping with the "youth bulge." The other two are features of all structural and rural transformation processes but have peculiarly African dimensions, given the continent's overall early stage of transformation. These involve coping with small and declining manufacturing sectors and overcoming deeply entrenched constraints on factor mobility. Cutting across all three challenges is Africa's urgent need for stable and remunerative rural jobs.

### Coping with the youth bulge

A focus on young people is not a standard approach for an inquiry into inclusion. Young people are a heterogeneous group, and not all are excluded or disadvantaged. An approach focusing on ethnicity or gender would draw in young people as well as older generations. But because of the demographic trends in Africa, a focus on inclusion of young people is warranted.

The size of Africa's cohorts of young adults (aged 15-24 and 25-34) is unprecedented (figure 3.9). As noted, exclusion on grounds of personal attributes or experience is undesirable for many reasons, but exclusion of young people is especially so. The cost of lost opportunities for young people is compounded as today's excluded youth become tomorrow's poor. Traditional societies confer advantages on the elderly through customary rules and command over resources. These rules and customs often serve (unintentionally) to disadvantage young people, and because of their deep roots in traditional social relations, they may not even be explicit.

On the timeline of human settlement, Africa is the oldest continent, but in the twenty-first century it is also the youngest. Half of the population is under 25 years old, and each year until 2035 there will be half a million more 15-year-olds than the year before (Filmer and Fox 2014). This is in contrast to South Asia, where the population of those under 24 will roughly stabilize over the same period, and to East Asia, where it will shrink. (Shrinkage is shown as the very light pink and blue areas in figure 3.9.)

The majority of young Africans will be in rural areas until around 2035, after which urbanization and natural growth will shift the balance towards towns and cities (Losch et al. 2012). The rapid population growth will add an estimated 370 million entrants to the labour force between 2015 and 2030 (AfDB et al. 2015). About 65 per cent of young people now work in agriculture, and another 25 per cent in informal household enterprises. About 16 per cent of young people now hold waged jobs in the public and private sectors. Most of these jobs are in services, and only about 3 per cent of wage jobs

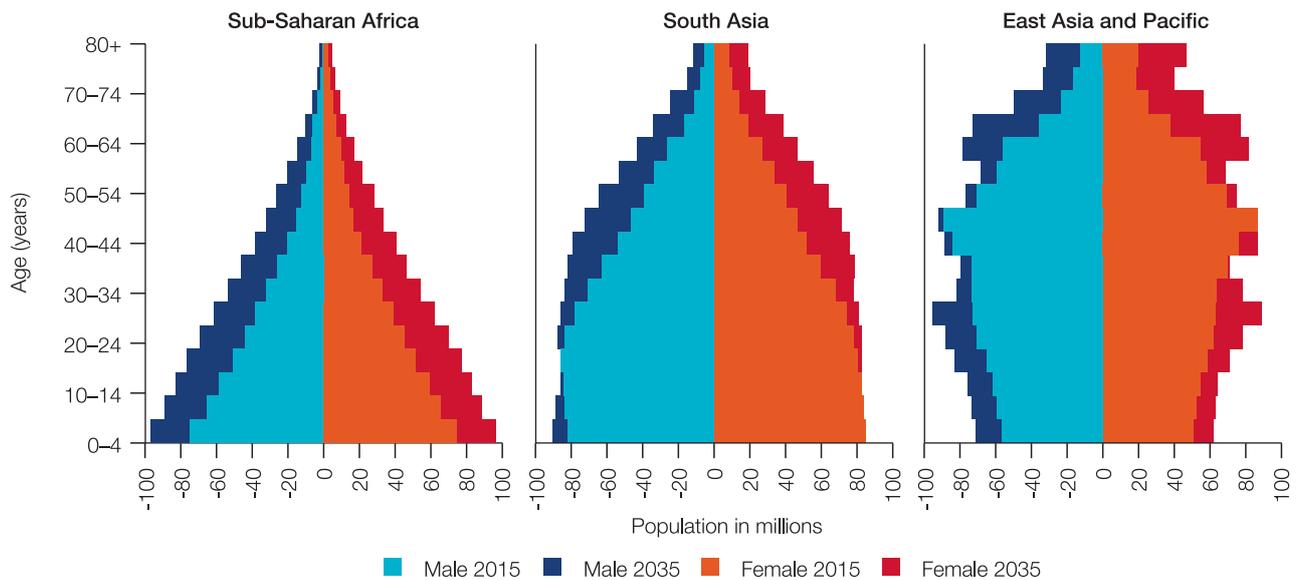
are in manufacturing, a considerably lower share than in other regions with comparable incomes. Among the best-educated cohort (those aged 15-24) half have not completed primary school (Filmer and Fox 2014).

Most young Africans grow up on farms and in villages. Many rural households pursue mixed livelihoods combining agriculture with off-farm employment. Agriculture is the major employer of both the young and not so young. Although young people quit agriculture when they see an opportunity elsewhere, demographic trends ensure that the number of young people staying on farms will grow. Thus attention should be on the challenges facing men and women who remain on farms, as well as those who leave them.

*For those who remain on the farm, the inclusion challenge springs from their status as smallholders who face major disadvantages in linking to modern value chains because of their low volumes of sales, poor market information and limited ability to meet the high-quality and credence requirements of many high-value outlets. These farmers are also high-cost, high-risk agents who rely on private agro-dealers and rural financial institutions. In many cases, even those smallholders who can access new markets may face new sources of competition and exclusion from corporate actors with market power. Access to R&D, finance and rural infrastructure is critical, as is enhanced organization in markets and incentives for the private sector to link to a greater number of small farmers (Hazell 2012).*

Agriculture presents special challenges owing to the low level of skills of young people, and because more experienced farmers who could mentor them often use outdated technology. Agricultural extension systems have traditionally been charged with training farmers and helping to introduce new technology, but have not had notable successes in recent years. Large public systems have been found to be expensive, poorly responsive to changing needs, biased towards men and patchy in their geographical coverage. Efforts to empower farmers to hire their own advisors are promising in theory, but in practice face high risks of political capture and

FIGURE 3.9 Population age structure in Africa and other regions



Source: Filmer and Fox (2014), based on United Nations (2011).

enmeshment in patronage. Farmer field schools have shown promise in some circumstances. Recently, volunteer farmer trainers backed up by extension workers have had success, including in reaching women farmers, but the impact of these programmes has not been rigorously tested (Lukuyu et al. 2012; Kiptot and Franzel 2014).

*For young Africans who exit agriculture, the issue is employability and entrepreneurial capacity. Neither is assured. Basic skills are needed to create opportunities, along with capabilities to make the right decisions for seizing opportunities and achieving greater access to credit. The solution for the skills of future young adults is to raise the quality of education of those now in school while maintaining and raising enrolment rates. (That will do little for those already out of school, however.) Demand for labour services is essential for absorbing new entrants to the workforce, but such a shift in demand can be achieved only by a dynamic change in economic structure.*

#### **Coping with a small and shrinking manufacturing base**

Countries undergoing structural transformation in the twenty-first century face a context quite

different from the nineteenth or twentieth centuries. Change has often been initiated by a productivity shock in agriculture that reduces costs of production, raises farm incomes and releases resources to other activities. A further driver enters when the non-agricultural sector boosts labour productivity and creates demand for new workers. Labour moves to higher productivity sectors in response to higher wages, and in the process raises aggregate productivity and growth even more. A transformation that depends not only (or primarily) on productivity growth within a sector, but also on migration of labour to sectors with higher productivity, yields rapid change (Rodrik 2013).

Historically, labour-intensive manufacturing sectors have been the most important destination of rural-urban migration. The manufacturing sector can achieve high levels of productivity even if other sectors are lagging behind (Introduction). As a latecomer to industrialization, Africa has a very small manufacturing base. Even if it grew quickly, the impact on overall employment would be small.

Although manufacturing should stay a priority for development in Africa, the fast-growing rural labour force will have to find jobs in agriculture, the rural non-farm sector

and services. The challenges of rapid labour force growth and manufacturing's weak capacity to absorb labour lead to tight constraints on inclusive structural and rural transformation.

During the transformation process, whether growth can be sustained as resources shift depends on how buoyant demand is in the sectors experiencing the productivity shock. If demand is constrained, the supply response will dampen prices, thereby attenuating new demand for labour, but the innovation will still create jobs in the more dynamic sectors.

Demand does not appear to be constraining Africa's agricultural growth, however. Food systems are changing rapidly to meet the rising demand and shifting preferences of middle-class urban consumers. The opportunity to produce and sell into growing local and regional markets is increasing. Continued rapid growth of imports shows that space is available for local farmers if they can produce competitively. Byerlee et al. (2014) estimate that urban food markets in Africa are set to increase fourfold to exceed US\$400 billion by 2030, with especially rapid growth in demand for rice, feed grains, poultry, dairy, vegetable oils, horticulture and processed foods, all of which are (or could be) produced locally.

The ability to sidestep any demand constraints will depend on the competitiveness of local production. Successful competition with imports will require attention to the logistical and policy gaps that reduce the performance of food processing, retailing and exports. Morris et al. (2009) find that in the vast area of Africa's Guinea Savannah – agro-climatically similar to Brazil's Cerrado zone – primary agricultural production is competitive, but competitiveness is lost after the farm gate. Uncompetitive production will be blocked by high costs, or alternatively poor quality. Bypassing demand constraints thus comes back to more rapid technical change in primary production, coupled with investment in infrastructure for logistics and policy and regulatory reform in food processing.

### **Overcoming barriers to factor mobility**

When innovation disrupts the established factor proportions in different sectors, whether they move depends on the costs of mobility. Factors can move within a sector, if technical change creates opportunities for internal adjustment, or between sectors in response to gradients in productivity and returns. The critical resources are land, labour (and the skills embodied in labour) and capital. The mobility of these resources determines whether change occurs, and their ownership and accessibility determines its inclusiveness.

*Land* is especially important, given the central importance of agriculture to inclusive transformations. Farm operators who already have land can introduce new technologies and management to increase productivity. This is common when land is very expensive or markets function poorly and access to new land is blocked. With sufficient capital and good skills, small, intensively worked farms can be efficient and profitable, as many studies have shown. But farms that fragment to accommodate young family members rapidly reach limits to efficiency, unless opportunities off the farm are sufficient to support part-time farming.

Considerable concern has been expressed about foreign investors purchasing land in conditions often characterized as "land grabs." Schoneveld (2014) documents 563 projects in 37 countries since 2005 covering 22.7 million hectares, of which 19.2 million hectares have a foreign firm as the sole or majority shareholder. The median project size is 12,300 ha. This area accounted for about 10 per cent of the total area under cropland in sub-Saharan Africa in 2012.

Yet, less well publicized, but perhaps of greater importance, is the rapid consolidation of landholding and transfer of ownership from traditional tenure to individual freehold by nationals, rather than outsiders. Jayne et al. (2014) studied land transactions in detail in Ghana, Kenya and Zambia. They found that in each country, the area recently acquired and now controlled by national medium-sized farmers (with holdings of 5-100 ha) is roughly twice that of the large-scale foreign acquisitions. At the same time, the number

of farm households with the smallest holdings has increased in each country: in Kenya, the number of households with less than 1 hectare doubled from 1 million to 2 million between 1994 and 2006. Farm structure is changing fast, with growth at both tails of the size distribution. The number of operators is growing at the lower tail, and cultivated area is shifting to the higher.

The increasing number of very small farms is caused by fragmentation of family holdings as young adults reach working age. In contrast, those acquiring medium-sized and larger farms do so through purchase, although some also started with larger-than-average holdings and have added to them. The people able to buy land for medium-sized holdings are a diverse group. In both Kenya and Zambia, about 60 per cent of the new owners have primary employment outside agriculture, often in the civil service, and 40 per cent are existing farmers adding to their acreage. Most of the latter group started with relatively large holdings through inheritance. In Ghana, the proportion of those operating medium-sized farms that started with fewer than 5 hectares is higher, suggesting more opportunities to transition from small to medium scale. Operators of the medium-sized farms in this sample cultivate half or less of their available area. The land consolidation does not yet appear to be creating a class of commercially viable and technically advanced farm operators.

One could conclude that the emerging farm ownership structure in many countries is not inclusive of young people and does not promote technical change. The smallest farms are more numerous and are unviable, except as part-time farms. The large farms could be commercially viable and offer opportunities for waged employment, but the way they are managed casts doubt on this. Owners of large and medium-sized tracts could rent out the portions they do not cultivate themselves, and thereby create opportunities for young people to enter farming through rental agreements. Working with LSMS data, Deininger et al. (2015) find that 10-20 per cent of farm operators rent in at least some land, and that this is most prevalent among those with very small holdings. Idle area on medium-sized and large holdings, where rental

markets function reasonably well suggests that land markets are not moving land into more productive use. Land markets are failing because many potential participants have limited access, and because gains to speculative landholding are greater than the costs of managing rental contracts. In the presence of these failures, large areas are already converted and more conversion is likely.

Mobility of *labour* depends largely on the workers' skills. Young Africans of this generation have spent more years in school than their older relatives. The doubling and tripling of primary school completion rates since 1990 is a remarkable achievement. The *quality* of education, however, has not improved commensurately, with the result that even those who complete school may have learned little that they can use to better their lives. Problems of quantity and quality of schooling in rural areas are more severe than in urban areas: about 60 per cent of those under 35 in rural areas have incomplete primary school and many struggle with basic literacy and numeracy (Filmer and Fox 2014). The least educated remain in agriculture, and those with slightly better skills gravitate towards non-farm employment.

*Capital* is sufficiently mobile between sectors and over national boundaries, due to the banking sector, that poor capital mobility is not a major constraint to transformation. The difficulties that poor people face in accessing banking services are well known: distance to branches, high costs of small transactions, absence of collateral, asymmetries of information and more. All of these difficulties are greater for young people. Recent developments in branchless banking, electronic fund transfers, biometric identification and communications provide technical fixes. A number of non-governmental organizations (NGOs) and aid agencies (including IFAD, box 3.1) have piloted approaches to financial inclusion that are relevant to young people. These include bundling of financial services and skills mentorship, credit and self-help groups, partial guarantees, and other instruments. Careful monitoring of the success of different approaches will help identify those that can be scaled up.

**BOX 3.1 Youth employment in West and Central Africa**

IFAD's work in West and Central Africa reaches out to young people with the aim of enabling them to develop sustainable rural livelihoods and participate more fully in community affairs. IFAD focuses on multiple entry points so young people can obtain decent jobs in the rural economy.

In The Gambia, for example, projects are working with youth *kafos* (traditional village groups) to increase access to productive land. Through these *kafos*, young people gain access to land that they can cultivate. The projects rehabilitate existing vegetable gardens to improve production and provide training to *kafo* members in best practices and marketing of vegetables. Youth *kafos* also receive starter kits with seeds, fertilizers, chemicals and small tools, as well as small equipment for watering, transporting and preparing produce for markets. To secure these lands, the projects support land registration with written agreements between the *kafo*, traditional authorities and local governments.

In Sierra Leone, IFAD supports assistance for young people through financial services associations. Each association in the programme has a manager and a cashier from the local community who must be 21 to 29 years old. The programme provides for their training. Hiring young people is seen as an investment in the associations' sustainability, helping to integrate them with their communities.

In Nigeria, an IFAD-supported programme fostered a new category of entrepreneur-cum-mentor called the N-Agripreneur. These are dynamic university graduates who own and run small enterprises. Their role is to act as intermediaries between small, market-oriented farmers, mostly youth, and large agro-industries and wholesalers.

As part of their mandate, the N-Agripreneurs make their business available both as an engagement platform for business development services to producers, especially young people who are interested in agro-based activities, and as a knowledge-sharing arena for farming communities. The project has supported the creation of an "inter-state youth in agriculture" platform to facilitate the sharing of knowledge, experiences, and expertise between young entrepreneurs and market-oriented farmers.

Source: IFAD (2015).

## Transformation and inclusion

Barriers to inclusive structural and rural transformation in Africa are myriad and complex. This section explores the extent to which this report's core hypotheses on inclusive rural transformation are borne out in Africa. As in the other regional chapters, the focus is on linkages among structural transformation, rural transformation and inclusion, as captured by rural poverty.

Structural transformation is measured as the average annual percentage change of non-agriculture in GDP over 1995-2015. Rural transformation is measured as the average annual percentage change in agricultural labour productivity as captured by agricultural value added per worker. For both, a positive value

represents more transformation. Inclusion is measured as the average annual percentage change in the extreme (US\$1.25/day) rural poverty rate. A larger negative value represents a greater reduction in rural poverty.

Table 3.4 shows performance on these three indicators for 15 countries in ESA and 12 in WCA. Performance in each case is analysed relative to averages across all countries for countries in their subregion.

Those countries showing more rapid reduction in rural poverty (Ethiopia, Malawi, Tanzania, South Africa, Cabo Verde, Cameroon, Namibia, Burundi, Uganda, Guinea, Burkina Faso, Mali, Senegal, Rwanda and Mozambique) show rapid structural transformation, rapid rural transformation or both. In no country has rural

TABLE 3.4 Distributions of countries' outcomes for transformation and inclusion in Africa

Speed of structural and rural transformation		Rural poverty reduction	
		Fast	Slow
Fast structural transformation	Fast rural transformation	Cabo Verde	Congo
		Cameroon	Nigeria
		Ethiopia	
		Malawi	
		South Africa*	
		Tanzania	
	Slow rural transformation	Burkina Faso	Botswana*
		Burundi	Lesotho
		Guinea	Mauritania
		Mali	Zambia
		Namibia*	
		Senegal	
		Uganda	
Slow structural transformation	Fast rural transformation	Mozambique	Benin
		Rwanda	Swaziland
	Slow rural transformation		Central African Republic
			Kenya
			Madagascar
			Sierra Leone
			Togo

Notes: fast structural transformation refers to countries with above-average rates of structural transformation for ESA and WCA. Slow structural transformation countries are those with rates below average for their regions. Rural transformation and poverty reduction are also measured relative to averages for each region. ESA countries are black; WCA countries are shown in orange.

\* denotes the three African countries that, as described in the Introduction, are automatically classified as having fast structural transformation because their initial share of non-agriculture in GDP exceeds 90 per cent.

Source: authors.

poverty declined significantly without rapid structural or rural transformation. Rwanda and Mozambique registered relatively slow structural transformation but fast rural transformation and thus were able to reduce poverty significantly, pointing to the critical role of rural transformation for inclusion (and supporting the report's core hypotheses).

In contrast, Nigeria and Congo registered significant structural and rural transformation but achieved less than average reduction in rural poverty. Other moderate or slow reducers of rural poverty are Botswana, Lesotho, Zambia, Mauritania, Swaziland and Benin, which experienced either rapid rural transformation or above-average structural transformation but with little impact on rural poverty. The Central African Republic, Kenya, Madagascar, Sierra Leone and Togo showed less than average structural transformation, rural transformation and reduction in rural poverty.

These results confirm the report's hypotheses that countries experiencing rapid structural and rural change will see rapid reduction of rural poverty, and those with little change in either dimension will not. However, the countries in the middle – those with rapid structural or rural change but poor performance in poverty reduction – can provide an important insight into the nature of transformation and its inclusiveness.

Structural transformation without technical dynamism through innovation in agriculture is a common feature of the countries in this middle territory. In many cases this entails labour going from poor farms into the informal and service sectors that offer little improvement in earnings. Similarly, increased agricultural production without concomitant dynamism in other sectors is likely to be choked off through demand constraints. Even if rural and structural transformations are moving rapidly, many will not be in a position to benefit. The number of such left-out people will be sharply cut if systemic barriers blocking opportunities for young people can be diminished or removed. Additional measures are needed to actively engage these people.

## Conclusions and implications for policy and investment

The generally positive narrative about Africa's prospects is valid, but must be tempered by recognition of challenging trends that threaten continued progress. Unlike other regions, Africa's trajectory of successful long-term structural transformation will start from agriculture and move through *services* and then to a more diversified manufacturing sector, thereafter reverting to expansion of highly skilled services. If expansion of the already small manufacturing sector is blocked by infrastructure gaps and regulatory interference, transformation driven by that sector will likely stall as the service sector reaches its expansion limit. In any scenario, however, agriculture will continue to play a greater role than elsewhere, because factor proportions and comparative advantage favour it. But how well the sector can realize its potential will depend largely on efforts to accelerate technical innovation.

The agricultural production that still accounts for one quarter of the continent's GDP remains largely untransformed, hobbling the rural non-farm economy, especially rural SMEs that could be potent sources of jobs and incomes. Comprehensive rural transformation in agriculturally dependent countries is constrained when not led by technical dynamism. With few exceptions, such dynamism is weak in African agriculture despite recent acceleration. In addition, mobility of factors (especially land) among alternative uses constrains rural transformation. So growth has not been as effective in reducing poverty as it would have been had agricultural productivity grown faster. The impediments to structural and rural transformation are particularly hard on young people entering the labour force in record numbers.

Public policy and investment must focus on two elements: leveraging burgeoning demand emanating from urbanization and dietary diversification to deepen employment in the rural non-farm economy, and developing inclusive food supply chains to provision ever-increasing numbers of consumers. Rural suppliers need to sell to sources of dynamic,

growing demand, especially to domestic urban markets.

Broad objectives and priorities for policy and investment include improving market performance and meeting new demands, enhancing access to land and tenure security for smallholders and investors, financing agribusiness, upgrading infrastructure, using public-private partnerships where possible, building skills and entrepreneurship, and making agribusiness inclusive by integrating market-oriented smallholders and rural communities into dynamic value chains. The many measures required have been well set out in several recent publications, notably in World Bank (2013), Yumkella et al. (2011), the African Center for Economic Transformation (ACET 2014), United Nations Conference on Trade and Development (UNCTAD 2015), and the UK Department for International Development (DFID 2015).

Given the pivotal role of agriculture and the non-farm rural economy in promoting inclusive transformation throughout Africa, the core goal must be job creation, which can be achieved through various pathways. Focusing on rural youth, it is useful to distinguish between those who stay on farm and those who leave.

Improving prospects for tomorrow's farmers entails more intensive and profitable management of existing farms, backed by measures that enhance access to improved technology, markets, finance, information and physical infrastructure. Most young African farmers lack clear and secure property rights. Recent progress in land administration and documentation of tenure rights must be sustained. Rental markets are functioning, but they must be strengthened and deepened to counter the rapid increase in the number of farms too small to be economically viable as primary occupations. Special attention must be paid to the needs of women farmers – both young and old – on whose shoulders rest many farm activities and household chores. Closing enduring gender gaps in access to core assets, inputs, and services is vital. Investment in the agricultural science community must accelerate, with special attention given to promoting the

entry of large numbers of well-trained men and women in their 20s and 30s.

As for the Africans who exit farming – or who would like to – their employability and their entrepreneurial capacity remain in question. A major need is to build skills – a need far broader than the traditional focus on access to and quality of basic education (Kharas 2014). To enhance employability, targeted improvement of key technological skills, vocational training for jobs in the commercial sector, and basic “life skills” for success in the working environment are required. Young people also require support to start and run a business, with an emphasis on basic business skills like planning, marketing, accounting and negotiating. Beyond improved skills must be greater access to financial services.

Africa's rural youth are largely self-employed in the informal economy. Growth and deepening of that informal side should be supported, with a focus on the rural SMEs that must provide jobs and incomes over the next few decades. Street vendors need space, sanitation facilities, lighting and security. Food purveyors and their customers need basic enforcement of food safety rules and electric power for cooking and refrigeration. Many informal enterprises would benefit from regularized shared space with basic infrastructure amenities, including those on transit routes, as well as transparent enforcement of regulations by public officials.

Attracting private investment into agriculture and the rural non-farm economy is vital. But many agricultural regulations in Africa actually serve to deter rather than encourage such investment (AGRA 2012). Reforming the rules that limit private entry and investment in value chains that serve smallholders must be a priority, and innovation in the communications technologies favoured by youth must continue.

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## Spotlight 3: Resilience to shocks

### Structural and rural transformation – effects on resilience

The forces underlying structural and rural transformation – especially commercialization and specialization – can catalyse new kinds of assets and capabilities that yield new livelihood options and institutional arrangements. Together, these can confer greater resilience to shocks and boost capacity to recover from them. But those same forces can breed new hazards, vulnerabilities and risks that in certain circumstances can combine to blunt the capacity to withstand and recover from shocks.

### Incidence and types of shocks

Risk and vulnerability are chronic realities of social and economic life in rural areas (Barrett and Carter 2012), where the combination of weather, geography, ecology, population shifts, sociocultural factors and infrastructure development renders most rural populations vulnerable to various shocks, including:

- *Climate change*, leading to greater frequency of droughts, storms and floods, often wreaking havoc on the agricultural production systems underpinning most rural livelihood systems.
- *Sharp seasonal volatility* in prices of key goods, in particular staples, as a consequence of the interaction of the agricultural calendar with thin infrastructure.
- *Terms-of-trade shocks*, which often generate effects transmitted sharply to rural communities producing exportables (Broda and Tille 2003).
- *Access to public services*, which is especially challenging given the wide dispersion in human settlements and reduces the access of rural people to coping mechanisms.
- *Physical displacement and commercial disruption*, stemming from civil strife, often cutting sharply through rural communities.

### Structural and rural transformation and shocks

Structural and rural transformation is a disruptive process – enhancing or destroying the value of human, physical and institutional capacity while creating demand for new capacities (Johnston and Kilby 1975). This offers scope for enhanced resilience or greater vulnerability (figure S3.1).

On the positive side, the forces underlying transformation can catalyse and reward the acquisition and use of new kinds of capabilities that yield livelihood options, organizational forms and institutional arrangements, which together can confer greater resilience to shocks. Conversely, the same forces can breed new hazards, vulnerabilities and risks that can combine to overwhelm traditional coping mechanisms and blunt the capacity to withstand and recover from shocks, potentially driving households and communities into poverty traps.

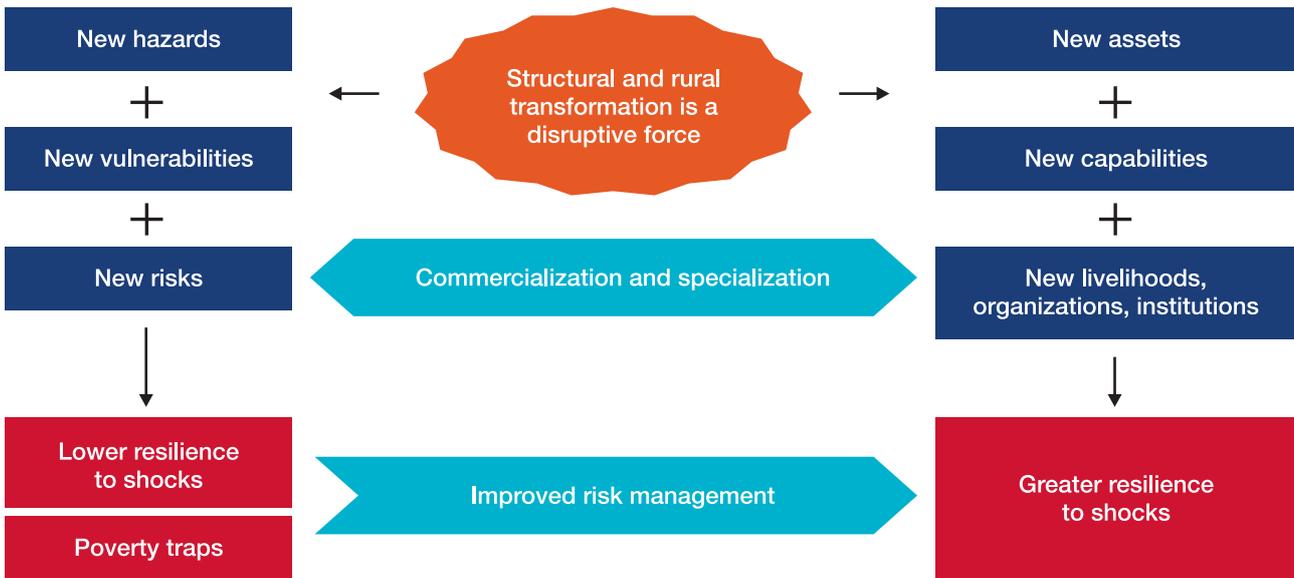
### Resilience-enhancing effects of rural and structural transformation

As structural transformation reduces the proportion of the population whose livelihoods are reliant on natural resources and agriculture, it is likely to reduce the impact of a weather event on overall well-being. More specifically, coupled with specialization, the commercial imperatives that propel structural and rural transformation generate demand for new assets and capabilities. Households, communities and countries able to acquire and exercise them are rewarded in the form of improved livelihood options (box S3.1).

#### *New assets*

Structural transformation entrains specialized commercial activity (Johnston and Kilby 1975). Assets required for application in commercial activity must be acquired and applied. These assets include storage and handling capacity,

FIGURE S3.1 Analytical framework



Source: Authors.

**BOX S3.1 Coping with floods in Bangladesh**

Historically, Bangladesh has been hit by a major cyclone or widespread flooding once every three years (World Bank 2013). In 1970, a cyclone killed nearly half a million Bangladeshis. A cyclone of similar strength in 2007 killed 4,000 (DFID 2011). In 1998, a major flood – dubbed the “flood of the century” – which affected about 45 million people, led to 2,300 deaths (del Ninno et al. 2001). Thus, in the years since 1970, Bangladesh has become more resilient. Also over the period, it has experienced an extraordinary structural transformation, from an agricultural economy to a highly diversified one with industry and services.

A detailed analysis of the 1998 floods sheds light on how key pillars of the structural transformation contributed to the greater resilience of rural communities (del Ninno et al. 2001). Communities now had assets and capabilities that allowed pursuit of livelihoods that proved to be more resilient.

Most flood-exposed households were able to avoid severe declines in welfare through a combination of private actions made possible by changes in the structure and functioning of the rural economy.

For households, these actions included major food purchases on the market, asset sales, wage employment and borrowing. Overall employment fell during the floods, but most workers found new jobs. The market for rice, the major food staple, functioned well, with the number of marketing agents having expanded greatly since the 1970s. The size of the market, investments in critical commercial infrastructure and the easing of restrictions on private trade led to an integrated and well-functioning market.

Related research on factors influencing wealth dynamics identifies substantial diversification of income sources in rural areas, along with ready access to well-functioning markets for labour and capital, both of which enhance households’ capacities to cope with shocks.

Sources: del Ninno et al. 2001; DFID 2011; World Bank 2013.

transportation equipment and related facilities, processing machinery and financial capital (Reardon et al. 2009). Recent studies of agrifood value chains and market infrastructure in several countries reveal significant investment in all of these areas within rapidly transforming food systems (Reardon 2015; Tschirley et al. 2015a, 2015b). With successful structural transformation, important changes in rural asset holdings also take place at the household level, as diversified, low-productivity, subsistence-oriented agriculture gives way to agrifood systems in which production is marked by greater specialization on-farm, but greater market-oriented diversification in aggregate (Haggblade et al. 2007; Johnston and Kilby 1975; Reardon and Timmer 2014).

#### *New capabilities*

Structural transformation transfers many functions from households to specialist individuals and firms (Tomich et al. 1995), such as those linked to creating and maintaining commercial capacity. Literacy and numeracy are essential (Haddad et al. 2015). Financial literacy is especially important, as even small enterprises in far-flung locales increasingly must be operated as businesses (ACDI/VOCA 2015).

#### *Improved resilience*

Where structural and rural transformation induces acquisition of new assets and capabilities – in turn, allowing for pursuit of new livelihoods, organizational forms and institutional arrangements – households and communities should be better able to mitigate and recover from shocks. The core drivers of enhanced resilience are diversified production systems, diversified income sources, improved education, increased borrowing and savings, greater remittances from urban areas, enhanced management of natural resources and more effective public institutions.

#### **New vulnerabilities and risks under structural and rural transformation**

The economic forces of structural and rural transformation may increase risk by rendering

some rural dwellers more exposed to new kinds of hazards and thus more susceptible to shocks:

- As commercialization and specialization rise, markets for core production factors (land, labour and finance) develop, serving those most able to access them. First-order economic hazards are threefold – landlessness and land-tenure insecurity, joblessness and underemployment, and financial exclusion (Barrett et al. 2001; Haggblade et al. 2007).
- Risks increased by commercialization and specialization include:
  - Production risks linked to the adoption of new inputs in new production lines (Pender and Alemu 2007) or to the loss of diversity in production systems (Pingali and Rosegrant 1995).
  - Price risks linked to market structure including non-competitive elements (Kirsten et al. 2009).
  - Policy risks tied to unpredictable public action in markets (Dorward and Chirwa 2009).
  - Health risks associated with industrial inputs, like pesticides and herbicides (Watts 2013).
- Added production can induce natural resource depletion and environmental degradation where appropriate policies, institutions and investments are not in place (see Spotlight 7), exposing households and communities to new hazards.

#### **Policy and investment implications**

Research indicates that the forces underlying structural and rural transformation generate impacts that do more to increase rural residents' capacity to cope with shocks than to decrease it. But to the extent that the overall aim is inclusive transformation, there is room for policy change based on improved risk management:

1. *Promoting disaster preparedness and response* reduces the effects of given shocks while promoting long-term resilience, which, in turn, reduces the need for future emergency operations (WMO 2009).

2. *Enhancing risk transfer* by supporting micro-level insurance instruments, expanding the use of public works and employment-guarantee schemes, and widening access to finance for high-risk groups.

3. *Encouraging prudent risk-taking for livelihood diversification* by promoting financial literacy and rural commercial organizations, incentives for financial institutions to operate in rural areas and conditional transfers linked to capacity strengthening.

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## CHAPTER 4

# Structural and rural transformations in the Near East, North Africa, Europe and Central Asia



## Summary

Countries in the Near East, North Africa, Europe and Central Asia (NENA) that have achieved an inclusive development pattern, with rapid reduction in rural poverty and a concomitant narrowing of the urban-rural poverty gap, have given careful attention to the way rural transformation interacts with wider structural transformation.

Similarly, NENA countries, which have relatively positive environments for inclusive and sustainable rural transformation, tend to rely on a long-term vision, a coherent set of core policies and solid institutions. Countries lagging behind tend to lack these elements.

These findings confirm the key hypothesis on which the analytical framework of this report is built. That when structural and rural transformations evolve in step, the urban-rural poverty gap narrows and rural development is put solidly on an inclusive and sustainable trajectory. Conversely, when the two transformations diverge, that gap widens, and swathes of rural inhabitants are excluded from the benefits of economic growth. That two-way interaction between structural and rural transformations – a major theme of this report – is captured in this chapter through analysis of rural-urban population trends and encapsulated in four country case studies.

A review of empirical studies analysing structural transformation in the region points to a “structural deficit” resulting from:

- Narrow economic diversification and over-reliance on low-technology content in exports. These have trammelled structural transformation, leaving the informal sector to feed on the steady erosion of increasingly uncompetitive manufacturing and a bloated public sector.
- The absence of a productivity-enhancing sector because of the productivity differentials between sectors being too low to trigger rapid structural and rural transformations.

This chapter covers the transition countries of the two subregions of the Near East and North Africa (NENA) and the countries of

the former Soviet Union, now known as the Commonwealth of Independent States (CIS).<sup>44</sup> Despite high diversity in their geography, history, natural resource endowments and political contexts, these countries have in common deep and far-reaching political and economic transitions that are heavily determining their structural and rural transformations. Both subregions are grappling with the aftermath of two major events separated by nearly two decades – the far-reaching remodelling of CIS countries triggered by the demise of the Soviet Union in the early 1990s and the current reshaping of NENA political and socio-economic landscapes unleashed by the Arab “revolutions” that began in 2011.

### Changes in the NENA subregion

The period since 1980 has seen the following key phases in the NENA subregion:

- *A post-colonial development model.* This was based on state central planning, import substitution industrialization and fairly generous redistributive policies in the oil-producing and non-oil-producing Arab countries, fuelled by the oil windfall and, to some degree, remittances.
- *Structural adjustment programmes starting in the mid-1980s.* These followed the strictures of the Bretton Woods institutions after oil prices collapsed, but uneven and hesitant reform accompanied by “crony capitalism” exacerbated inequality, including rural-urban disparities. For instance, Tunisia’s economic model, adopted during the period, resulted in a skewed territorial approach favouring coastal areas at the expense of the internal, predominantly rural ones, even though the country achieved macroeconomic stability and quite high economic growth.
- *The more recent episode of social upheaval, with attendant political transitions and the neologism “Arab countries in transition.”* Some NENA countries still experience game-changing political, social and economic events akin to those unleashed by the collapse of the Soviet Union two decades ago. The macroeconomic fundamentals of

the Arab countries in transition have markedly deteriorated, including a severe contraction in economic growth, an alarming rise in unemployment (particularly among youth),<sup>45</sup> a deteriorating balance of payments, shrinking foreign currency reserves and steeper inflation. This bleak picture has made the traditionally neglected rural areas sink deeper into deprivation.

### Changes in the CIS subregion

The once-in-a-lifetime transition from state-led to private-sector led economies is proceeding unabated in most countries, albeit at different speeds and with multiple setbacks. The speed and extent of economic reforms vary widely. In the commodity-rich CIS countries, such as Kazakhstan and Azerbaijan, rural poverty reduction has been faster than in commodity-poor ones because of the substantial social transfers made possible by growing fiscal space. Underlying structural transformations are still lagging, however, and there is an acute necessity to foster more inclusiveness by broadening the economic base from the dominant capital-intensive oil industry towards more labour-intensive non-oil sectors.

The interdependence with the Russian economy – via investment, trade and remittance channels – is a key factor in the subregion's economic performance. Any Russian economic downturn ripples through the entire subregion through lost export markets, currency devaluations and receding remittances.

Another key factor in rural transformation is the still unfinished land-tenure reform that is shifting huge tracts of farmland from state to private ownership. A move to individuals holding land remains the main factor, reversing the initial transitional decline of agricultural output in the subregion. Poorly devised land distribution programmes in some CIS countries have led, however, to the over-parcelling of farmland and subsequent attempts to re-consolidate through land repurchases or leasing arrangements, to create larger corporate farms. This trend of farm enlargement and its consequences for rural inequality has accelerated in recent years.

This chapter addresses the report's three overarching questions while considering the NEN region's particular developmental context:

1. What are the different pathways or patterns of structural and rural transformations?
2. What are the consequences for rural poverty reduction and inclusion, and how do those consequences shape the broad options for development pathways and policies to make rural transformation more inclusive?
3. What can be done by governments, the private sector, civil society and development partners – including IFAD – to stimulate and support inclusive and sustainable rural transformation?

In line with the definitions in box 4.1, the chapter treats rural transformation as a component of the overall structural transformation of the economy, given their tight interlinkage. Simply put, rural transformation refers to changes occurring in the rural space in the course of the broader structural transformation of a country's entire economy and territory.

To answer the questions, we developed an analytical framework (box 4.2), which posits that a diverse set of drivers of socio-economic change are at play at any given time during transformation processes. These drivers can be country specific or span an entire geographical region. In addition, drivers can be structural and quite slow moving, reflecting endowments in natural resources, or conjunctural, stemming from policy shifts or disruptive social unrest.

The interplay of the drivers of change yields both structural and rural transformation outcomes. This chapter analyses those outcomes through the prism of inclusiveness to discern "stylized" rural transformation pathways and, thereby, inform future rural development interventions in the region.

This chapter drew from a desk review of relevant empirical studies and literature and a cross-country comparative analysis complemented by four country case studies.

The chapter consists of four sections. The first provides an overview of key drivers of structural transformation – or lack thereof – in the region. The second section probes the interactions

#### BOX 4.1 Structural and rural transformation defined

The RDR 2016 defines structural and rural transformations as follows:

**Structural transformation** is both a cause and an effect of economic growth. A historical process, it continues throughout development. It involves rising productivities in agriculture and the urban economy, a change in the composition of the economy from a preponderance of agriculture to industry and services, rising involvement in international trade, growing rural-urban migration and urbanization, and the realization of a demographic transition from high to low birth rates. It leads to profound political, cultural, social and environmental stresses, which present major challenges for long-term sustainability along these dimensions.

**Rural transformation** is embedded in all the processes of structural transformation. It both contributes to and is driven by structural transformation and is subject to the associated stresses. It involves rising agricultural productivity, commercialization and diversification of production patterns and livelihoods within the agricultural sector and towards the rural non-farm sector. It alters the structure of land holdings, the technology in use and the distribution and dynamics of the population and the labour force. The objective of inclusive rural transformation is to generate improved and more stable livelihoods for all rural people, including small-scale farmers, land-poor and landless workers, women and youth, marginalized ethnic groups and victims of disaster and conflict.

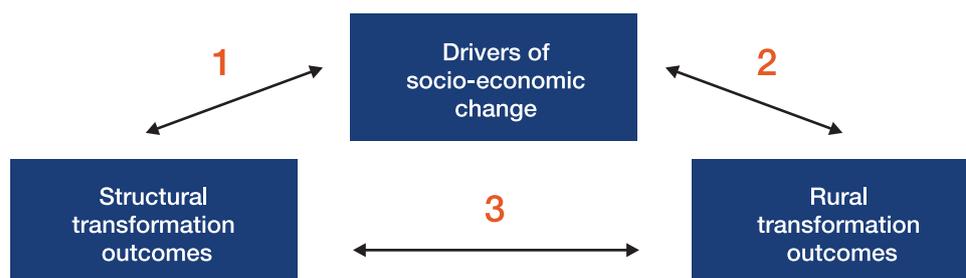
#### BOX 4.2 Drivers of change – analytical framework

Description of the three types of interactions:

1: This link probes the extent to which selected drivers acted as “accelerators” or “brakes” on overall structural transformation by focusing on both the pace dimension (captured by aggregate growth ratios) and the quality of growth aspects (captured through relevant inclusiveness indicators).

2: This link examines whether key drivers acted as enhancers or impediments to the diversification of rural economies and social-inclusion outcomes, mainly within rural areas. Analysing inclusion-related outcomes focuses on the degree of inequality between the various segments of rural inhabitants. Up-to-date empirical findings of the rural development literature on smallholdings versus large farms, men versus women, youth versus adults and indigenous versus settlers, are reflected, mainly for rural space. Outcomes expressed in rural-urban disparities involving an analysis of dynamic rural-urban linkages are not addressed in this interaction. Those disparities are handled under interaction 3.

3: Given the causality between productivity growth and structural change, this link mainly serves to describe whether structural and rural transformations have evolved in steps or have diverged. This two-way interaction (a major theme of the RDR 2016) is largely captured through analysis of rural-urban flows and gaps.



between structural and rural transformation outcomes, with an emphasis on rural-urban disparities. It also proposes a typology to cluster the countries in the region according to the pace of their structural and rural transformations and associated rural poverty reduction outcomes. The third section illustrates the proposed typology, using four case studies spanning the entire range of typologies and relying on more granular data derived from living standards measurement study-type national surveys. The fourth section presents policy recommendations to steer rural transformation onto inclusive pathways.

### Key drivers and outcomes of structural and rural transformations

This section analyses the four key drivers of structural change, focusing on transformation outcomes in rural space:

- The demographic situation
- Natural resource endowments
- Fragility attributes, including conflicts
- Policy choices and corrective measures.

The first two drivers have high inertia – they can drive transformations, but do so very slowly. The third driver tends to accelerate urbanization through forced population movements, often without any meaningful underlying structural changes in the economy. The fourth stems from policymakers' attempts to correct perceived structural and rural transformation shortcomings and steer development to selected pathways.

The chapter posits that the interplay of these drivers (figure 4.1) constantly shapes rural economies and their ability to offer inclusive livelihood options to rural inhabitants. The following four key outcomes capture chiefly such transformation processes:

- Poverty and inequality rates, captured mainly through rural-urban gap analysis
- Labour-market outcomes, in particular unemployment and underemployment rates
- Territorial reconfiguration (such as the ever-shifting boundaries between rural and urban spaces)
- Agricultural sector competitiveness and its ability – or inability – to foster vibrant, diverse rural non-farm economies.

### Demographic situation

Labour movement between sectors with different labour productivity – a traditional gauge of structural and rural transformations – cannot be fully understood unless set against the demographic transition.

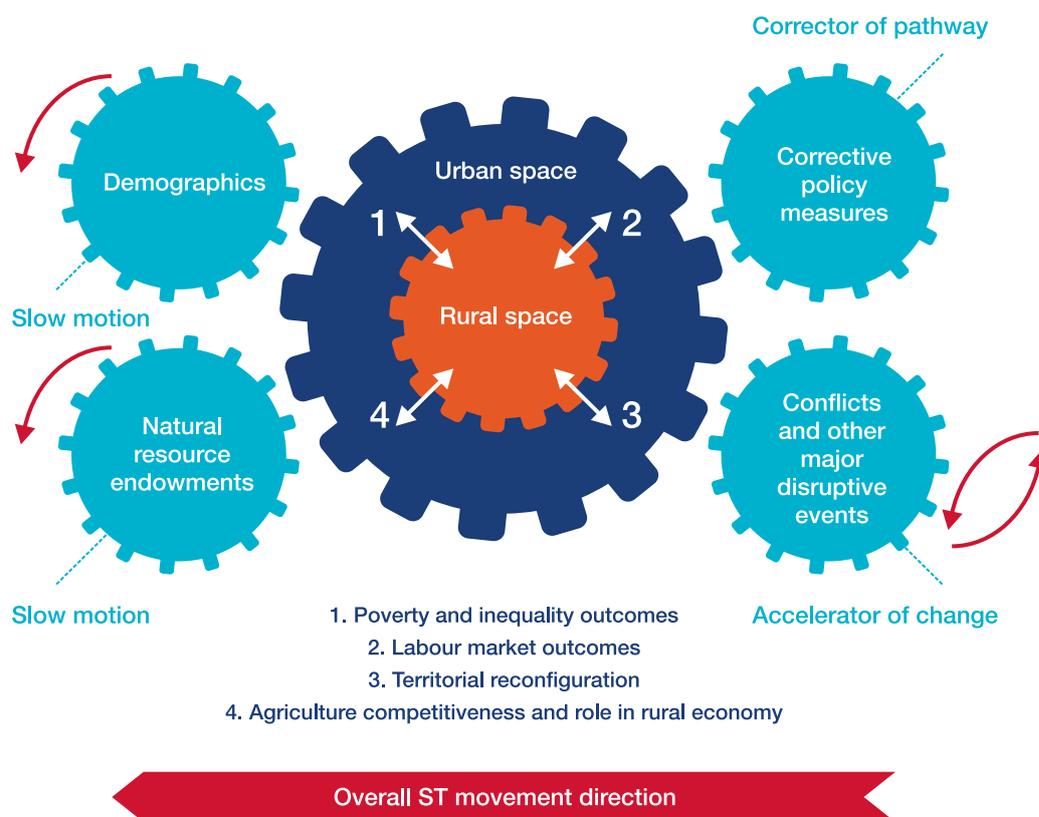
The overall population in NENA countries grew by 3.1 per cent a year during 1980-2010, a high rate compared to the 1 per cent in CIS countries during the same period (UNDESA 2013). Rates by country vary widely. For instance, in the NENA subregion, the population in Yemen grew at 3.5 per cent and that in Sudan at 3.0 per cent each year over the period, while those in Tunisia and Turkey grew at 1.7 per cent. In the CIS, Tajikistan grew at 2.2 per cent a year, but Kazakhstan at only 0.3 per cent.

Outcomes in NENA are largely driven by demographic attributes, such as cultural norms and associated fertility. In particular, the region is experiencing relentless pressure from the supply side of the labour market (Ben Jelili 2010) resulting from the persistent or lagged effects of high fertility and an upward trend in female labour-force participation.

Relatively slow structural transformation and the linked “structural deficit” (discussed in the next section) have depressed demand for labour, particularly for skilled workers. The region's labour market is, therefore, in a state of excess supply, leading to informality, emigration and high unemployment<sup>46</sup> among youth, which is widely described as a missed opportunity. The demographic dividend commonly associated with growing industrialization-driven demand for labour, coupled with a steady growth of the workforce, as seen in East and South-East Asia, largely failed to materialize in the NENA subregion. A similar pattern of an unfulfilled demographic dividend is prevailing in the CIS subregion, and particularly among high population growth countries such as Tajikistan.

That said, the inability of the region's economies to deliver decent jobs to its steadily growing working-age population, including its bulging youth cohort,<sup>47</sup> should be seen not only through an economics lens, but also as an

FIGURE 4.1 Structural and rural transformation: the interplay between drivers and outcomes



urgent matter of social equity and socio-political stability.

### Natural resource endowments

Factor endowments, particularly natural resource endowments such as water, farmland and minerals, are important drivers of structural and rural transformations. Water availability can spur agricultural productivity gains and contribute to the uptake of an inclusive and sustainable rural transformation. Conversely, over-reliance on extractive industries can, if misused, pervert incentives for broad-based economic growth and stunt the agricultural sector.

In most countries in the NEN region, dependence on oil revenue and its cyclical commodity effects translate into pronounced volatility in economic growth, which is particularly detrimental because stable growth is better than volatile growth at tackling poverty.<sup>48</sup>

Likewise, constraints on water availability translate into excessive agricultural-output volatility and hamper rural transformation. Such

output volatility is the hallmark of the dominant dryland agricultural systems in the region. Pastoral and agro-pastoral, rainfed and irrigated farming are the three main dryland agricultural livelihood options, and they often coexist. These options heavily influence the mix of policy and investment interventions aimed at fostering inclusive rural transformation.

Although rainfed agriculture, accounting for nearly 70 per cent of the cultivated area, is dominant in both NEN subregions, the expansion of irrigated farmland is driving most productivity gains. More than 13 million hectares in the CIS countries of Central Asia are equipped for irrigation, nearly three quarters of the irrigation potential in the CIS subregion. Further, countries in this subregion – such as Uzbekistan with 90 per cent of its cultivated area under irrigation and Tajikistan with 85 per cent – have the potential to markedly increase their agricultural productivity with the right mix of interventions.

NENA countries have the lowest share of freshwater availability in the world, and most of their freshwater resources are trans-boundary. The average annual renewable water share per capita in the subregion is 430 cubic metres, well below the water poverty line of 1 000 cubic metres and indicating an absolute scarcity stage.<sup>49</sup> The equivalent figure in the CIS subregion is 3 800 cubic metres, suggesting ample room for sustained agricultural intensification.

Climate change-induced disruptions to the water cycle are expected to exacerbate an already critical situation. The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC 2014) predicts that climate change effects in the NENA subregion will include lower precipitation and impair per capita water availability by 30-70 per cent by 2025. The knock-on effects of reductions in both surface water runoff and groundwater recharge will heavily affect agricultural productivity growth. Such climate-related disruptions will constitute an additional burden to rural economies, acting as a threat multiplier. Climate-induced disruptions in the water cycle are additional stressors that interact with non-climatic stressors and entrenched structural inequalities to shape vulnerabilities and yield differential rural livelihood trajectories (IPCC 2014).<sup>50</sup>

Those alarming prospects call into question the current allocation of up to 70-90 per cent of scarce water resources to a largely water-inefficient agricultural sector, which until now has been unable to drive more inclusive rural transformation. Enhancing water productivity is becoming a critical issue to factor in alongside the labour productivity analysis commonly undertaken when analysing structural transformation patterns.

#### **Fragility attributes, including conflicts**

The structural transformation outcomes of several countries in the NENA subregion cannot be understood unless one considers fragility. This aspect has recently gained prominence as political transitions unleashed unrest, ranging from low-intensity yet protracted social protests to civil war in Iraq, Libya, Syria and Yemen.

State fragility and, particularly, armed conflicts, such as those seen in Sudan and Yemen over the past three decades, typically displace many people, muting the effects of labour movement across sectors and between urban and rural space traditionally associated with structural transformation.

Countries with chronic fragility may prematurely urbanize without any significant underlying structural transformation. Further, a deficit in the state's authority and in its capacity to deliver core developmental functions is usually more pronounced in peripheral rural areas than in large agglomerations, leading to increased pauperization of rural inhabitants. These people see their livelihoods disrupted during conflicts and tend to seek both security and jobs in urban areas, where the state is still, to some degree, functional.

Fragility is largely absent in the CIS subregion. With the exception of Tajikistan, none of these CIS countries has ever been described as fragile. Tajikistan, which went through a highly disruptive civil war between 1992 and 1997, slowly recovered and has been only recently taken out of the World Bank's harmonized list of fragile situations.

#### **Previous development policy choices and the attendant path dependency**

Structural and rural transformation pathways are influenced by initial conditions, institutional factors, policy regimes and investment choices. The tendency to neglect investments in agriculture during the oil boom years in oil-rich NENA countries and the associated over-reliance on imported food commodities to meet domestic needs are important drivers of rural transformation.

Likewise, ill-designed subsidies have had little effect on increasing agricultural productivity and profitability. Most governments in the region provide support through agricultural credit schemes. However, with under-involvement of private financial institutions, these schemes have largely failed to expand or deepen financial services in rural areas.

In the CIS subregion, agriculture experienced a difficult transition, with steep deterioration in the terms of trade and a collapse of the Soviet-era agricultural support system. The post-Soviet land reforms transformed the farming structure, as small farmers emerged as dominant contributors to overall agricultural output. However, some CIS policymakers still favour consolidating farms and see the future of agribusiness in corporate farming. For instance, policy documents and support instruments in most CIS countries do not delimit enough the small-scale segment and, therefore, tend to overlook its critical role in ensuring food and nutrition security.

Another major impediment to agricultural development, especially to the relative failure of some countries to climb the value-added ladder, is the suboptimal supply of extension and advisory services. This shortcoming is particularly acute in the CIS countries, where post-Soviet land reforms entailed distributing state-owned farmland to rural inhabitants formerly on the payroll of *kolkhozes* and *sovkhoses*<sup>51</sup> and who had no real experience in actually running a farm.

### **The region's growth-employment nexus: the structural deficit**

Few empirical studies have been done on structural transformation in the NENA subregion relative to Asia, Latin America and sub-Saharan Africa, particularly studies that attempt to break out labour productivity into "within-sector" and "across-sector" components – the McMillan and Rodrik (2011) labour-productivity decomposition methodology. Interest in probing the region's structural transformation started in earnest after the popular uprisings (known as the Arab Awakening) that erupted in early 2011, and that were mainly ascribed to acute shortages of economic opportunities for a steadily growing labour force.

The uprisings laid bare a major paradox in the region. Employment intensity (or elasticity of growth) shows no significant difference from that in other developing regions, yet the NENA subregion has some of the world's highest unemployment rates. Some empirical studies

looking at the transmission channels between these two macroeconomic variables (growth of economic output and rate of job creation) conclude that the region is suffering from a "structural deficit" (Arnim et al. 2011; Kucera and Roncolato 2012; Madariaga 2014).

The well-known economic development paradigm experienced by emerging Asia – which was grounded in rapid agricultural productivity growth and a dynamic manufacturing sector fuelling rural-urban migration and economy-wide productivity growth – has hardly played out in the NENA region because of the absence of a broad and competitive manufacturing base. Most early attempts at import substitution industrialization were unsuccessful (Lin 2012). They were pursued without long-term vision, were thwarted by inadequate infrastructure and failed to upgrade when exposed to foreign competition, as protection and subsidies were removed during the trade liberalization that started in the mid-1980s.

An export-led structural transformation relying on manufacturing as an engine of growth – absent in most NENA countries – is the main explanatory factor for the ability of many Asian nations to embark on a faster structural transformation than predicted by differential sectoral income elasticities alone (Lin 2012).

Export sophistication often serves as a proxy for structural transformation in an economy (table 4.1).<sup>52</sup>

Although Asian countries have upgraded and shifted a sizeable part of their exports towards high and medium-high technologies, most NENA countries stay trapped at the medium-low level. That said, averages shown in table 1 conceal some successes in the region as Tunisia fared relatively well on export sophistication. Using the methodology developed by Hausmann et al. (2007), Hausmann and Bustos (2012) found Tunisia to be on the regression line when they plotted export basket sophistication against income per capita.

A later demographic transition than in Asia or Latin America added to the region's inability to embark on classic structural transformation. Thus, all the factors just described suggest

that any industrial catch up in the mould of emerging Asia is largely off limits. Instead, economies in the region are experiencing a “premature tertiarization” (UNCTAD 2003), with labour moving slowly from agriculture to the informal (not formal) sector, as both sectors have low labour productivity.

Madariaga (2014) measured the structural deficit described in a study covering Egypt, Morocco, Syria, Tunisia and Turkey using McMillan and Rodrik’s (2011) methodology. The study concluded that employment elasticity of growth was around 0.6, with virtually no difference among the five countries. What really made the difference for poverty reduction and overall welfare improvement was the size of the across-sector labour-productivity gains (as labour moved from lower- to higher-productivity sectors). But in most of the countries (except Turkey), labour productivity grew largely from within-sector gains (table 4.2).

Most countries follow a classic “Lewis path,” with steadily declining agricultural shares in overall economic output and employment, the latter share declining at a slower pace. Figure C

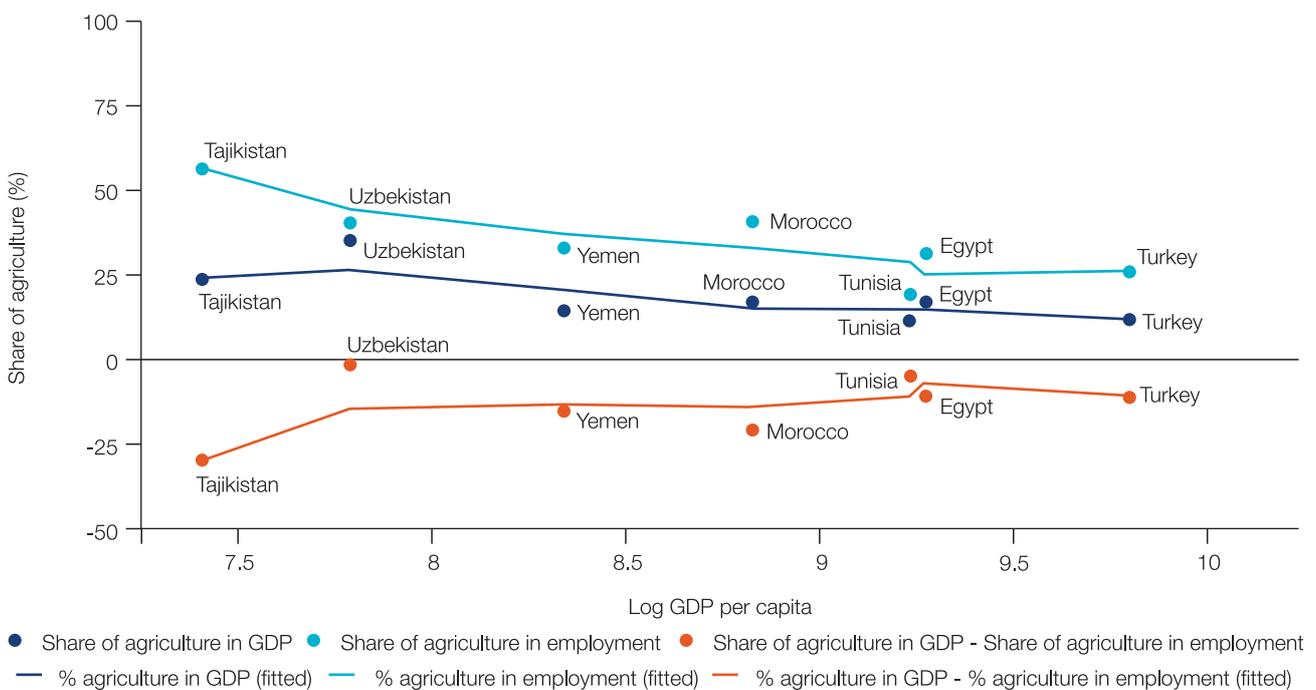
in the Overview and synthesis shows that all countries in this report’s database tended to follow these trends. A turning point occurs when agriculture’s share in employment starts declining faster than the sector’s share in output, and the gap begins to close (Timmer 2009).

These stylized facts about convergence are apparent in the two subregions (CIS and NENA), where countries are at different points along the structural transformation path (figure 4.2).

The two CIS countries of Tajikistan and Uzbekistan seem to have embarked on structural transformation later than Egypt, Morocco, Tunisia and Turkey. Some “oddities”, such as the wide gap between the shares of agriculture in gross domestic product (GDP) and overall employment in Tajikistan, are intriguing (and will be investigated within the broader context of structural transformation in the CIS subregion).

Similar to the NENA subregion, the CIS subregion has been the subject of little empirical research on structural transformation. Akramov et al. (2014) clustered four Central Asian countries using a typology developed by Dorin et al. (2013), which plots trends in

FIGURE 4.2 Selected NEN countries on the path to structural transformation



Source: World Bank 2015.

TABLE 4.1 **Export technology content of emerging Asian and NENA countries**  
(proportion of total export value, %)

Technology level	1990-1999	2000-2010
<b>Emerging Asia</b>		
High	22.5	32.9
Medium-high	11.4	17.7
Medium-low	17.4	19.4
Low	33.7	22.1
Zero	14.8	7.7
<b>NENA</b>		
High	3.5	4.6
Medium-high	12.7	22.5
Medium-low	16.6	25.1
Low	46.7	34.4
Zero	19.9	13.0

Source: Based on Madariaga 2014, using the CHELEM international trade database.

TABLE 4.2 **Labour productivity growth decomposition, 2000-2010 (%)**

	Total gains	Within-sector gains	Across-sector gains
Egypt	1.5	1.5	0.1
Morocco	3.8	3.1	0.7
Syria	4.3	4.3	-0.1
Tunisia	2.3	2.1	0.2
Turkey	3.7	2.5	1.2

Notes: Productivity values are calculated by taking the average per year for each country. Labour-productivity decomposition is based on a sectoral breakdown into three major economic sectors. The agricultural sector comprises the agricultural, hunting, forestry and fishing sub-sectors (International Standard Industrial Classification [ISIC] code Rev. 3, A-B). The industrial sector comprises the mining, manufacturing, utilities, and construction subsectors (ISIC Rev. 3, C-F). The services sector combines the wholesale, retail, hotel, and restaurant subsectors (ISIC Rev. 3, G-H), the transport, storage, and communications subsectors (ISIC Rev. 3, I), the financial and business activity subsectors (ISIC Rev. 3, J-K), the public service subsector (ISIC Rev.3, L-O) and other service subsectors (ISIC Rev. 3, P-Q).

Source: Madariaga 2014; UNSTAT, ILO, World Bank 2015.

the active agricultural population (increasing or decreasing) against trends in income differentials between agricultural and non-agricultural workers. Their findings suggest that only Kyrgyzstan and Uzbekistan are following the classic Lewis path. Tajikistan is falling into the “Lewis trap,” whereby income differentials widen and the agricultural workforce keeps increasing, bucking the trend typically observed in structural transformation (table 4.3).

A review of empirical studies analysing structural transformation in the region, points to the following characteristics:

- Narrow economic diversification and over-reliance on low-technology content in exports. These have trammelled structural transformation, leaving the informal sector to feed on the steady erosion of increasingly uncompetitive manufacturing and a bloated public sector.
- The absence of a productivity-enhancing sector (such as manufacturing) because of the productivity differentials between sectors being too low to trigger rapid structural transformation.
- Labour-productivity gains that were confined to the sector. Among the five countries studied, most labour-productivity gains came from within-sector, not across-sector, gains.

Those regional findings are largely corroborated by country studies for Tunisia (Marouani and Mouelhi 2015) and Egypt (Morsy et al. 2014). In Tunisia, across-sector labour-productivity gains were very low before 1995, the year marking the start of the industrial modernization programme prompted by the country’s accession to the World Trade Organization and the signing

of a free trade agreement with the European Union. These productivity gains vanished subsequently, despite trade liberalization. In Egypt, the sectoral distribution of GDP remained broadly unchanged during 2000-2010. The study’s labour-productivity decomposition saw an overall negative impact from across-sector effects. In short, structural transformation in Tunisia was, at best, productivity neutral and in Egypt, it was productivity reducing.

Although most of the countries in the region saw their agricultural shares in labour and output decline as per capita income rose, without rapid growth in manufacturing, productivity growth was driven by within-sector productivity growth rather than by labour movement from less-productive to more-productive sectors, underwriting the structural deficit.

## Rural transformation outcomes

### The rural-urban nexus

A central theme of this report is that structural and rural transformations, when playing out in harmony and moving in lockstep, tend to bridge rural-urban human development gaps and enhance the inclusiveness of economic growth.

One way to illustrate that theme is to plot a proven proxy indicator for the extent of structural transformation against an appropriate inclusiveness indicator. In the classic dual-economy model, interspatial interactions (in addition to labour movement across sectors) often result in rural-urban population movement. The latter process can be proxied by the growth in urban population over a period long enough to reflect underlying trends. The synergistic effect on inclusiveness – or lack

TABLE 4.3 Structural transformation paths in the CIS countries of Central Asia

Income differential	Employment in agriculture	
	Increasing	Decreasing
Narrowing	Farmer developing: none	Lewis path: Kyrgyzstan and Uzbekistan
Growing	Lewis trap: Tajikistan	Farmer excluding: Kazakhstan

Source: Akramov et al. 2014.

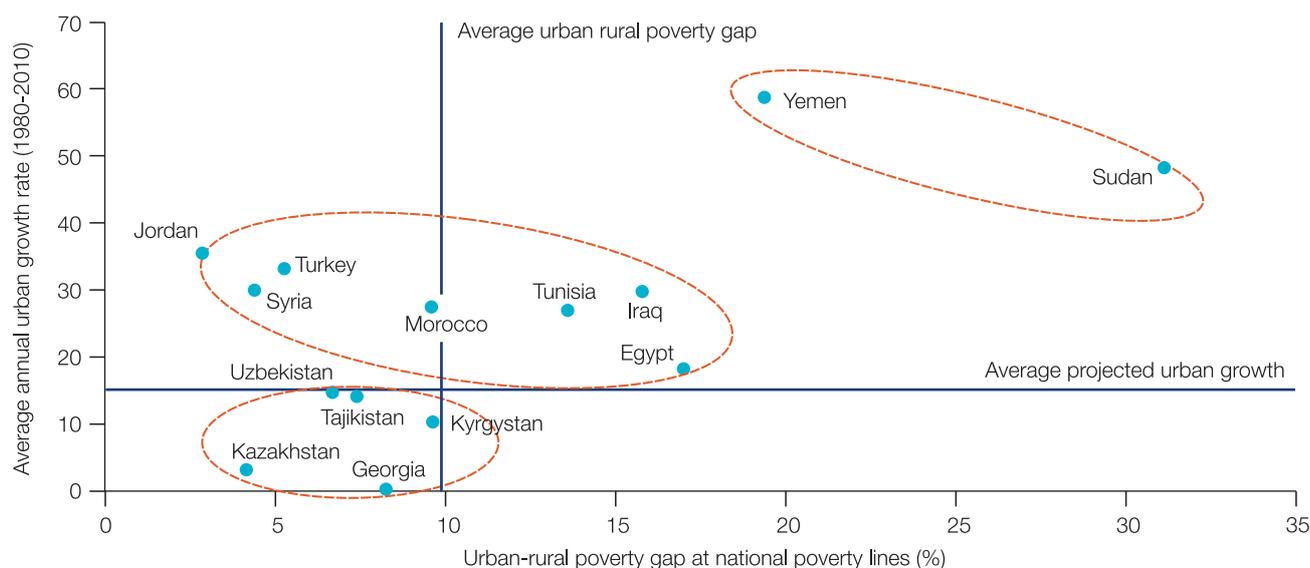
thereof – derived from the interactions between the structural and rural transformations can be captured by the difference in poverty rates between rural and urban spaces. Urbanization closely and positively correlates with the pace of structural transformation, and the poverty gap can be taken as a reliable proxy for the degree of successful rural transformation and reduction of associated poverty and inequality.

When urban population growth during 1980-2010 is graphed against the difference in urban and rural poverty rates (measured at national poverty lines), discrete patterns emerge, allowing regional countries to be clustered by inclusiveness of their rural transformation (figure 4.3).

The three NEN clusters depicted in figure 4.3 correspond to three distinct urbanization patterns, each characterized by a particular pace of rural-to-urban population movements. Therefore, the rural space has been reshaped while experiencing differentiated rural transformation outcomes, leading to the poverty gap widening or narrowing. The different scenarios correspond to these situations:

- *Prematurely urbanized countries.* Examples are Yemen and Sudan, which saw urban population growth far in excess of overall population growth during 1980-2010, and their rural-urban poverty gaps worsen sharply. Their rapid urbanization was largely induced by push factors stemming from natural disasters and armed conflicts (not by pull factors in urban areas). This group illustrates what happens with massive<sup>53</sup> rural-urban population movements without any significant structural transformation.
- *The second group is featuring All Other NENA countries not experiencing major disruptive events in 1980-2010.* These countries could embark on normal rural transformation (in the style of Lewis), albeit at different speeds. They cover a wide spectrum, as measured by the rural-urban poverty gap. (Countries that were relatively stable up to 2010 and have since become fragile, such as Iraq and Syria, are likely to have become prematurely urbanized.)
- *The third group includes exclusively CIS countries.* They all feature relatively low

FIGURE 4.3 Three NEN ruralities



Notes: Urban population growth for 1980-2010 and for 2010-2025 is based on *UN World Urbanization Prospects, 2014 revision* (<http://esa.un.org/unpd/wup/CD-ROM/>). The rural-urban poverty gap is a percentage derived by subtracting the urban poverty rate from the rural poverty rate at national poverty lines using WDI, except for Kyrgyzstan. The gap is measured using the latest available year for each country. Source: Author's compilation, based on UN demographic data, WDI dataset, and National Statistical Committee of the Kyrgyz Republic.

urbanization rates and low urban-rural poverty differences. The reason for the low urban growth is that this subregion is made up of newly independent states, which largely formed a rural hinterland that had been subordinated to the Soviet economy. That position was reflected in the emergence of a few so-called “mono-cities” based on extractive industries or the cultivation of agricultural raw materials, such as cotton, to be processed elsewhere in the industrialized part of Soviet Union (UN ESCAP and UNDP 2013). Once the countries separated, they inherited extremely unbalanced economies and had to go through traumatizing transitions before launching the urbanization process within their new borders. This group seems to show a time lag with the second group, and is expected to catch up with it in a decade or so.

To complement the analysis, value added per worker in agriculture (constant 2005 United States dollars) is used as a proxy indicator of the extent of rural transformation in selected NEN countries. Figure 4.4 corroborates our previous finding. A combination of above-average structural transformation (captured by the urban growth proxy indicator) with above-average rural

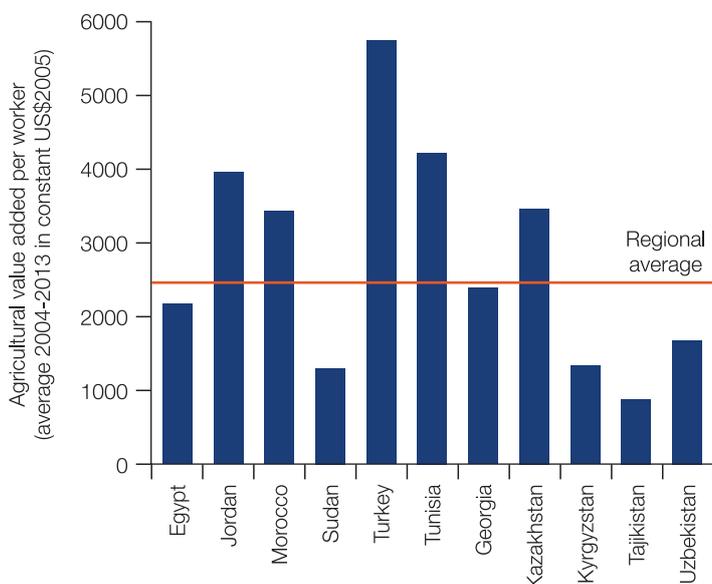
transformation (captured by the agricultural value added per worker proxy indicator) results in relatively fast rural poverty reduction and a narrower urban-rural poverty gap (Jordan, Morocco, Tunisia and Turkey).

Conversely, countries featuring a combination of below-average structural and rural transformations achieve slow rural poverty reduction and see a wider urban-rural poverty gap (fragile countries such as Yemen and Sudan and non-fragile economies such as Egypt, Georgia and Tajikistan).

Thus, no country seems to have achieved an inclusive development pattern characterized by fast overall poverty reduction and a concomitant narrowing of the urban-rural poverty gap without paying careful attention to the way rural transformation interacts with the wider structural transformation.

These findings confirm the key hypothesis upon which the analytical framework is built. When structural and rural transformations evolve together, the urban-rural poverty gap narrows and rural development is put solidly on an inclusive and sustainable track. Conversely, when structural and rural transformations diverge, the gap widens and, as a consequence, swaths of rural inhabitants are excluded from reaping the benefits of economic growth.

FIGURE 4.4 Agricultural labour productivity, selected NEN countries, 2004-2013



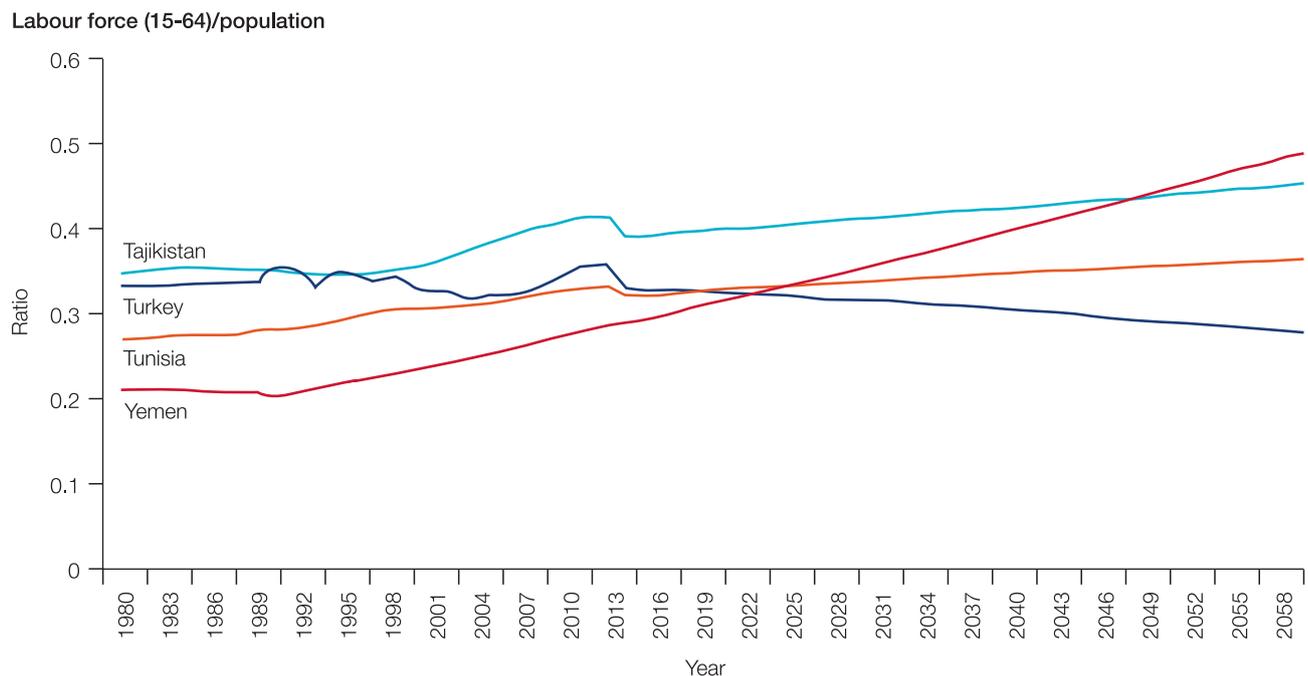
Source: IFAD, based on World Bank (2015)

#### Four case studies illustrating rural inclusive transformation pathways

This subsection provides more detailed reviews<sup>54</sup> of four NEN countries to illustrate the typology related to the three NEN ruralities. The wide geographical coverage of the sample and the range of income status (low, lower-middle, and upper-middle income) were also considered, as were fragility and conflict. On that basis, Yemen was selected to illustrate a rural transformation during fragility, Turkey and Tunisia are relatively diversified economies (with the former arguably more successful than the latter in bridging the rural-urban poverty gap); and Tajikistan is a slow transformer in the post-Soviet economic transition.

Securing rapid and inclusive structural and rural transformations is becoming increasingly

FIGURE 4.5 Ratio of labour force (15-64 years old) to total population, 1980-2060



Source: World Bank (2015) and UNDESA (2013)

critical, as demographic pressures on labour markets continue to build, as shown by the growing ratio of the labour force to population, except for Turkey, which has just reached a turning point (figure 4.5).

The four countries are at different points on the path to rural transformation (see figure 4.2), with Turkey the most advanced, followed by Tunisia, Yemen and Tajikistan. A comparison between the rate of reduction of each country's agricultural share in output allows one to place them relative to the Lewis turning point, when agriculture's share in employment (AgEmp) starts to decline faster than agriculture's share in GDP (AgGDP) (table 4.4).

The exercise was constrained by data availability because the change in AgGDP and AgEmp had to be computed using different time series. However, the overall picture is consistent with the positioning of countries along the Lewis pathway, as discussed. Tunisia and Turkey seem to be past the Lewis turning point, whereas Yemen has yet to reach it. Tajikistan is experiencing a very rare situation, in which the agricultural share in employment is still growing – a clear indication that the country

has yet to launch its own structural transformation to accompany the likely acceleration of urban growth. These positions are corroborated by the agricultural value added per worker in figure 4.6, which shows Turkey and Tunisia above the trend line, but most CIS countries at the tail of the curve.

#### *Tajikistan: A late and slow transformer*

Tajikistan is a landlocked, low-income country in Central Asia. With a gross national income (GNI) per capita of US\$990 in 2013, it is the poorest former Soviet Union country. It has the highest population growth in Central Asia and, unlike the first group of rapid urbanizers, has experienced "ruralization" as urban population growth has been outpaced by total population growth during 1980-2010 (1.4 per cent versus 2.2 per cent).

The structural and rural transformations have been hampered by a five-year civil war that ended in 1997 and a devastating transition from a command to a market-based economy. The economy is undiversified, with cotton (providing a livelihood to nearly 1 million rural inhabitants) and hydroelectricity the

TABLE 4.4 Lewis turning point for four countries

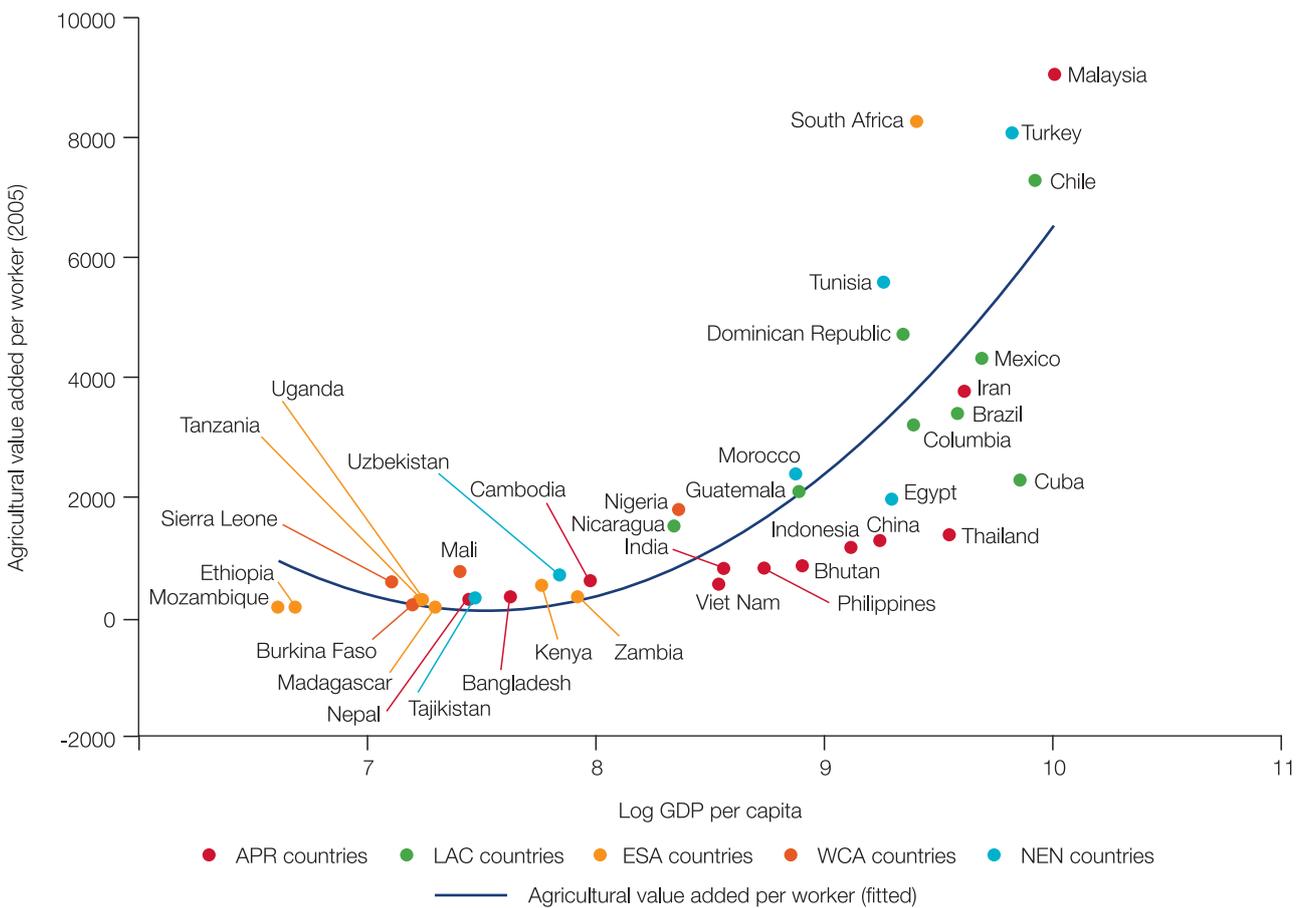
	Period	Share of agriculture in GDP (start; end)	Annual reduction (%) <sup>a</sup>	Share of agriculture in employment (start; end)	Annual reduction (%) <sup>b</sup>
Tajikistan	1995-2008	36.7; 19.9	3.99	59.1; 66.7	3.99
Tunisia	1980-2011	16.3; 8.9	1.87	33.4; 16.2	1.87
Turkey	1985-2012	20.7; 9.0	2.86	45; 23.6	2.86
Yemen	1991-2004	23.1; 11.7	4.74	52.6; 31.0	4.74

<sup>a</sup> Average percentage points.

<sup>b</sup> A positive value denotes a reduction.

Source: authors' calculations, based on WDI and State Statistical Committee for Tajikistan.

FIGURE 4.6 Agricultural value added per worker, by GDP per capita



Source: IFAD, based on World Bank (2015)

major export items. Unsurprisingly, agriculture still dominates the economy, accounting for about 20 per cent of output and keeping up to two thirds of the labour force mired in low-productivity, poorly remunerated jobs. Tajikistan has, however, the highest per capita availability of renewal water in Central Asia, at more than 9,000 cubic metres per inhabitant (FAO Aquastat 2011), suggesting ample room for intensifying agricultural-output sustainably.

Agricultural labour productivity is the lowest among the CIS countries and is dwarfed by labour-productivity levels in relatively transformed countries such as Turkey and Tunisia (see figure 4.4). Crop yields have yet to reach pre-independence levels, when the country had the highest cotton yield in Central Asia, at 3 tons per hectare compared with 1.6 tons per hectare now. Similarly, fruit and vegetables have not yet reached pre-transition yields.

Reasons for such disappointing agricultural productivity (figure 4.7) are manifold. Tajikistan initiated land reforms in 1991-1992 shortly after gaining independence. The civil war and a hesitant reform agenda led to slow restructuring and emergence of individual farms (such farms have led the agricultural recovery in Central

Asia). In Tajikistan, the corporate agricultural sector continued its general decline.<sup>55</sup>

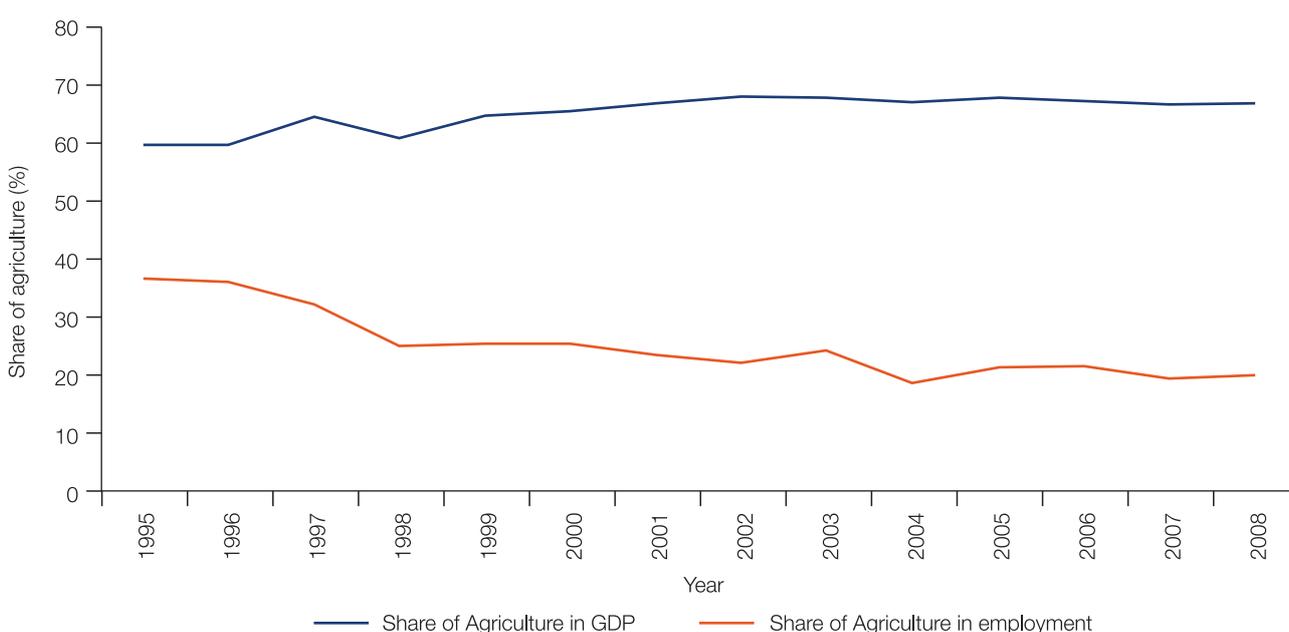
Productivity gains, although modest, were achieved mainly by individual farms.

The structural transformation in Tajikistan is atypical among the four case studies because of the continuing growth of the share of labour employed in agriculture. Tajikistan is the only country experiencing the Lewis trap.

Low agricultural productivity translates into wages lower than in other sectors; they average less than one third of the national average and about one tenth of wages in construction. This huge discrepancy has widened the poverty gap between rural and urban areas (table 4.5).

Extreme poverty and hunger are also common. Tajikistan is the only Central Asian country still facing acute food insecurity, according to *The State of Food Insecurity in the World* (FAO et al. 2015). Although the prevalence of undernourishment in Central Asia fell steadily, from 9.6 per cent in 1990-1992 to 5.8 per cent in 2014-2016, Tajikistan saw its proportion of undernourished in the total population rise from 28.1 per cent to 33.2 per cent over the period. The absolute number of undernourished nearly doubled, from 1.6 million to 2.9 million. Similar

FIGURE 4.7 Diverging shares of agriculture in employment and in GDP, Tajikistan



Source: State Statistical Committee, Tajikistan

TABLE 4.5 The widening rural-urban poverty gap, Tajikistan (poverty rates, %)

	2003	2007	2009
National	72.4	53.5	46.7
Extreme	41.5	17.1	13.8
Urban	68.8	49.4	36.7
Urban extreme	39.4	18.9	9.5
Rural	73.8	55.0	50.8
Rural extreme	42.3	16.4	15.6

Sources: WDI (World Bank 2015) and State Statistical Committee, Tajikistan.

alarming figures are reported for underweight children younger than 5-years-old, which in recent years was kept under 5 per cent in most CIS countries except Tajikistan, where it remains over 15 per cent. On labour-market outcomes, official government figures indicate low unemployment of about 2 per cent, but this rate does not account for pervasive agricultural underemployment or for huge labour movements across borders to find jobs, primarily in Russia. The average monthly wage of migrant workers in Russia was estimated at about US\$150 a decade or so ago (World Bank 2005), more than 10 times that in agriculture, as reported by the Tajikistan Statistical Committee in 2005. The huge labour-productivity difference, which would typically have set off a structural transformation and labour movement within the country's borders (if the economy had diversified), led instead to massive labour exports. In one sense, structural transformation in Central Asia needs to be cast beyond the borders of the newly independent states to be fully understood.

Statistics on the number of migrants are sparse and unreliable. Remittances, though, can be used as a proxy for massive labour movements. According to the World Bank, Tajikistan is the most remittance-dependent country in the world, with migrants sending back the equivalent of 52 per cent of GDP, amounting to US\$4 billion in 2013.

Such predominance is common in commodity-poor Central Asian countries.

Kyrgyzstan, for instance, is the second most remittance-dependent country, with a remittance-to-GDP ratio of nearly 30 per cent. Although migrants' financial transfers provide a lifeline for millions of households, they tend to be a major source of macroeconomic instability (because of their vulnerability to political and economic crises in remitting countries) and to impede structural transformation.

#### *Tunisia: a story of an excessive rural-urban polarization*

Tunisia is an upper-middle-income country, with a GNI per capita of US\$4,200 in 2013. Its development pattern, relying on early investment in human capital, has often been cited as a model in the Middle East. The country is a pioneer in the Arab world of universal education, free health services and women's emancipation. It has fairly strong macroeconomic fundamentals – robust economic growth, openness to foreign investment and trade, and an economy fairly diversified compared to other economies in the region. Despite the economy's dual structure of an offshore, urban-based export sector with virtually no backward and forward linkages to the local (and inland), primarily agricultural economy, Tunisia has reduced its national poverty incidence, narrowing the gap with more advanced countries, although the coastal-inland split remains very wide.

However, Tunisia's development model has run out of steam, as early gains from labour-

intensive export-oriented industries, such as textile manufacturing and tourism, failed to take it up the value-added ladder. The structural deficit described earlier is impeding the economy's ability to generate enough jobs for a growing and increasingly educated workforce. Because unemployment and poverty are closely related – unemployment translates into exclusion from social protection, as the country's safety net relies heavily on employment-based insurance – a long spell of unemployment heightens the risk of falling into poverty (OECD 2015).

The 2011 uprising, which triggered the turmoil in the Middle East, was not so much the consequence of abject poverty, but of ill-advised territorial development in which rural-urban

poverty and employment gaps were not tackled. This failure worsened the polarization between predominantly rural inland areas and the coastal zones (table 4.6), which received most public investments in infrastructure and private productive investments.

Unlike Turkey, the economic boom in Tunisia over the decade did not see rural areas catch up, and rural poverty remained about twice that in urban areas. A more granular review of interregional disparities between the predominantly rural mid-west<sup>56</sup> and the mainly urban coastal areas in the north-east reveals more pronounced polarization, with the poverty rate in the former more than three times that in the latter. Extreme poverty disparities are even wider (table 4.7).

TABLE 4.6 Poverty by location and year, Tunisia (%)

	Poverty			Extreme poverty		
	2000	2005	2010	2000	2005	2010
Tunisia	32.4	23.3	15.5	12.0	7.6	4.6
Large cities	21.5	15.4	9.0	4.3	2.2	1.3
Small cities	32.5	22.1	14.0	10.5	6.5	2.9
Rural	40.4	31.5	22.6	19.1	13.4	9.2

Source: Institut national de la statistique, Tunisie, last three household budget surveys.

TABLE 4.7 Poverty by region and year, Tunisia (%)

	Poverty			Extreme poverty		
	2000	2005	2010	2000	2005	2010
Grand Tunis	21.0	14.6	9.1	4.3	2.3	1.1
North-east	32.1	21.6	10.3	10.5	5.4	1.8
North-west	35.3	26.9	25.7	12.1	8.9	8.8
Mid-east	21.4	12.6	8.0	6.4	2.6	1.6
Mid-west	49.3	46.5	32.3	25.5	23.2	14.3
South-east	44.3	29.0	17.9	17.5	9.6	4.9
South-west	47.8	33.2	21.5	21.7	12.1	6.4

Source: Institut national de la statistique, Tunisie.

Rural-urban gaps in labour-market outcomes also provide a compelling case for the need for more inclusive territorial development. The structural deficit just analysed led to depressed labour demand, concomitant with an oversupply of young and skilled labour resulting from a lagged demographic effect and previous education policies. This structural deficit, alongside the labour skills mismatch, was mostly felt in rural areas, providing for an explosive mix. Predominantly rural areas of the northwest and southwest have the highest unemployment, particularly among the highly educated (table 4.8).

The poverty and unemployment rural-urban disparities stem largely from sectoral differences in labour productivity, which themselves are manifestations of the extent of the structural and rural transformations.

According to the labour and microenterprise surveys of 2012 – which in Tunisia capture the bulk of the informal economy – the average annual value added per agricultural employee was TND 11,505, whereas the equivalent amount in the informal economy was TND 11,081. By way of comparison, economy-wide labour productivity stood at TND 21,767 whereas labour productivity in manufacturing reached TND 18,923.

The classical structural transformation scenario whereby labour would flow from low-productive agriculture to a manufacturing sector along a positive productivity gradient (in this case a TND 7,418 differential) did not play out and instead labour flew to an informal economy with virtually zero productivity differential. The absence of productivity differential captured by informal labour surveys in Tunisia is consistent with the studies of labour-productivity decomposition. The structural deficit means that, without jobs in highly productive industries and services, new entrants to the labour market, as well as labour shed from low-productive agriculture, have been absorbed by the informal sector, the fastest growing in Tunisia. Job creation in that sector grew at 5.6 per cent a year during 2007-2012, much faster than the economy-wide rate (a mere 0.94 per cent) and the manufacturing employment growth rate (0.7 per cent).

*Turkey: a fairly inclusive transformer*

Turkey, an upper-middle-income country with a GNI per capita of US\$10,970 and GDP of US\$822 billion in 2013, is the 18th-largest economy in the world. It is a member of the OECD and G20, and a European Union accession candidate. The country's rapid growth

TABLE 4.8 Unemployment rate by region and education level, Tunisia, 2010 (%)

Region	Total	Higher education	Secondary	Primary	None
Grand Tunis	13.2	14.4	14.5	11.1	4.0
North-east	11.0	21.9	11.7	8.3	4.4
North-west	14.4	31.6	17.9	10.6	6.1
Mid-east	9.3	19.4	8.1	6.5	4.7
Mid-west	16.8	35.4	16.7	8.8	5.0
South-east	16.8	35.4	16.7	8.8	5.0
South-west	23.4	41.7	24.0	14.1	8.4
Total Tunisia	13.0	22.9	13.7	9.2	5.7

Source: Institut national de la statistique, Tunisie.

during the past decade has tripled its GDP and helped earn it “high human development” status in the *Human Development Report 2014* (UNDP 2014).

This record is underpinned by arguably successful structural and rural transformations. The shift to high-value agriculture fuelled a vibrant rural export-led<sup>57</sup> economy and yielded gains in reducing poverty and inequality and in raising employment. This shift was seen in a series of policy reforms initiated in the mid-1980s to foster market orientation and the use of a “basin-based” agricultural support system, factoring in regional disparities in natural resources.

The country built on its resources (mainly water and fertile land) and on its strategic geographical location (at the crossroads of three continents) to establish itself as an agribusiness regional hub serving Europe, the Middle East and Central Asia. Turkey is an outlier in the Middle East on successful industrial upgrading, as proxied in table 4.9 (compare table 4.1).

Although the country experienced urban growth at nearly twice the rate of total population growth during 1980-2010 (3.3 per cent versus 1.7 per cent), it steadily narrowed the rural-urban poverty gap, which shrank at 15 per cent a year on average over 2004-2013 (table 4.10).

The 2013 income and living conditions survey showed a relatively balanced income distribution, with the ratio of the share of the highest-income group (fifth quintile) of total income to the share of the lowest (first quintile) estimated at 7.2 for urban settlements and 6.5 for rural areas. The Gini coefficient showed

TABLE 4.9 Moving up the export value chain, Turkey (% of total export value)

Technology level	1990-1999	2000-2010
High	3.0	4.8
Medium-high	12.2	25.2
Medium-low	20.7	28.5
Low	49.3	33.7
Zero	13.7	7.2

Source: Madariaga 2014, using the CHELEM international trade database.

slightly higher inequality in urban (0.392) than rural (0.365) areas. The vulnerability of households to falling back into poverty, as measured by the at-risk poverty rate, showed much-reduced polarization between rural and urban areas (14.3 per cent rural versus 13.6 per cent urban).

Rural areas are faring better than urban areas on labour force participation, employment and unemployment, including that among youth (table 4.11).

#### *Yemen: rural transformation in the context of fragility*

Yemen, formerly known as Arabia Felix (Happy Arabia), was historically the most prosperous part of the Arabian Peninsula before ultimately becoming the poorest Arab country, with a GNI per capita of US\$1,330 in 2013. Yemen came into being with its current boundaries in 1990, after the reunification of the Yemen Arab Republic and the People’s Democratic

TABLE 4.10 Bridging the rural-urban poverty gap, Turkey (poverty rate at the national poverty line, %)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
National	20.89	16.36	13.33	8.41	6.83	4.35	3.66	2.79	2.27	2.06
Urban	13.51	10.05	6.13	4.40	3.07	0.96	0.97	0.94	0.60	0.64
Rural	32.62	26.59	25.35	17.59	15.33	11.92	9.61	6.83	5.88	5.13

Source: Turkish Statistical Institute, annual income and living condition surveys.

TABLE 4.11 Main labour-market indicators, Turkey

	National		Urban		Rural	
	2012	2013	2012	2013	2012	2013
Labour force (000)	27 339	28 271	18 186	18 907	9 153	9 364
Labour force participation (%)	50.0	50.8	48.3	49.6	53.6	53.6
Employment (%)	45.4	45.9	42.9	43.9	50.7	50.3
Unemployment (%)	9.2	9.7	11.1	11.5	5.5	6.1
Youth unemployment (15-24 years of age)	17.5	18.7	20.3	21.2	11.9	13.7

Source: Turkish Statistical Institute.

Republic of Yemen. Yet the country continued to grapple with cleavages along tribal, religious and regional lines and suffered a civil war in 1994. Government authority has been challenged by Houthi rebels in the northwest and a secessionist movement in the south during most of the past two decades. Yemen achieved only limited state building, and government reach into rural areas is still quite limited (Schultze-Kraft et al. 2014).

The economy relies heavily on oil revenue, which peaked at 41.3 per cent of GDP in 2005 before declining to about 11 per cent in 2013. The oil sector accounts for up to 90 per cent of exports and an estimated 70 per cent of government revenue. However, the oil rent, now largely over, led to a narrow tax base, which is generally associated with little accountability. Oil-driven economic growth mainly benefited the urban areas – the result of a pronounced urban bias.<sup>58</sup>

More critically, Yemen is running out of water. Current per capita availability of renewable water is 140 cubic metres, the lowest level in an already water-strained Middle East.<sup>59</sup> Hill (2010) predicted that the capital, Sana'a, could run dry in a decade unless immediate mitigation measures were taken. Despite this alarming prospect, the country squanders up to 90 per cent of its water resources in either low-value agriculture or high-value cultivation of the qat leaf, a mild stimulant commonly chewed in Yemen. This crop accounts for nearly 30 per cent of agricultural GDP and consumes up to 40 per cent of total water resources.

Although the qat value chain employs an estimated 500,000 and provides a steady revenue stream to producers, the net effect is negative when one factors in lost water and depressed labour productivity. In addition, consumption of this mild stimulant results in health problems and reduces intake of nutritious food, as households tend to curtail their food expenditures in exchange for qat.<sup>60</sup>

Yemen's average annual urban growth largely outpaced its population growth during 1980-2010 (5.9 per cent versus 3.5 per cent). This trend will likely continue, albeit at a slower pace (3.8 per cent versus just 2.1 per cent a year during 2010-2025).

The rapid urbanization is associated with a widening of the rural-urban poverty gap. The two latest household budget surveys (HBSs) of 1998 and 2005 suggest that, measured at the national poverty line, urban poverty fell from 32.3 per cent to 20.7 per cent, and rural poverty declined from 42.5 to 40.1 per cent, widening the rural-urban poverty gap. Further, the very modest decline in rural poverty is not robust to alternative definitions of poverty lines (World Bank 2007), as slightly higher poverty lines would have increased the rural-urban poverty gap between the two HBSs.

Real GDP grew by 2.1 per cent annually between these two surveys, when urban poverty declined far faster than rural poverty – 6 per cent a year versus 0.8 per cent – indicating a very low growth elasticity of rural poverty.<sup>61</sup>

This weak link between growth and rural poverty reduction correlates with the worsening income inequality between the two HBS periods (World Bank 2007).

Between the two HBSs, agricultural growth – the mainstay of rural livelihoods – was quite weak, unlike the expansion in trade and transport.

The prevalence of extreme poverty and associated undernourishment also mirror a dismal income distribution. The prevalence of undernourishment in Yemen is highest in the Middle East, and it showed only slight declines between 1990 and 1992 (28.9 per cent) and 2014 and 2016 (26.1 per cent).<sup>62</sup> The proportion of underweight children under 5 years of age, an indicator of chronic hunger, is estimated to be over 20 per cent.

The picture is equally bleak when it comes to labour markets outcomes. Estimates based on the Yemen Central Statistical Organisation data pegged the unemployment rate at 9.1 per cent on the eve of the reunification in 1990. The figure rose to 13.7 per cent in 1999 and to an estimated 35 per cent in 2010 (SRDC 2014).

### Conclusions and implications for policy and investment

This final section addresses the third overarching question of this report – what can be done to stimulate and support inclusive and sustainable rural transformation? The analysis shows that no NEN country has achieved an inclusive development pattern with relatively fast rural poverty reduction and a concomitant narrowing of the urban-rural poverty gap without carefully considering how rural transformation interacts with the wider structural transformation. Similarly, countries in the NEN region that have ensured a relatively positive environment for transformation rely on a coherent set of core policies and solid institutions. Those lagging behind tend to lack these elements.

These findings confirm the main hypothesis that when structural and rural transformations evolve in step, the urban-rural poverty gap narrows, putting rural development on a sustainable track. Conversely, when the

transformations diverge, that gap widens, excluding many rural inhabitants from the benefits of economic growth. This two-way interaction between the transformations must be factored into strategies and investments underpinning rural development.

Investing in rural infrastructure, enhancing access to farmland and other productive assets for excluded rural inhabitants, fostering the uptake of transformative and affordable technologies, and enhancing access to rural finance are among the levers to steer rural transformation to inclusive pathways.

Although NEN countries have had a wide range of context-specific rural transformation experiences, this chapter has singled out four imperatives:

- Addressing the structural deficit to absorb a rapidly growing and young labour force into the formal economy.
- Boosting productivity in agriculture so that it can become a real engine of growth within diversified rural economies resulting in an across-sector productivity gradient high enough to ignite inclusive rural transformation.
- Building the resilience of rural communities to both human-made and climate-induced shocks – this enhances sustainability of rural transformation welfare gains and is particularly critical for the growing number of fragile countries in the region experiencing conflicts and having to deal with the aftermath for years to come.
- Addressing the region's low female labour-participation rate and enhancing rural women's empowerment in decision-making within their households and in the wider policy choices affecting their livelihoods.

### Entry points for policy

Building on these findings, the employment-growth nexus should be a central piece of any policy aimed at securing inclusive rural transformation. More inclusive rural economies will be elusive unless the employment intensity of rural growth (on- and off-farm) is increased, given projected labour force growth. Accelerating the pace of job creation

will be all the more critical as more women enter the labour force. Set against unrelenting demographic pressures, this challenge must be overcome not only to reduce rural poverty faster, but also to avert social unrest and erosion of state authority.

A territorial approach to development is warranted, given the urban-rural gaps in economic opportunities. This would help synchronize the two transformations and generate synergistic effects. With manufacturing stunted in the region, which has witnessed premature and largely informal tertiarization (and struggles to upgrade manufacturing), NEN countries need to tackle the structural deficit differently from the early transformers among countries in the OECD and emerging Asia.

One way is to use a territorial development approach to complement the more traditional sectoral focus. This would require agriculture in the region to shift decisively to high-value products and create a local – rather than economy-wide – positive labour-productivity gradient. After the necessary investments, this gradient would help reverse some of the current productivity-reducing labour movements (as from low-productivity, subsistence agriculture to an equally poorly productive informal sector).

Policies based on a territorial approach would stimulate a vibrant non-farm rural economy through agroprocessing and other high-value rural activities (as we saw in Turkey). Such policies could consider incorporating a growth corridor approach linking rural and urban value chains with provision of rural finance services and marketing support infrastructure.

These policies could substantially narrow rural-urban gaps in poverty and labour outcomes, helping to avoid the socio-economic pitfalls such as those experienced by Tunisia. Tunisian legislators and policymakers are set to address the issue, however (box 4.3).

The region also needs a shift towards higher water productivity through technological upgrades, in view of the alarming water scarcity prospects, particularly in the NENA subregion. As climate change-induced disruptions of

the water cycle are expected to exacerbate an already critical situation, technologies for prevailing dryland agricultural systems, such as conservation agriculture and water-saving irrigation, need to be scaled up across the region. All agricultural productivity metrics must be closely monitored – labour productivity, yields per unit of land or livestock and water productivity.

Factor endowments, notably availability of irrigation water, allow for enhanced agricultural productivity through sustainable intensification. Per capita renewable water availability in the CIS subregion is nearly 10 times that in the NENA subregion, yet average agricultural value added per worker is only two thirds of that in NENA.

The CIS countries reviewed show slow structural transformation, slow urbanization and a subdued rural transformation. Those countries should aim to match the expected faster urbanization with quicker agricultural productivity to catch up with, for example, Turkey.

Although Kyrgyzstan and Uzbekistan have narrower rural-urban poverty gaps than Tajikistan, they are all grappling with high poverty. For CIS countries largely still in post-transition catch-up mode, fostering high-paced agricultural growth is a priority. But any approach that buttresses corporate farming should not neglect the family-based segment, which needs to be supported to become more profitable. To that end, IFAD engagement based on enhanced targeting and outreach of support services to smallholder farmers is a significant contributor to sustainable and inclusive rural transformation in those countries.

Livelihood options largely determine the mix of policy and investment interventions, as the three main types of dryland agricultural systems often coexist. Interventions in rural areas with high potential for sustainable intensification should focus on maximizing yields, whereas those in marginal areas should focus on increasing resilience to shocks and preventing natural resource degradation. Improving resilience to shocks should be a prominent objective generally, as IFAD and other partners have a growing constituency of rural inhabitants

### BOX 4.3 Tunisia's move to a new territorial development paradigm

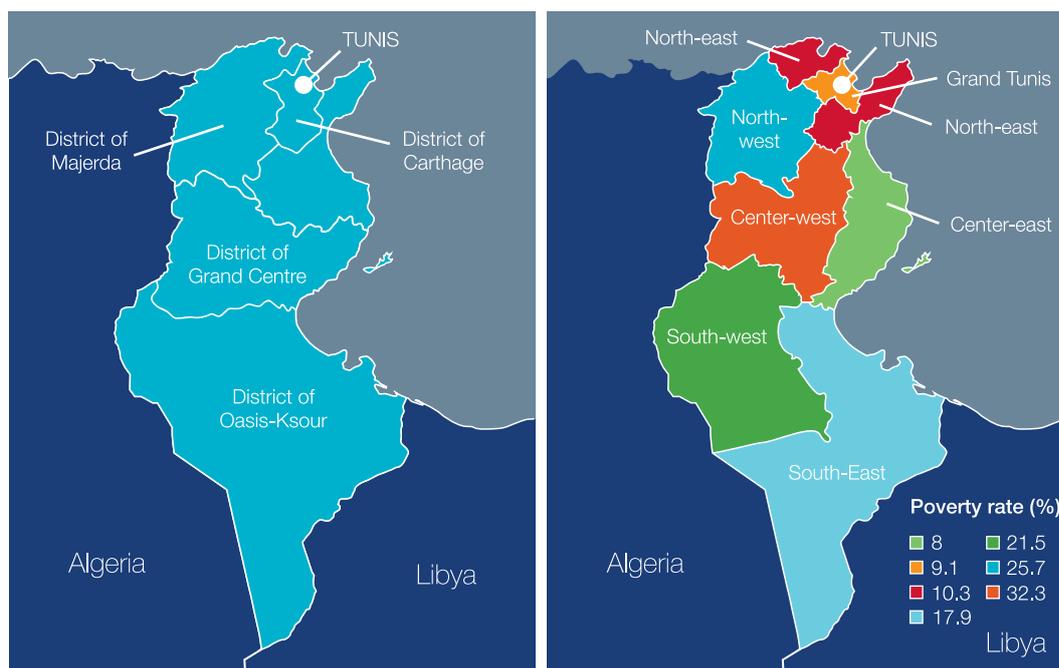
Tunisia has embarked on democratic and territorial transitions which involved the development of a new framework for local governance based on three types of local government – municipalities, governorates and districts. This latter type is new, in a major departure from previous approaches and one that merges largely urban coastal governorates with mainly rural ones in less-developed inland areas.

This framework is based on a study drafted by the Institut Tunisien des Etudes Stratégiques. This drew on the geographical theory of “central places”, which seeks to explain the number, size, and location of human settlements. The study factored in the constitutionally mandated decentralization structure and a regional development index developed by the Tunisian Ministry of Development. The study divides the country into five districts – Majerda, Carthage, Cap Bon-Sahel, Grand Centre and Oasis and Ksour.

These districts will bridge rural-urban developmental gaps. For instance, the capital of the proposed district of Majerda (left map) will be a city with the lowest regional development index, and its remit will aim to establish backward and forward value chain linkages between the industrial areas of Bizerte, the agricultural areas of Beja and Kef, and the thriving services of Tabarka, including its high eco-tourism capabilities.

#### Republic of Tunisia

Map of the new proposed districts and the poverty rate



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

Source: Institut Tunisien des Etudes Stratégiques; Map compiled by IFAD, June 15 2015.

in fragile situations. For countries mired in prolonged conflict, the main thrust should be investing in human and physical assets. Rural investments and their job creation, mainly for youth, increase the opportunity cost of engaging in conflicts (IFPRI and IFAD 2015).

To avert looming conflicts over resources – mainly water – governments should emphasize water productivity and participatory management of other natural resources, such as pasturelands, alongside labour productivity.

Lowering exposure and vulnerability to risks is also vital for policy and investment. Diversifying rural economies through off-farm work – offering waged or self-employment – helps to alleviate rural poverty and helps countries cope with conflict. Such a strategy is crucial for poor rural households, who usually bear the burden of fragility.

Because several types of livelihoods often coexist in a household, interventions can promote income diversification in fragile contexts. Other interventions include building the capacity of policymakers and other rural development practitioners to use downscaled climate models for long-run planning.

These recommendations will be ineffective, however, unless rural women are empowered. The region still has the lowest rate of female-labour participation in the world – 26 per cent versus a global average of 56 per cent. Labour-related gender disparities remain pronounced, with average male labour force participation of 76 per cent, nearly three times the female rate. However, shifting cultural norms, improved access to education and vocational training, and the increasing role of modern, high-value agricultural supply chains, are all likely to increase women's participation in rural labour markets.

Shifting to these supply chains would benefit rural women through product-market channels (contract farming) or labour-market channels (hired labour in food-processing industries). This change will affect intra-household control of income, as women's control in that area is strongly correlated with women's access to labour markets and paid employment (Quisumbing and McClafferty 2006). More

widely, labour participation by women helps to achieve broader development goals, and their rising income is likely to improve child nutrition and increase spending on education and health (FAO et al. 2010).

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## Spotlight 4: Fragile situations

### The development challenge posed by fragile situations

Given the increasing prevalence of civil strife, insecurity, population dislocation and natural and human-made disasters, prospects for inclusive transformation in fragile situations require attention. Fragile situations experience the most intractable development issues. Addressing the effect that fragility has on development is a priority for the international community.<sup>63</sup>

Structural and rural transformations occur in fragile situations, but are usually not inclusive and the livelihoods of poor and excluded rural people often are disrupted. This contributes to displacement or increased rural-urban migration (or both), spurred by the need for security, work and access to basic services. If structural and rural transformations are inclusive and accompanied by inclusive governance and institutions, then they are perhaps less likely to be undermined by fragility. Nonetheless, in areas with ongoing armed conflicts within states, across borders or at a regional level, or where conflict is entrenched within or between political movements, they can shape economic and social development across rural and urban spaces. Those areas usually require development interventions, tailored to their context and drawing on experience and the key international principles of engagement. These include humanitarian principles, the “do no harm” approach, and the 11 Principles of the Framework for Action of the Committee on World Food Security (CFS 2015).

This Spotlight draws on evidence from experience by the IFAD and the wider literature to review the ways in which fragility poses critical challenges to achieving inclusive structural and rural transformation. It argues that fragility should be addressed case by case, with interventions based on solid analysis.

### Some differences in fragile situations

During the past 10 to 15 years, international development organizations, such as the OECD, the World Bank and the African Development Bank, have sought to adapt programming and investments to the development challenges in fragile situations. Most definitions of fragility emphasize several common features – weak policies, institutions and governance, insecurity and conflict, very limited capacity of the state to deliver basic public services and environmental hazards and natural disasters.<sup>64</sup> Fragility also relates to the state of society and social relations. The rural poor (often in remote locations) are particularly at risk, severely food insecure and highly dependent on government services (IFAD and IOE 2015).

Fragility is a complex phenomenon that can affect transformations in a variety of ways. It may, for example, impede the efficient flow of resources to industrial and urban-based economic activities, obviating higher productivity and incomes. It may also exacerbate rent-seeking behaviours.

According to OECD criteria, the world had 47 fragile states and economies in 2013 and in 2015 it had 50 (OECD 2013). Those fragile situations were home to 1.4 billion people – 20 per cent of the world’s population (and 43 per cent of the global population living in absolute poverty).

More than half of these situations were in Africa.<sup>65</sup> A large proportion of IFAD-financed programmes in Africa – more than 50 per cent in the Near East, North Africa, Europe and Central Asia – are in situations<sup>66</sup> that have recently been or are now considered to be fragile.

The sources of vulnerabilities vary sharply in four very different country contexts,<sup>67</sup> from natural disasters to social unrest, resource competition and conflict (box S4.1). All of the countries selected in box S4.1 are considered fragile according to OECD data. These were selected based on a review of critical factors of fragility, key data on poverty and development trajectories, and a purposive choice to reflect a *diversity* of fragile situations across Africa, Asia and Latin America and the Caribbean.

**BOX S4.1 Profiles of the factors of fragility in four countries**

*Bangladesh* is not in violent conflict or emerging from it and has had high economic growth in recent years. Yet the country continues to have high vulnerability to natural disasters (cyclones, storms, floods, etc.), particularly in zones affected by extreme weather events and climate change risks, although its management of these disasters is becoming more effective. It also has political contestation and unrest, and marked inequalities that affect women, youth and poorer groups.

*The Democratic Republic of the Congo* suffers from organized armed conflict in some regions, such as the northeast and particularly in border areas, widespread poverty and inequality, vulnerability to natural disasters, political disruption, weak government and civil society institutions, major governance challenges at national and local levels, widespread corruption and clientelism, heightened vulnerability to personal violence and crime, many displaced people, natural resource competition among population groups, incapacity of government to deliver basic functions and services to most people, weak public financial management and an absence of structural and rural transformation.

*Haiti* is not a country in conflict or emerging from it. However, high vulnerability to climate-related shocks and natural disasters (hurricanes, earthquakes and storms) is exacerbated by environmental degradation. It also has high levels of poverty and vulnerability, social discord and violence, weak institutions, political instability, widespread corruption, inability of government to deliver basic functions and services to most people, many displaced people in camps since the 2010 earthquake and an absence of structural and rural transformation.

*Sudan* experiences recurrent erratic weather conditions induced by changes in climate (variable rainfall, droughts, floods, temperature anomalies and extreme temperature shocks) (Calderone et al. 2013; IFPRI 2006). These render smallholder farmers and rural people depending on agriculture vulnerable and contribute to competition among diverse users of increasingly scarce natural resources (particularly between nomadic and semi-nomadic herders and crop producers). Vulnerabilities also include environmental degradation, high levels of poverty and vulnerability in rural areas, fragile emergence from violent conflict in certain areas and continuing crises, for example in Darfur. The number of internally displaced people, although still high, has decreased sharply, as has the frequency of disasters since the independence of South Sudan in 2011 (see also IFAD IOE 2014).

Sources: Calderone et al. 2013; IFPRI 2006; IFAD and IOE 2014.

**Key issues in fostering inclusive rural transformation in fragile situations**

The diversity of fragile situations seen in box S4.2 needs to be fully understood to establish the approaches that have proved most successful in similar contexts.<sup>68</sup>

*Key issue 1:* In countries emerging from conflict, such as the Democratic Republic of the Congo and Sudan, conflict-sensitive programming based on more comprehensive knowledge (IFAD and IOE 2015) is critical in efforts for inclusive rural transformation. Such situations are particularly vulnerable to a recurrence of violence. Nearly one quarter

of all comprehensive peace agreements fail in the face of a relapse into conflict and an even higher proportion experience debilitating crises of governance and high levels of violence (especially against women) (UNDP 2010). Supporting inclusive rural transformation in countries recovering from conflict inevitably requires a long period – often longer than where fragility is related to a one-off natural disaster.

*Key issue 2:* Conflict sensitivity of projects and programmes should be in line with the key international humanitarian principles enshrined in several United Nations General Assembly Resolutions (humanity, neutrality, impartiality

and independence; UN OCHA 2012), the “do no harm” approach and the 11 Principles of the CFS Framework for Action (CFS 2015). Gender inequalities at all levels need to be addressed, as women and girls in conflict-ridden countries are often much more exposed to physical, sexual and domestic violence, exploitation and discrimination, for example in the Democratic Republic of the Congo (UNDP 2014; Dzinesa and Laker 2010). In the Democratic Republic of the Congo, inclusive development remains elusive for women, girls and young people; gender equality and freedom from violence and sexual exploitation are far from being achieved there (ibid.). Congolese women are observed to suffer from very low levels of economic and political power, exclusion from decision-making processes, a relative lack of education and training, and a lack of access to productive assets (see UNDP 2014).

*Key issue 3:* The participation of rural people and their organizations in decision-making and resource management is as important in fragile situations as in other settings, to promote both social cohesion and stronger

institutions. However, this must be matched by the institutional development of government administration at national and local levels. Inclusive governance, participation, gender equality, decentralization, transparency and accountability are essential both to mitigate conflict risks and to build the capacities of rural organizations in managing land and natural resources.

*Key issue 4:* Natural disasters and climate threats exist in all the four countries that served as case studies to underpin the arguments in this Spotlight. Such threats require support for research and local knowledge, greater awareness of climate issues among all stakeholders and increased investment in adapting to climate change and making rural people less vulnerable to shocks, and disaster preparedness and response built into programmes. Policy support and greater intersectoral coordination among ministries are needed to provide equitable access to vital natural resources.

*Key issue 5:* In many fragile situations, especially where public-sector capacity is weak, private actors and non-governmental

#### BOX S4.2 Establishing conflict resolution centres to address natural resource competition in Sudan

Conflict sensitivity in fragile situations should be in line with humanitarian law and the ‘do no harm’ approach. It requires paying special attention to addressing the impacts of conflict and violence on women and girls, such as the degree to which they are exposed to physical, sexual and domestic violence (see CFS 2015). As shown in the case of the Democratic Republic of the Congo, gender inequalities at national, local and organizational levels and specific challenges related to violence, exploitation and discrimination faced by women and girls in fragile situations need to be addressed to contribute to building social cohesion. Conflict resolution centres, as have been developed in Sudan, can be an effective tool to mediate competition and conflict between natural resource users and foster inclusive approaches to natural resource use and management that allow wider benefit-sharing. In Kordofan, Sudan, IFAD has sought to bolster social cohesion, empower women and build local capacities. It has supported local communities and their leaders to establish and manage local conflict resolution centres to address conflicts over land and natural resources in a context of environmental degradation and unequal intra-household distribution of roles. Nomadic and semi-nomadic herders have access to mobile teams of agricultural service providers and project resources are available to mobile and settled communities. A reduction in conflicts between settled farmers and herders has been observed in this area and fewer cases of conflict are being reported to the conflict resolution centres.

Sources: CFS 2015; IFAD 2015.

organizations deliver significant services to support inclusive rural transformation. Because of weak public institutional capacity in Haiti, private service providers often are contracted to carry out investment activities and, in some instances, to manage parts of development projects. However, this approach does nothing to enhance community capacities, can raise administrative costs sharply and diverts resources from their intended beneficiaries. Special efforts are required to ensure that different ethnic, tribal and indigenous peoples maintain their rights to resources (particularly land and natural resources) to avoid inequalities or exclusion, which feeds competition, conflicts of interest, conflict or instability (see IWGIA 2012).

*Key issue 6:* In fragile situations where natural disasters are the most significant source of fragility, such as Bangladesh, inclusive rural transformation may still be seen outside the disaster zone. That country's capacity to manage such natural hazards has dramatically improved, with far fewer casualties from floods and cyclones than in the 1970s. In Haiti, the United States Agency for International Development, the World Bank, and IFAD have all published examples of how the lives of individuals or small groups in rural areas have been transformed with support from external interventions. Nevertheless, these studies do not demonstrate the achievement of a sustained structural and inclusive rural transformation at a larger scale than individuals or small groups of programme beneficiaries. According to Oxfam (2012), after the 2010 earthquake, agricultural and rural development programmes could have had a more positive effect if they had not adopted unsustainable, short-term interventions.

*Key issue 7:* In the Democratic Republic of the Congo development assistance remains fragmented, limiting opportunities for synergies. Development and relief actors need to operate in closer partnership (CFS 2015).

*Key issue 8:* Border areas are often the most socially and economically dynamic ones. Cross-border mobility can enable rural people to find sufficient security to continue

remunerative agricultural and rural economic activities. However, when conflict and instability are widespread in border regions, rural people – particularly the excluded – can be more vulnerable, insecure (with the cross-border movement of armed groups) and excluded from development processes, for example marginalized forest peoples living between Guinea, Liberia and Sierra Leone (see Hussein and Gnisci 2004; Grimm et al 2015).

### **Policies and actions to promote inclusive rural transformation in fragile situations**

Several key messages stand out for fostering inclusive rural transformation in fragile situations:

- *Rural transformations are observed in fragile situations, yet they often are not inclusive nor do they bring about structural transformation.* However, efforts by governments and development programmes to foster inclusive transformation can contribute to successful inclusive structural and rural transformation and reduce the risks of countries and regions becoming more fragile.
- *Governance, institutions and participation are weak.* Most have weak institutions and civil societies, raising questions about the legitimacy of government bodies. Therefore, it is a challenge to ensure effective country ownership and the participation of marginalized groups in decision-making processes, yet these are vital. A fundamental question relates to how international financial institutions can best engage in fragile situations where government legitimacy is questioned and where the primary instruments for development assistance remain loans and grants channelled through government. Institutional capacity building is needed in these contexts, but expectations of impact in the short term should be modest.
- *Programming should be informed by a better understanding of context.* Rural development policies and programmes need to be tailored to the fragile situation based on regularly updated analysis. Deeper situational analysis, including of the political economy, is vital for

interventions (CFS 2015; Seddon and Hussein 2002).

- *Gender, ethnic and generational vulnerabilities have to be tackled.* Excluded groups may be especially vulnerable, requiring special attention in programmes.
- *Natural resource competition and conflict require particular focus.* Forums or customary institutions for equitable natural resource management and conflict resolution need to be set up or strengthened.<sup>69</sup>
- *Regional and cross-border issues.* Regional dynamics have been shown to be very important, for example in the Middle East, the Horn of Africa, the Sahel and West Africa. When conflict and instability are widespread in border regions, rural people can be more vulnerable, insecure and excluded from development processes.
- *Rural development policies and programmes – and international interventions – should be informed by international best practice.* They should systematically take into account principles for engagement in fragile situations and protracted crises, and they should be tailored to the characteristics of rural contexts.
- *More flexible programming and greater capacity of programme management staff are required.* These resources are essential to respond to rapidly changing environments.

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## **PART TWO** Thematic analysis

## CHAPTER 5

# Employment and migration



## Summary

The better the job prospects, the greater the chances that rural people will be able to improve their lives. The converse is also true. Poor employment trends will have major implications for rural and agricultural development strategies. Agricultural growth and rural job creation are central to such strategies under both scenarios.

Recent decades have witnessed profound changes in both supply and demand for labour. Some changes have been global in impact, while others have been specific to certain regions and country types.

On the supply side, the widely discussed “youth bulge” will continue affecting sub-Saharan Africa (SSA), North Africa and the Middle East primarily, even though market entrants as a share of the existing labour force are now finally declining, albeit much more slowly than in the rest of the world. Rural-to-urban migration now accounts for well under half of urban population growth in all regions. Such migration appears unlikely ever to play the same role it did in urbanizing the countries of the OECD and the East Asian industrializers.

On the demand side, driven by job “deindustrialization”, the recent global erosion of low-skilled jobs is likely to continue. (Deindustrialization is marked by a declining share of employment in the industrial sector, propelled by automation based on computerization, robotics and so-called “Big Data”, and spread worldwide by the rise of global trade.) This presents special challenges for poor countries with abundant, and, in some cases, growing labour forces with few skills. Patterns of transformation seen in the past, where low-skilled labour left agriculture to low-skilled, but higher-paying jobs in industry, will be hard to replicate.

An overarching challenge for the poorest groups in general, and for women in particular, is the “meso” and the “micro” paradoxes. The meso paradox is that the zones needing to diversify income the most have the lowest capacity to do so, as they tend to be impoverished and so are weak at generating investable surpluses and effective demand. The micro paradox is the household analogue of

the meso paradox, wherein rural households in hinterlands or with low assets have a strong incentive, but little ability to engage in work off-farm that delivers higher returns. A logical extension of the two paradoxes is that the asset-rich are much better able to take advantage of many of the job opportunities that open up with economic growth and rural transformation.

To foster employment growth, a diversified approach is needed. In economies dominated by agriculture-based and other rural livelihoods, employment growth in the farming and rural non-farm sectors will remain a major source of the total, though farming’s contribution will progressively fall. Labour-intensive manufacturing will continue to provide jobs to low-skilled workers, but fewer than in the past. Governments should encourage such employment wherever possible, by improving the business environment, investing in transport and communications, and opening the economy to trade.

In all tradable sectors, including agriculture, liberalized regional trade will be especially important for many countries, especially those that have industrialized least. In these cases, open and growing regional markets can provide a larger “playing field” on which manufacturing and other firms can expand their production while competing effectively in markets similar to their own. Exports to world markets should also be pursued.

Jobs in the service sector are set to increase, but many will be informal, a fact that should be embraced as a reality across nearly all countries. Informal workers should have assistance to function well, through skills investment, infrastructural provision and legal protection against harassment. The state’s role is to strengthen the fundamental capabilities of its population, providing a broad cushion of benefits to address public goods and improve the business environment through infrastructure investment.

## Demographic trends: the youth bulge, urbanization and migration

The three main demographic trends with implications for rural employment prospects

worldwide are the youth bulge (the number of youth entering the labour market), urbanization and rural-urban migration.

### The youth bulge

Population growth is by far the highest in SSA. The region as a whole and every region in it (except Southern Africa) show annual growth of at least 2.6 per cent; no other region exceeds South Asia's 1.29 per cent.<sup>70</sup> Thus all other areas of the world are experiencing at most half of SSA's population growth rate.

One result is that SSA has seen a much slower decline in the share of its youth in total population (figure 5.1). For this analysis, we classify countries by region and by level and recent growth of per capita GDP.<sup>71</sup>

- SSA (excluding South Africa)
- Lagging Latin America and the Caribbean (LAC) (Guatemala, Haiti and Nicaragua)
- Rest of LAC (Brazil, Chile, Columbia, Cuba, Dominican Republic, Mexico and Peru)
- Lagging South-East Asia (Cambodia, the Philippines and Viet Nam)
- Rest of South-East Asia (Indonesia, Malaysia and Thailand)
- South Asia (Bangladesh, Bhutan, India and Nepal)
- Rest of Asia (China and Iran (Islamic Republic of))
- Near East and North Africa (Egypt, Morocco, Sudan, Tajikistan, Tunisia, Turkey, Uzbekistan and Yemen)

In all areas of the world other than SSA and lagging LAC, the proportion of youth in the total population began declining in the mid-1960s and proceeded rapidly from that point. The decline in China was the sharpest.

Lagging LAC and SSA began to see this share fall only from around 1990, more than 20 years later than the rest of the world. Yet the decline has been far more rapid in lagging LAC than in SSA. By 2013, SSA's youth proportion had fallen only slightly. Based on United Nations projections, SSA's youth share will continue to fall faster, though not as fast as in lagging LAC. SSA thus faces a much steeper challenge than

other regions of the world in absorbing youth into its labour force.

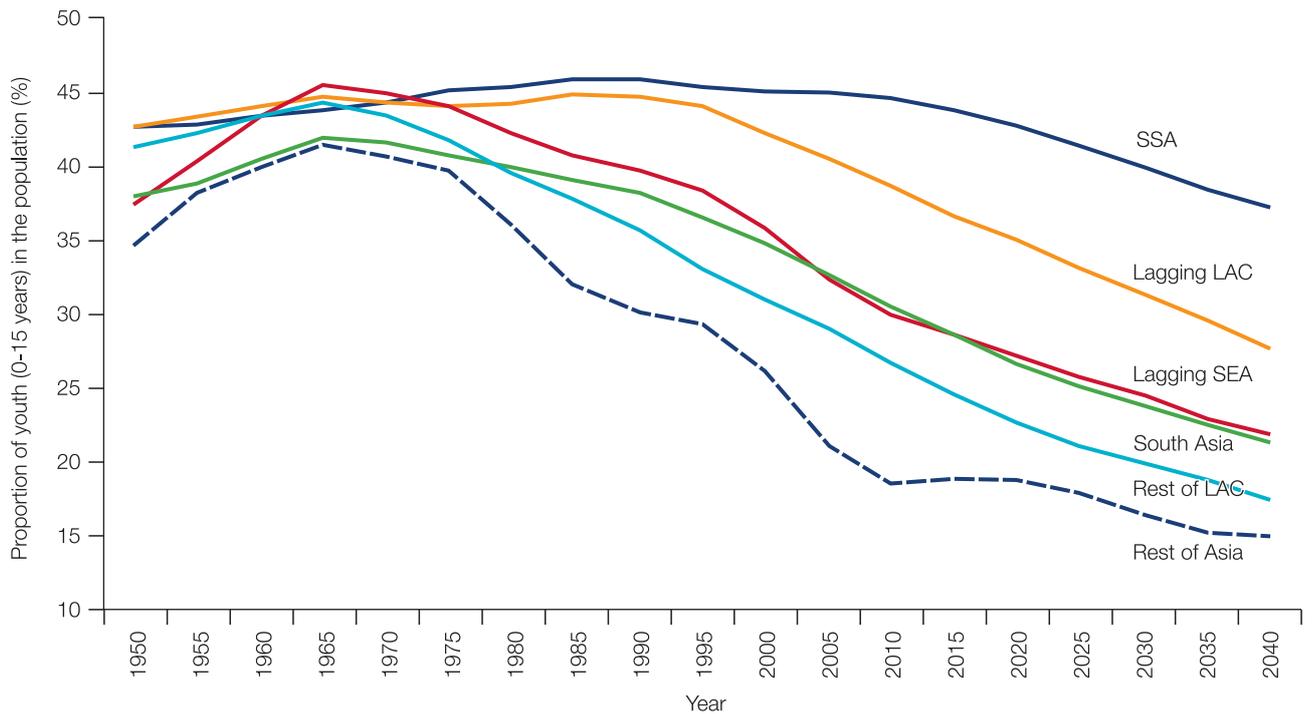
Driven by the above shifts, the youth bulge has been falling in every region of the world since 1990 (figure 5.2).<sup>72</sup> This fall has, however, been very slow in SSA, and from the highest base. For example, while all other regions had to absorb a number of youths equal to 2.8-3.8 per cent of their existing labour force every year in the early 1990s, lagging LAC and SSA each had to absorb about 4.5 per cent. By 2013 this figure had fallen to 3 per cent in lagging LAC, but only marginally in SSA to 4 per cent.<sup>73</sup> In every other region this measure was 2.2 per cent or less by 2013. The youth bulge, then, is largely confined to SSA, and is a "bulge" only when seen against other regions, because actual numbers of youth labour-market entrants in SSA are falling, not rising.

Three key points stand out in the relative youth bulges in SSA and lagging LAC. One, a bulge can help countries be competitive in labour-intensive sectors by damping wage rises. But the low shares of manufacturing in these countries, and the rising difficulty of developing the sector, suggest that it will only play a small part in helping ease youth unemployment. Two, a bulge is a challenge in that it raises the chances of an excess supply of labour, which may have unwanted socio-political outcomes including political instability. Three, the bulge imposes very large investment costs on governments if they are to build the capacities in youth that are needed to increase their productivity and make them an attractive source of labour for investors.

### Urbanization

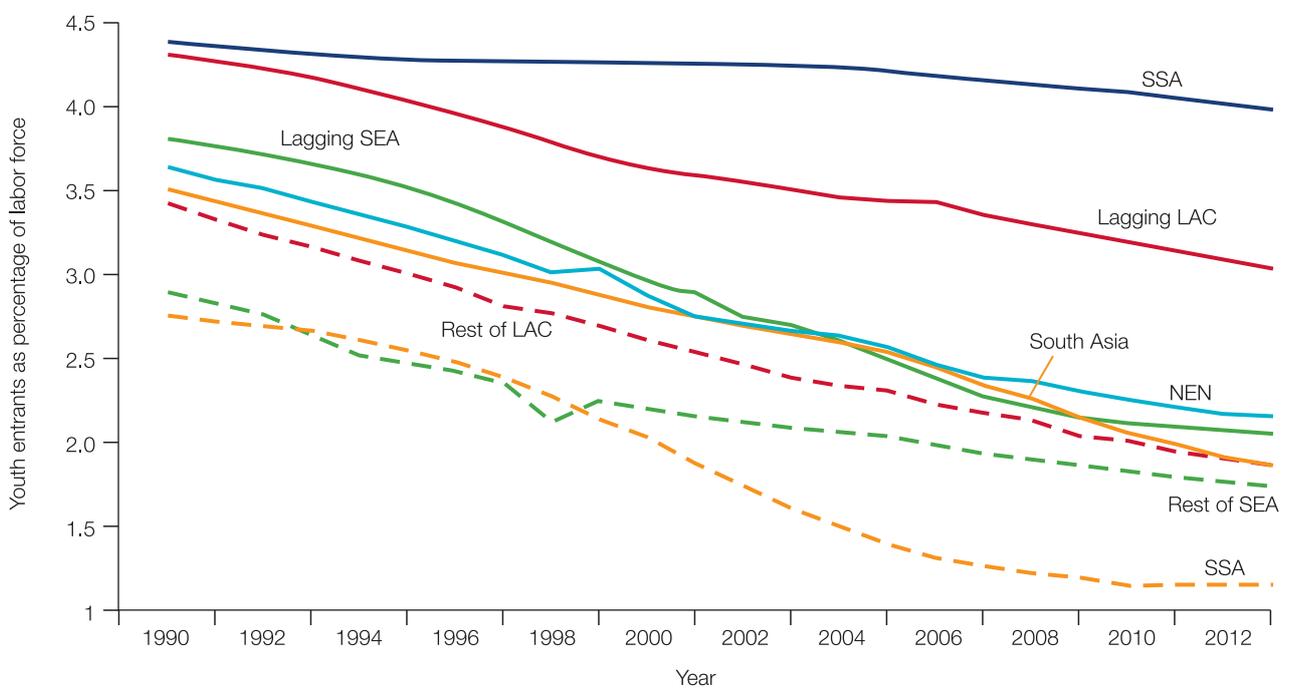
Populations have urbanized quickly in all regions (figure 5.3). Urban populations in SSA, lagging South-East Asia and South Asia are 30-40 per cent of the total population. This group of regions will stay together and reach close to 50 per cent urbanization by 2040. The rest of Asia has joined lagging Latin American countries at around 55 per cent urban population, and this combined group will move to around 70 per cent urbanization by 2040. The rest of the non-lagging (other) LAC will increase

FIGURE 5.1 Proportion of youth (0-15 years) in the population, by region, 1950-2040 (%)



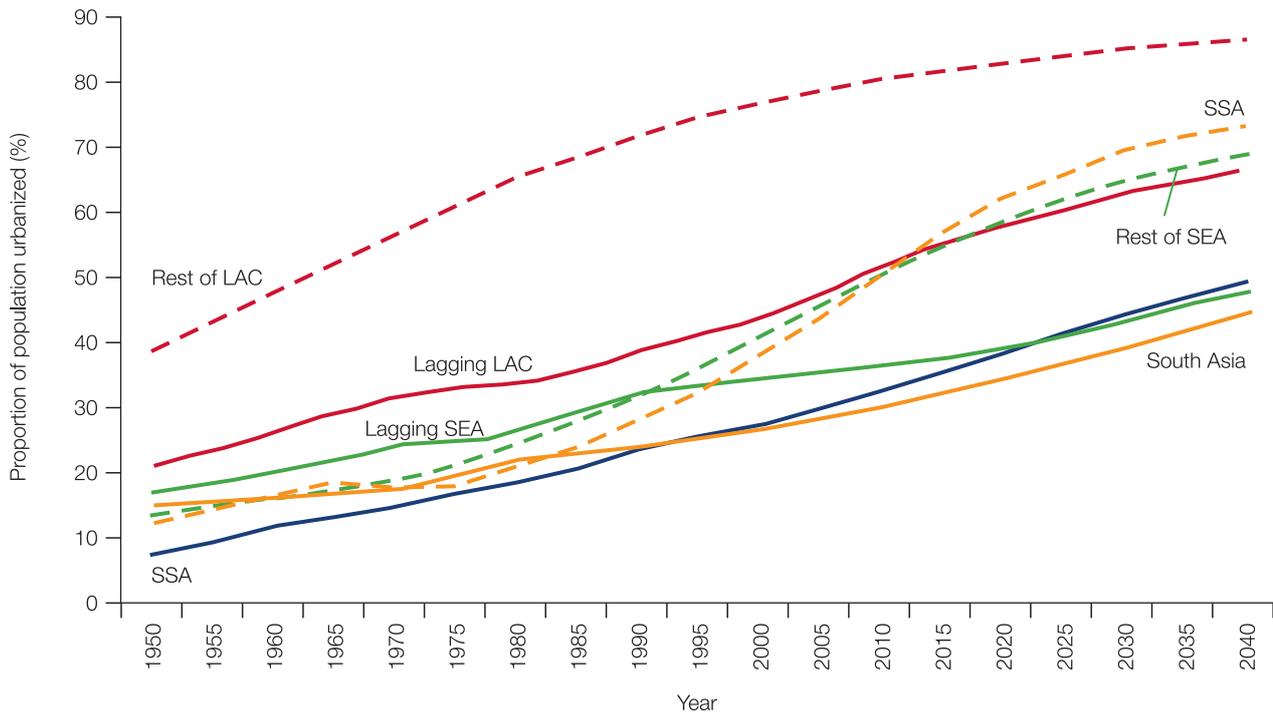
Note: LAC = Latin America and the Caribbean; SEA = South-East Asia; SSA = Sub-Saharan Africa.  
Source: United Nations data.

FIGURE 5.2 Youth entering labour markets as a proportion of the existing labour force, by region, 1950-2013 (%)



Note: LAC = Latin America and the Caribbean; NEN = Near East, North Africa, Europe and Central Asia; SEA = South-East Asia; SSA = Sub-Saharan Africa.  
Source: United Nations data.

FIGURE 5.3 Proportion of the population urbanized, by region, 1950-2013, and projected proportions to 2040 (%)



Note: LAC = Latin America and the Caribbean; SEA = South-East Asia; SSA = Sub-Saharan Africa.  
Source: United Nations data.

their urbanization rates slowly to within the 80-90 per cent range.

The pattern highlights two aspects. First, urbanization has occurred not just in mega cities, but also in intermediate cities and towns. In most developing countries, the populations in cities and towns of less than 1 million have grown at least as fast in percentage terms as those in larger cities (Christiaensen and Todo 2015: Appendix A). Such decentralized urbanization is good for the prospects of rural populations to incrementally work their way out of poverty through off-farm employment (Christiaensen et al. 2013). It also helps local agriculture by bringing urban demand closer to farms.

Second, rural-urban movement has been less important to the developing world over the past 50 years than it was to the early industrializing countries. Instead, the urban “natural increase” has been more significant. This switch has been driven by several factors – urban death rates today are lower than they used to be. Urban birth rates have fallen more slowly in Africa than in the rest of the world (Jedwab et al. 2014),

and so the urban natural increase now accounts for at least half of urban growth in Africa, Latin America and Asia. While rural-urban migration accounts for the rest, some share of this “migration” involves no movement of people, arising instead from reclassification of rural into urban households due to growth in settlement size. Thus movement of rural households to urban areas in all regions of the developing world now accounts for well under half of total urban population growth.<sup>74</sup>

### Migration

Rural-urban (and international) migration represents economic opportunities distributed unevenly among rural households, reflecting conditions such as distance from the city, pre-migration income and education. Migrational employment can be a “permanent” move from the rural area, a seasonal move or a commuting arrangement into the urban area. The opportunities are seen in three main areas.

They are linked, first, to direct employment in urban areas, other rural areas and foreign countries. Remuneration tends to be positively

correlated with distance of migration – relatively low returns from migrating to another rural area (like migrant farm labourers), higher for migration to cities, and higher still for movement to foreign countries. The destination's remuneration is generally correlated with the formality and skill level of the job (if a wage job) or the investment requirement if the migrant becomes self-employed.

Like earnings from rural non-farm employment (RNFE), migration remittances can be invested in agriculture or the rural non-farm sector, creating indirect employment in the sending rural areas from investment linkages and so creating multipliers from investment in agriculture (Taylor 1992) and in rural non-farm activity (Taylor 1999; Wouterse and Taylor 2011 for Burkina Faso). These investments in the sending areas can be self-employment or employment of third persons in those businesses, as well as induced employment in spin-off activities.

Remittances can, however, have differential effects according to the distance of migration, which is correlated with the remuneration and thus remittances. Wouterse and Taylor (2011) found in Burkina Faso that migration within West Africa had little effect on the sending-area's agriculture and local RNFE, but that intercontinental migration stimulated livestock accumulation, while reducing grain farming and local non-farm activity.

Finally, migration can influence the sending locality's farm labour market directly by reducing sending-family labour to agriculture or by increasing labour hiring to replace migrants. Further, where local credit markets function poorly, migration income can fund investment in mechanization (Taylor 1992 and Reardon et al. 1994 for Africa). While mechanization often displaces labour, in the case of irrigation pumps, it augments the productivity of and demand for labour for other tasks. In smallholder farming systems, mechanization induces machine rental markets, enabling smallholders to benefit, and changing the labour market for the long term (for the Philippines, see Takahashi and Otsuka 2009).

In pure economic terms, migration is, on the one hand, a function of incentives, usually measured as the rural-urban wage differential net of transport or transaction costs (Lewis 1954; Todaro 1969; Massey et al. 1993). On the other hand, a would-be migrant's ability to act on that incentive is a function of capacities, such as initial skills, investment capital (in land and non-land assets), predetermined migration networks and so on. These capacities are often concentrated in relatively favourable agricultural environments (Reardon and Taylor 1996; Sadoulet et al. 2001). Also, they are generally greater for men than women and for young people than older ones. The essence is that those with the least capacity migrate least, and that the distance and the returns from migration are higher for those with more prior assets.

It is for these reasons that Lipton (1980) found that migration is "unequalizing" in the sending locality, a proposition much tested empirically since. Corral and Reardon (2001), for example, showed that even in places like Nicaragua where migration is thought to be widespread, only a small share of rural households (and the better off before migration) undertake it. Taylor et al. (2005) showed that poorer migrants (still often better off than non-migrants) migrate internally in Mexico while richer rural households migrate or send migrants to the United States. The consequence is that migration often makes it harder to include women, poor regions, poor people and ethnic minorities in mainstream growth trends.

### **Deindustrialization and automation**

A major threat to meeting the inclusive employment challenge in developing countries is the worldwide trend towards deindustrialization, driven by automation and global trade liberalization. These two drivers work in tandem, with automation decreasing the demand for labour and global trade spreading this effect worldwide. One possible effect is that one of Africa's potential competitive advantages – a plentiful supply of low-cost labour – becomes less attractive to global investors as the share of labour cost in total cost declines.

The centrality of formal manufacturing to overcoming this challenge is based on two characteristics that make it especially effective in supporting the structural transformation of economies (Introduction). First, it exhibits “unconditional convergence” in labour productivity (Rodrik 2015). That is, its labour productivity in manufacturing tends to rise over time to world standards, regardless of the broader economic conditions in which it takes place. Manufacturing workers in, say, Bangladesh, see their wages begin to rise once the Lewis turning point is reached,<sup>75</sup> ultimately reaching world levels for that skill level, despite the poor conditions of the surrounding economy. Though others have claimed to show such convergence for formal services (KinfeMichael and Morshed 2015), this literature is less established. In either case, formal manufacturing also spurs growth in formal services.

The other characteristic is that formal wage work tends to be more stable than informal sector jobs or self-employment and to offer social benefits that enhance household financial stability. Such stability self-evidently brings important social, political and development benefits.

Falling shares of employment in formal manufacturing (and related formal services) push labour coming off the farm into informal activity and self-employment, most typically in services. A key question – quite aside from concerns about their instability – is whether these types of jobs can generate the same growth in labour productivity (and thus incomes for workers) typically delivered by formal manufacturing. We touch on this issue throughout this chapter, but here note that the answer is very likely “no.”

Deindustrialization has two types. Employment deindustrialization refers to a declining share of employment in industry, while value-added deindustrialization is a declining share of industry in an economy’s total value added. Historically, because manufacturing has tended to be more labour intensive than other industrial sectors, such as mining or other natural resource-based activities,

manufacturing has accounted for about 90 per cent of industrial employment.<sup>76</sup>

Employment- and value-added deindustrialization can diverge. Automation causes the former to start much earlier and progress faster than the latter. Value-added deindustrialization is in part a natural result of structural transformation as incomes grow past a certain point and consumer expenditure shifts from manufactures towards services, just as it shifted towards manufactures from food earlier in its growth. In developed countries, for example, industry has largely maintained its share in real value added while its employment share has fallen sharply (Rodrik 2015).

“Premature deindustrialization” is defined relative to the path and speed of the historical shift in developed countries and is seen in many developing countries, which are deindustrializing at lower peaks of industry’s employment and value-added shares, and at lower per capita incomes than today’s developed countries did. For example, Rodrik (2015) shows that historically in OECD countries the industrial share in national employment peaked around 30 per cent when income levels were about US\$14,000 (in 1990 United States dollars). Today in the developing world, countries such as Brazil and India have seen their share of industrial employment in total employment peak at 13-15 per cent when incomes were US\$5,000 or less. India and some African countries may have peaked at incomes of only US\$700.

Automation is accelerating and spreading its influence from low- to higher-skill jobs. This impact has started first in manufacturing then – currently nascent, but set to grow – in services. The progression is from routine manual activities for manufacturing to routine service activities (such as scanners in supermarkets) to more complex services (such as legal case reviews, which are already starting to be automated). This progression is driven by the merging of robotics, digital technology and “Big Data”. This latter is based on massive and rapidly growing databases on consumer behaviour that are fed by the use of the internet and cell phones. These databases are set to explode in volume over the coming years,

when “the internet of things” ties machinery, appliances and even clothes more closely to the internet. With the continued unfolding of Moore’s Law, which predicts that computing power will double every 18 months – and thus increase 1,000 times every 15 years – these technologies allow increasing use of computing power to solve problems and carry out tasks until recently thought to be the domain of human beings (Brynjolfsson and McAfee 2014, 2011a, 2011b; Autor 2014; Ford 2015).<sup>77</sup>

Fortunately, as employment deindustrialization plays out across the world, agrifood systems in developing countries are modernizing (or “industrializing” – see the chapter on markets and value chains). This modernization is driven by urbanization and rapid income growth, resulting in changed diets and very rapid growth in demand for processed and perishable foods through mass-consumption markets (Monteiro et al. 2011; Popkin 2014; Zhou et al. 2015; Tschirley et al. 2015a, 2015b; Dolislager et al. 2015; Reardon et al. 2015). Such foods could see market-demand growth in SSA of seven to 10 times in the next three decades (Tschirley et al. 2015b), driving a rapid rise in the share of off-farm value added.

## Effects of deindustrialization on employment and rural livelihoods

### Employment

The dynamic discussed above, of deindustrialization driven by automation and spread worldwide by global trade, could have three effects on employment. It could change its composition, its quality (wage rates, stability, social benefits, etc.), and its level. We first discuss the evidence on these issues – much of it generated in the industrialized world – and then we consider the implications for developing countries.

### Composition

This impact relates to labour-market polarization and the “disappearing middle”. The empirical record is strong, showing three changes (Autor and Dorn 2013; Feng and Graetz 2015). Jobs in the middle-skill, middle-wage portion of the distribution have declined, jobs in the high-

skill and low-skill ends of the distribution have risen, and the increase in low-skill jobs has been generated by the combination of a sharp worldwide decline in jobs requiring routine manual tasks (traditional manufacturing jobs) and an even larger rise in the number of low-skill service jobs.

A widespread concern is that continued advances in computer processing speed and robotic dexterity will reverse the increase in low-skill service jobs (a key engine of job growth in advanced countries over the past two decades) and drive an overall decline in low-wage jobs. Examples of automation of low-skill service jobs include ubiquitous ATM machines replacing traditional bank tellers, widely deployed retail checkout scanners, and the near disappearance of secretaries in many offices because of computerization. Banking industry data and analysis suggests that “traditional bank tellers” will disappear, replaced with higher-skilled information providers. This is consistent with automation taking over routine jobs and converting them into jobs requiring greater skill. Since late 2014, Lowe’s Home Improvement Stores in California, United States, have been testing OSHbot, a robotic shopping assistant with the potential to dramatically reduce the on-floor human sales force in the chain (Wall Street Journal 2014). Many other such robotic assistants, including those for homes and offices, are in advanced stages of development.

Frey (2013) estimates that 47 per cent of all jobs in the United States, and 70 per cent of that country’s low-skill jobs, are at risk of loss through automation over the next 20 years. He is explicit. “Our model predicts a truncation in the current trend towards labour-market polarization. As technology races ahead, low-skill workers will reallocate to tasks requiring creative and social intelligence. For workers to win the race, however, they will have to acquire creative and social skills,” (Frey 2013, p. 45). Another concern from computing and robotic advances is that the incursion of automation into some high-skill, non-routine service jobs will pick up speed.

Two categories of jobs seem less vulnerable to automation. In one category are the middle-

skill service jobs requiring creativity and judgment (Frey 2013) that are specific to a place (largely skilled trades such as plumbing, electrical, equipment repair and so on). In the other category are high-skill jobs requiring abstract procedures and creativity that can be complemented by computing power – professional, technical and managerial positions whose holders become more productive working with computers (Autor 2014; Brynjolfsson and McAfee 2014; Frey 2015).

Autor (2014) argues that middle-skill jobs will persist because *jobs* typically require the execution of several *tasks* that are not easily unbundled without harming overall quality. Some of the tasks involved in a job may be complemented by computing power, and so are still done by humans, while others can be replaced by it and are thus done by computer, increasing human productivity.

### Quality

Two sets of evidence in the United States and Europe are pertinent. The first relates to job market polarization and the shift from stable manufacturing jobs, some being replaced by new jobs in the high-skill service sector, but more by low-skill service jobs. The latter are frequently part-time, with variable schedules, and rarely offering social benefits (as discussed above).

The second set of evidence pertains to the declining share of labour in total income. A fixed labour share of income has been such an empirical regularity that it became a fundamental feature of macroeconomic models at least 60 years ago. Yet Karabarbounis and Neiman (2013) present evidence on key developments that defy this feature. For example, labour's share in national incomes has declined globally since 1975, across developed and developing economies. Of 46 countries with significant trends in the share, over 80 per cent were negative, including most OECD countries and others such as China, India and Mexico.

Further, this decline is not limited to certain sectors and is not explained by movement of labour across sectors. Six of the eight tested sectors with significant trends had negative trends, and these "within-sector" effects

dominated "cross-sector" effects in explaining the declines. The authors link this decline to the sharp drop in the price of investment goods since 2000, "likely associated with the computer and information technology age," leading to substitution of information technology for labour. Finally, they link their results to rising inequality, concluding that the model implies "meaningful changes in the distribution of income when households have heterogeneous assets...or skills," (ibid).

### Levels

Whether changes in job composition and quality affect job levels depends on whether the (embodied capital) technologies are primarily complements or substitutes for labour.

A fundamental observation is that the ways in which technology can be complementary (having a neutral or even positive impact on employment) are more difficult to identify than those in which it can be a substitute. This is for the simple reason that one *sees* the jobs being lost but has to *imagine* the new jobs that could emerge (Autor and Dorn 2013). "Journalists and expert commentators overstate the extent of machine substitution for human labour and ignore the strong complementarities that increase productivity, raise earnings, and augment demand for skilled labour" (Autor 2014).

This reason helps explain the long history in the industrialized world of periodic false alarms over machine and computer displacement of labour. In each case, previously unimagined jobs have emerged and employment has continued to grow, though sometimes with a lag. In a similar vein, Feng and Graetz (2015) cite historical evidence of labour-market polarization – a "hollowing out" of the middle of the wage distribution similar to that seen today in the United States and Europe – in two previous periods of momentous technological change: the rise of the steam engine in the mid-nineteenth century, and the rise of electricity in the early twentieth century. In neither of these instances did overall employment decline in the long term.

Still, Beaudry et al. (2007) observe a sharp decline in the demand for skill in the United States labour market from 2000,

following many years of increase. The result is a progressive “de-skilling” of the workforce, with more educated workers taking lower-skill jobs. This pushes those job holders to lower levels of the skill ladder, who in turn displace the even less skilled holding those jobs. The authors link this declining demand for skill to the contemporaneous fall in United States labour-market participation. Their results call into question the ability of better education and technical training alone to ensure robust employment in the future. Together with evidence on the realized and likely future decline in demand for low-skill jobs, Beaudry et al.’s evidence also suggests continuing declines in overall employment.

So, there is no agreement on the basic question of whether twenty-first century technology will drive a long-term decline in employment. If it does, a wide range of policies – economic, social, educational and others – will need to be fundamentally re-engineered over the coming decades.

#### *Implications for developing countries*

Deindustrializing and modernizing trends are playing out most directly in developed economies and in the modern sectors of some developing countries such as China. The effects, however, are felt globally and in all countries through their impact on the patterns of global investment and global trade.

Developing countries with cheap labour may get less help from the “domino effect” of international firms seeking new sources of cheap labour,<sup>78</sup> meaning that the positive side of Africa’s youth bulge – plentiful, low-cost labour – may be less valuable over time.

These trends could also hit female employment particularly. More than one third of manufacturing employment in developing countries is female, and nearly one half in some Asian countries (Barrientos et al. 2004). Female employment is often heavier in export manufacturing, especially during its early phases. This pattern is driven in part by competitiveness in the world market and the push for flexible labour – part-time, temporary and casual – which historically characterizes female employment.

Manufacturing also shows a broad pattern of lower pay for women than men. Since much of this work is low-skilled and repetitive, it is also the type that is most likely to decline as automation spreads. Barrientos et al. (2004) cite many studies showing that female employment declines as automation proceeds and as the skill – and wages – of remaining workers rise. This is not necessarily due to inability to obtain the skill, but rather to employer preference for males in such positions, partly to avoid paying maternity and childcare benefits (Barrientos et al. 2004).

For developing countries that have suffered the most deindustrialization (many of them in Latin America), “re-shoring” is unlikely to bring many of these jobs back. Manufacturers in the United States (and now even China) who had previously placed some of their production offshore in search of low-cost labour are now repatriating at least some of it. Repatriation (re-shoring) stems from the falling importance of labour costs in total costs because of automation and the rising importance of other productivity factors, like network effects, in highly automated production. But countries that have heavily deindustrialized may find it too late to attract back these manufacturing jobs, especially if they have insufficiently developed “fundamental capabilities” (Rodrik 2015), such as human capital, technology, infrastructure and strong institutions.

Developing countries that modernize their domestic agrifood system find that the process threatens current and future rural employment by supplying products and services from efficient urban firms, competing with local, rural goods (Reardon et al. 2007). Increasingly, small, rural firms – those now in operation or those that could form in response to emerging demand – cannot “hide” from the challenges posed by more modern urban firms. Steadily integrating markets and falling transaction costs see to that, especially since less than 10 per cent of the rural population across all developing countries resides in remote areas further than several hours from cities (Barbier and Hochard 2014). Modern firms also have stricter requirements for quality, volume and delivery, creating entry barriers for

farmers and any firms wishing to provide first-stage processed raw material to urban-based food manufacturing and food service businesses (see the chapter by Reardon and Berdegúe).

These urban processors require cheap labour from rural areas in their initial labour-intensive phase. How much flows into informal self-employment or into wage employment depends largely on the importance of urban food manufacturing and preparation (restaurants and street vendors), which have a higher share of wage employment, relative to urban marketing, transport and other services, which tend more towards self-employment (Tschirley et al. 2015a).

Very rapid growth in market demand for perishable and processed foods in urban areas of developing Asia and Africa means that food manufacturing and preparation will probably account for 7-8 per cent of all new jobs over the next 15 years or so, and marketing, transport and other services for about 10 per cent – both among the fastest-growing employers (Reardon et al. 2015; Tschirley et al. 2015a, 2015b). Combined, the post-farm food system should account therefore for 15-20 per cent of all new jobs over the period. Farming should provide about one third, non-food sectors the rest.

Barrientos et al. (2004) cite work showing that women can have high shares of employment in the post-farm segments of high-value agrifood supply chains. Jaffee (2011) shows the same for export horticulture in Kenya. As demand for these products grows locally, this can be an opportunity for female employment.

### **Opportunities for rural livelihoods and jobs**

Rural people are not passive observers of employment trends. They respond and anticipate in order to mitigate risks and boost opportunities in a handful of strategies, some open primarily to the strong (workers with skills or the self-employed with capital assets), others potentially accessible by the weak and vulnerable (workers with low skills or the self-employed with little capital).

A leading candidate strategy, broad in volume and inclusive in coverage and accounting for perhaps 50-60 per cent of rural incomes, is

traditional agriculture itself, whether from own-farms or from farm wage labour (typically performed by the poorest in the community). However, its ability to absorb more labour faces difficulties (see the subsection on challenges below).

A second opportunity, also broad and inclusive, is RNFE from services and manufactures (Haggblade et al. 2007). RNFE provides 30-50 per cent of rural incomes across the developing world – more in some countries – and is much more important than farm wage labour and extra-local migration employment. RNFE is based either in fully rural areas or in rural households commuting to local rural towns (this constitutes half of RNFE in India, but less in Africa).

RNFE is expected to expand and change in composition (see the Introduction), especially in poorer areas and in the early stages when it is heavily based on production linkages with local farming. It is closely tied to development of off-farm components of the agrifood system (agricultural services, processing, distribution and logistics). These off-farm components are expanding very quickly, with start time, speed and depth correlated roughly with GDP per capita and urbanization (see the chapter on markets and value chains), in a shift mirrored on the demand side by rapid diet change that requires handling for perishable foods and processing.

Gradually, RNFE services and manufactures start to extend beyond local-farming production linkages (Haggblade et al. 2007; Reardon et al. 2001). The trends are from self-employment to wage employment, from manufactures to services and from hinterland to villages or rural towns and to near highways (Reardon et al. 2001 for Latin America; Bhalla 1998 for India; Haggblade et al. 2007 in general).

The distribution of RNFE in activities with low barriers to entry (meaning accessible to the weak) is denser in areas with better agriculture or nearer to cities (or both). These areas often show a U curve of reliance on RNFE, where the horizontal axis is household assets. The challenge is that in unfavourable areas, poorer households and women have a harder time accessing RNFE (Reardon et al. 2000; discussed

below). These unfavourable areas also show more externally oriented non-farm activity as they have fewer production- and consumption-linkage activities, implying geographical and asset-based poverty traps in RNFE.

Self-employment microenterprise, especially in manufactures, blossoms where it has economic space. Examples are most vigorously in high-potential rural zones and rural areas close to cities and peri-urban areas, and less so after privatization of parastatals (as in Zimbabwe; Rubey 1995) and in the initial phases of demand for processed foods (Snyder et al. 2015 for Dar es Salaam).

A third strategy for rural employment, but limited in volume and inclusivity, is a growth path of natural resource exploitation, such as energy, mines and forests. This is typical of countries in all regions with oil, with other mineral resources or with large, forested hinterlands, particularly in Africa.

A fourth, also limited in volume and inclusivity, is tied to tourism services around natural and cultural resources. They are major sources of service-sector jobs in some areas, and of job multipliers to local communities. This opportunity is not, however, broadly based because tourist places, by definition, are special and individual.

A fifth option, limited in volume and inclusivity except in the short term, is temporary migration by rural household members. This strategy is not directly inclusive because even in rural zones renowned for sending migrants, the share of households sending migrants is small.

### **Challenges facing marginalized groups**

An overarching challenge for the poorest groups in general and for women in particular is what Reardon et al. (2001) call the “meso” and the “micro” paradox. This key message underlies most of the challenges faced by marginalized groups seeking to follow any of the five employment options above.

The meso paradox is that the zones needing to diversify income the most have the lowest capacity to do so. These zones, such as hinterland areas and locations with poor agroclimates, tend to be impoverished

and exposed to high risk, and so are weak at generating investable surpluses and effective demand for goods and services beyond the most basic. These areas need new employment sources, but have a hard time investing in, maintaining or indeed locally demanding them. This paradox is at work across zones within countries, across countries within regions and across regions.

The micro paradox is the household analogue of the meso paradox. Rural households in favourable regions and hinterlands or in low-potential zones have a strong incentive to work off-farm to manage risk or alleviate poverty. But very often these households lack key assets and have poor access to credit and financial services, curtailing their ability to enter the labour market. This challenge can be exacerbated if an affected household is headed by a woman facing gender biases and a preponderance of unremunerated home chores. These households may not be income poor, but rather investment poor (Reardon and Vosti 1995), meaning that they do not have the needed assets – or a market to convert the assets they do have into assets of the needed form – such as labour sold to buy start-up equipment for a self-employment enterprise.

A logical extension of the two paradoxes is that the asset-rich are much better able to take advantage of many of the job opportunities listed above, in an “elite capture” reflecting the activities’ investment needs or entry barriers.

For example, to start a mine or a forest operation of a scale to be competitive, an entrepreneur needs to buy digging equipment and chain saws, and to hire crews. Employment in mining and forestry, therefore, tends to be concentrated, not broad, except where it is informal or artisanal. But even that requires investment and is controlled by intermediaries (see the chapter on land and natural resources). Rural women may face other challenges to get these jobs, given the need to live away from home in camps, and so forth.

Land is the obvious entry requirement for self-employment in agriculture – inherited, rented or bought. (Chapter 3 discusses the substantial and persistent land-market

constraints for youth.) Labour-intensive high-value products like fish or horticulture can be important additions to employment, but here too gender can blight opportunities. Targeted investments are required.

Although wage employment in agriculture is a key refuge activity of the poorest, worldwide, farm labourers are increasingly at risk from ever-cheaper automation, from farm machinery to mechanized packing houses to conveyor systems to load trucks. Many developing countries have mechanized in a spurt, as industrialization and urbanization take rural wages to the Lewis turning point in, for example, China (Zhang et al. 2011) and Bangladesh (Zhang et al. 2013). Africa is less mechanized, as expected by its lower income, but it may be poised to rise quickly on the back of a rise in medium-scale farming (Jayne et al. 2015).

Some of these challenges to agricultural wage employment are, however, offset by three positive trends. These are:

- The rise of livestock farming, horticulture and aquaculture, which are all very labour demanding per unit of land.
- The emergence of medium-sized and large farms that may require much hired labour (Neven et al. 2006 for mid-sized produce farms near Nairobi).
- Expansion of non-farm employment and agricultural intensification, tightening the labour market and pushing up wages for farm wage labour (Lanjouw and Murgai 2009).

But for each positive trend, inclusion issues persist, especially for women, who may have difficulties joining livestock, horticulture or aquaculture enterprises as owners rather than workers, or in accessing non-farm opportunities (ibid). And for both men and women, new emerging larger farms may initially hire much labour, but as with all large farms, may mechanize (Das Gupta et al. 2010 for potato farming in western Uttar Pradesh, India).

Wage RNFE can be easy for the rural poor to enter, especially where it is abundant (as in spin-off employment from agricultural development), and where it demands little

transport or few skills. But it, too, throws up challenges. For instance, as the employing entity moves further from the rural household, the rural poor need to commute to work. Bhalla (1998) reports shifts of non-farm manufacturing from villages to near highways in rural India. (Rural women might be especially constrained given home chores and cultural strictures.) Additionally, the skills demanded for RNFE wage work can increase over time as manufacturers and even service firms increase their capital-labour ratios to attain scale. Reardon et al. (2012), for rice-milling enterprises and Snyder et al. (2015), for maize-milling operations, show how equipment size grew, even in small and medium-sized enterprises (SMEs), an increase that may displace labour.

A potential migrant – domestically, let alone internationally – must often meet a whole gamut of requirements, including speaking the language of the city, having some marketable skill, having enough money to afford the transport and the (often illegal) intermediaries, having money to live on while looking for a job, having connections such as migration networks and being protected from the criminals that prey on migrants. These hurdles are even worse for women, who usually face job discrimination or are consigned to low-paying arduous jobs – the image of lines of women carrying rocks on their heads to building sites comes to mind. It is thus not surprising that migration is a relatively non-inclusive channel. Migrant employment is also fraught with risk, such as changing immigration policies, informal housing crackdowns, criminality and mechanization in the receiving area.

In summary, rural and urban self-employment can be a promising employment avenue for marginalized groups in rural areas, especially when SMEs are proliferating. But competitive forces can pressure SMEs to make investments, which become entry barriers for those with no capital or few skills (see the chapter on food-system transformation).

## Responses to protect the vulnerable and improve rural employment

How can policies and programmes foster inclusive rural employment in the midst of the above technological trends? The same forces are at work throughout the world, but are likely to play out differently across countries – for which reason it is important to classify countries by type, offering a framework for responses.

### A country classification scheme for analysing employment prospects

The four-group scheme has:

- *Lagging industrializers.*<sup>79</sup> Low-income countries that have attracted limited international investment in manufacturing, have very low manufacturing employment, and no evidence of rising shares of manufacturing in their economies.
- *Nascent industrializers.* Low-income countries otherwise similar to lagging industrializers, but with indications of the rising importance of manufacturing.
- *Successful industrializers.* Countries that have climbed the manufacturing ladder (though to a lower rung than fully industrialized countries) through a combination of policies and investments that have driven competitive advantage in world markets. In part for that reason, these countries have been able to invest in the fundamental capabilities needed to compete in the more automated manufacturing environment.
- *Premature deindustrializers.* Countries that have seen deindustrialization as a consequence of the exposure of uncompetitive local industries to global trade, resulting in a sharp increase in the share of informal and self-employment in total employment.

To implement this classification, we used data from a sample of 38 countries drawn from across the globe on real per capita manufacturing GDP in 2011 and the change in the share of manufacturing in their GDP over 20 years up to 2011. The categories were defined as follows:

- *Lagging industrializers.* Countries with per capita manufacturing GDP below the median

of countries in the IFAD data set (US\$773), and a falling share of manufacturing in GDP in the period. Countries in this group have a mean per capita manufacturing GDP of just US\$170 and the manufacturing share of GDP fell by an average of 9 percentage points. This category is dominated by Africa.

- *Nascent industrializers.* Countries with per capita manufacturing GDP below the median, but a rising share of manufacturing in GDP. These countries have a per capita manufacturing GDP of US\$215 and the manufacturing share of GDP rose by an average of more than 2 percentage points. Africa holds six of the nine countries in this group. Cambodia is the outstanding member, with Bangladesh and Uganda also seeing substantial growth in manufacturing share.<sup>80</sup>
- *Successful industrializers.* Countries with per capita manufacturing GDP above the median and a rising share of manufacturing in GDP. Countries here have a per capita manufacturing GDP of US\$1,750 and the manufacturing share of GDP rose on average by more than 3 percentage points. Asia holds three of the five spots in this group, Cuba and Nicaragua occupying the other two. Thailand is the outstanding entry, with the second highest (after Cambodia) growth in manufacturing share and the second-highest per capita manufacturing GDP.<sup>81</sup>
- *Premature deindustrializers.* Countries with above median per capita manufacturing GDP and a falling share of manufacturing in GDP. Countries in this group have a per capita manufacturing GDP of US\$2,018, and the manufacturing share of GDP fell on average by nearly 5 percentage points. Malaysia, China, Tunisia, Egypt and India move into the successful industrializer group under the approach of percentage change in real per capita manufacturing GDP. Latin America accounts for five members of this group, including four of the five that fall most firmly within the group – Colombia, Chile, Brazil, Dominican Republic and South Africa.

Table 5.1 and figure 5.4 summarize the results by category, for the classification variables and other related variables.<sup>82</sup> Surprisingly, China, India and Malaysia emerge as premature deindustrializers rather than successful industrializers. These are countries with fast-growing economies whose manufacturing share in GDP may have fallen only slightly. We therefore tested an approach in which the change in manufacturing GDP share is replaced with percentage growth in real manufacturing value added over the past 20 years.<sup>83</sup> The eight countries (out of 38) that change category using the second approach are all within the blue box in figure 5.4. All premature industrializers within this box become successful industrializers under the second approach, while all failed industrializers become nascent industrializers.

#### Prospects and policy approaches by country type

The vast technological changes of the past 50 years have fundamentally changed the transformation pathways open to developing countries. And as employment is central to structural and rural transformation, this implies fundamental changes to the employment paths that countries can follow.

#### Cross-cutting

A common theme across nearly all countries (with the possible exception of successful industrializers), is the high and rising level of informality in employment, which is likely to be a long-term feature of most developing economies. Policies need to work with this informal sector, not against it, to improve its productivity and extend social protection not only to workers in the informal sector, but also to the growing number of informal workers used by firms in the formal sector.

Inclusive agricultural and rural development strategies need to put employment objectives on a par with growth objectives, which is particularly important for lagging and nascent industrializers that still have high shares of labour in agriculture. (Other chapters discuss options to do so.)

Most countries will find it hard to escape the pressures of reducing employment and making it less inclusive. Social protection will have to play a larger role. Growing experience with social protection, especially in Latin America, provides lessons for design across the developing world. Unlike in the past – and because informality is rising across the world – these protections will have to be de-linked from employment,

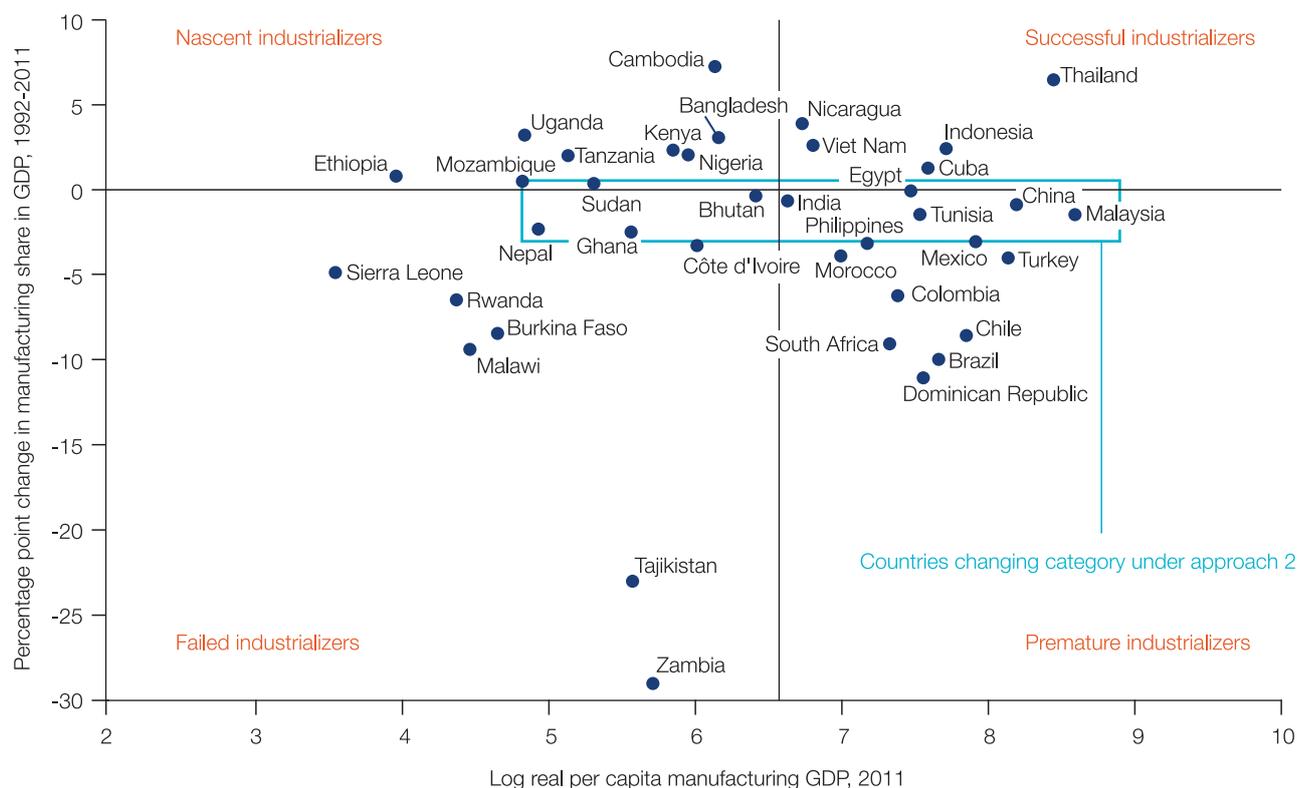
TABLE 5.1 Summary data on a classification scheme for assessing employment prospects, 2011

	Per capita FDI (US\$)	Industrial employment (%)	Per capita GDP (US\$, real)	Real manufacturing GDP per capita, US\$	Manufacturing share in GDP (%)	Percentage point change in manufacturing share in GDP, 1992-2011
Lagging industrializers	41	10.4	2 780	5.14	8	-9.0
Nascent industrializers	60	9.0	2 515	5.37	11	2.4
Successful industrializers	104	19.5	10 324	7.47	21	3.3
Premature deindustrializers	261	23.9	12 958	7.61	18	-4.6

Note: Simple country means are used; classification variables are in the three columns on the right.

Source: Authors' elaboration of IFAD data compiled for the RDR 2016 from the World Bank and other sources.

FIGURE 5.4 Classification scheme for employment analysis



Notes: Horizontal axis: Per capita manufacturing GDP; Vertical axis: Growth of manufacturing measured either by the percentage point change in manufacturing share of GDP, 1992-2011 or percentage change in real per capita manufacturing GDP, 1992-2011.  
Source: Authors' elaboration of IFAD data compiled for the RDR 2016 from the World Bank and other sources.

and based instead on broad provision of basic coverage for all citizens, or targeted groups of citizens, regardless of employment status, but the challenges will vary markedly across the four types of country.

A key challenge for inclusive employment policy will be raising the fiscal revenue needed to fund the investment in human capital, technology, infrastructure, social protection and strong institutions that could ensure stronger growth and greater inclusiveness. However, with growing informality, it will be difficult to broaden the tax base. Premature industrializers – many of them in Latin America – are seeing sharp rises in informality, while informality is already high among lagging and nascent industrializers. Formal services depend for their growth largely on formal manufacturing. A decline in the former makes it harder to expand the latter.<sup>84</sup>

The next major challenge is the political one of convincing the (relatively few) owners of the formalized means of production to tax themselves enough to fund the investments (including social protection programmes) needed to remain competitive on world markets. Countries with higher incomes, better fundamentals and that have already climbed the manufacturing ladder (successful industrializers and some of the premature deindustrializers, such as China, Malaysia and perhaps others such as Brazil) will be in a position to meet these challenges better than many of the lagging and nascent industrializers in Africa and parts of Asia.<sup>85</sup>

The outstanding development success stories of the past several decades come primarily from Asia – first Japan and Taiwan, followed by the Republic of Korea, then China and others such as Thailand. To varying degrees, all

these economies have followed a strategy of the “developmental state” – industrial policy featuring strategic collaboration between the government and private sector to channel investment into high-potential sectors while creating the conditions for success through heavy investment in infrastructure and human capacity. More recently, Latin America has observed its sharp decline and limited recovery from the financial crisis of 2008 and has tried to learn from Asia’s success and from its own mistakes during its period of “infant industry” protection. The emerging strategies, such as “productive development policies” (Crespi et al. 2015), bear a strong resemblance to the practices of Asia’s developmental states.

The literature emerging in Latin America emphasizes the need for strong institutions if the developmental state approach, or Latin America’s “productive development policies,” are to be successful. Yet most African countries have wide institutional capacity gaps. Still, the flood of investment into the continent from Chinese firms suggests a chance to “piggyback” on it, which has been important in building large transport and energy infrastructure. African leaders wanted this infrastructure, but could not finance it in other ways, and it could now boost broader development by reducing the cost of doing business.<sup>86</sup> Chinese investment has also created nearly 10 special economic zones across the continent, most of them focused on manufacturing (Brautigam and Xiaoyang 2011). The debate over the desirability and design of new “innovation policies” and productive development policies is a major part of the discussions on development policy, and feeds into any analysis of employment prospects and the role of agricultural and rural development.

#### *Lagging and nascent industrializers*

These countries face exceptional challenges, especially the small, landlocked ones, all of which are lagging industrializers and account for five of the eight “core” members of that category – Burkina Faso, Malawi, Rwanda, Tajikistan and Zambia. These countries are all still agrarian economies and the bedrock

of their response has to be focused on the agricultural and rural non-farm sectors. This requires huge public investment in the basic capabilities of the rural population – health, education and nutrition. Equally important is to build agricultural capacities and corresponding institutions for market and value chains, rural finance and natural resource management, as well as technology.

A major risk for all these lagging and nascent industrializers – doubly so for the small, landlocked countries – is that de-industrializing and modernizing trends, alongside governments’ minimal capacity to invest in their countries’ fundamental capabilities, will choke off manufacturing growth, or cause it to peak at a lower income and number of manufacturing jobs than even the levels now seen elsewhere in the developing world.

Some optimism can be based on the rapid growth, driven by foreign direct investment (FDI), in the production of apparel, leather goods and other manufactured goods for domestic and export in Ethiopia (allAfrica 2015; *Daily Maverick* 2013) and some other large foreign investments in Nigeria, Kenya and Madagascar (*Economist* 2014) and Uganda (Byiers et al. 2015). These investments show that, though countries will in all likelihood peak at far fewer manufacturing jobs than in the past, this does not preclude them from now achieving growth in these job areas for some time, even if this progress can only be viewed as fragile. For example, Cambodia appears an outstanding success, having taken its roughly 9 per cent manufacturing share in GDP in 1993 to over 16 per cent by 2012 – but this share has *fallen* since peaking at nearly 20 per cent in 2004. Uganda, another potential ground for optimism, has also seen its manufacturing share fall slightly since the late 1990s.

Countries with natural resource wealth (most of them in Africa)<sup>87</sup> could generate the fiscal revenue for investments and social protection through taxes on widespread formal activity, but will have to overcome the elite capture and institutional failures that often accompany resource booms. Botswana is a fine exception in Africa, yet the conditions that have driven its

success – exceptionally high per capita earnings and a unique political culture – exist nowhere else on the continent.

China's infrastructural investments are potentially transformative if managed well and maintained, but weak public-sector capacity increases the chances of inadequate local learning and participation. A key question is what level of fiscal revenue these investments generate and whether such receipts will be used to build local capacity for direct and indirect (local service provision) participation.

Because the economies of lagging and nascent industrializers are small, regional trade and economic cooperation should boost their chances for sustained growth. Low GDP and small urban populations mean that growth in domestic-market demand can take off when economic policy falls right, through a combination of rapid urbanization (greater dependence on markets) and fast per capita income growth. Given these economies' structures, much of this demand growth will be linked to agriculture and broader agrifood systems, including mid- and downstream elements (see the chapter on markets and value chains).

This mix of rapid urbanization and food-system transformation over the past 15 years has spurred food- and broader market-demand growth near 10 per cent a year in some African countries. Some Asian countries have seen even faster growth. If buttressed by closer regional trade integration and broader regional economic cooperation to ensure larger and more stable markets, by investment that increases agricultural productivity, and by other investments and policies that foster a vigorous local response to local and regional demand for manufactures, such growth could fuel transformation for some time. One attractive aspect of domestic and regional markets is that they are based on consumers with rising, but still low, incomes who may be satisfied for some time with the quality that local producers can offer (see the regional chapter on SSA).

The question for this scenario of high domestic demand growth is: Where will the purchasing power come from? While

recent growth in Africa appears to be real (not a statistical artefact) and research shows associated sharp upturns in the contribution of structural change to growth over the past decade (McMillan and Harttgen 2014; Fox et al. 2013), it is still not clear what is driving it. Thus we cannot answer the question.

This scenario also has a built-in limit. If incomes continue to rise, increasing numbers of middle-class consumers will begin to demand the quality produced only with modern manufacturing techniques. Where will the needed investment funds and the ability to channel them into high pay-off sectors come from? These countries are the least capable of developing and applying solid industrial policies, which require a sophisticated public sector and a long-term commitment to pragmatic, iterative learning with the private sector about what works (Crespi et al. 2015). Yet, these countries will need to pursue such policies if they are to stay on a sustainable growth path over decades, pointing to high-potential returns to sustained investment in human and institutional capacity strengthening.

RNFE is a more important source of income in these lagging and nascent industrializers than in other countries. Infrastructural investment, tighter regional economic integration, and stronger human and institutional capacity will all help RNFE to expand. Two more direct approaches include micro- and small-scale credit, and business development services. Both can have positive effects, but programmes need to control costs, as cost per beneficiary can be steep. And, as per the meso and micro paradoxes, it is hardest for these programmes to reach the firms, farmers, herders and artisans who most need it. Consequently, benefits are typically concentrated among the top-tier of poor people (not the poorest) or those already above the poverty line (Haggblade et al. 2007).

#### *Successful industrializers*

All countries in this group have built their success on productivity growth in agriculture, and demand from growing urban populations has contributed to their agricultural growth. Most of them have well-designed agricultural

and rural development strategies, focused on small-scale farmers and inclusiveness. Their emphasis on agricultural development has been longstanding and they have no intention of cutting it. (Policies and programmes are explored more deeply in chapter 2).

The strong challenge for these economies – and for countries such as China and Malaysia with high growth and high manufacturing shares in GDP that have slipped slightly – is that they will have to invest heavily in automation to maintain their value-added share in manufacturing, thus driving continued employment deindustrialization. This outcome appears unavoidable, with the process well underway in Western industrialized nations and already starting in China, where for example the country's largest manufacturer of computer parts plans to go to *fully* automated production over the next few years.

Maintaining value-added shares in manufacturing would mean that these countries could generate the fiscal revenues needed to fund continued investment in the fundamental capabilities of their populations (and in social programmes for those left behind) – if they solve their political problems on tax revenue.

These countries are likely to avoid value-added deindustrialization, but will continue to confront employment deindustrialization. The effects could be partially offset by the entrance of labour into the formal service sector (as in all Western industrialized countries). A key challenge for them will be to continue evolving their developmental state approaches to manage the inevitable transition into more service employment. Yet this is no “magic bullet” as these jobs are also increasingly subject to automation. Their real difficulty is in “looking around the corner” and imagining the new jobs that might emerge, and if they will be based on complementarities between humans and computers.

#### *Premature deindustrializers*

Most of these countries are well advanced in the structural transformation, with small shares of agriculture in employment and GDP. However, agriculture can still contribute to rural poverty

reduction and welfare, via the right development strategies (World Bank 2008). Countries now most firmly in the grip of premature deindustrialization – mainly in Latin America plus South Africa – earlier industrialized behind protective infant industry policies. They are now deindustrializing for two reasons; they find it hard to compete in global trade, and, relatedly, are investing less in their fundamental capabilities<sup>88</sup> than in the most successful Asian countries. (Chapter 1 analyses these factors further.)

It is not clear how much these countries can re-shore, as that affects industries that are highly capital and skill intensive, and as China and others are investing heavily in cutting-edge automation. Mexico could become an exception, and bears close observation as it attempts to bring manufacturing back.

The size of some of the domestic markets in Latin America – and, if politics permit, the even larger sizes of emerging continental trade zones – provides a potential cushion similar to that for lagging and nascent industrializers in Africa and Asia. These large domestic and regional markets mean that the more advanced countries of the region may be able to generate the fiscal resources needed to ramp up investment in fundamental capabilities. What they cannot expect is a sustained rebound in manufacturing employment – slowing the decline while raising the labour productivity of those they do employ is the best they can aspire to.

Latin America is a leader in the developing world in designing social protection that builds human capital (see chapters 1 and 10). Ensuring that social protection becomes part and parcel of investment in human capabilities will be a key feature of inclusive transformation in that region.

#### **Possible future implications of labour-substituting technology**

This chapter has implicitly assumed that the technology driving employment deindustrialization, though profoundly affecting the composition and quality of employment, will be similar to past technology in acting broadly, though perhaps with lags, as a

complement and not a substitute for labour. If this proves untrue, and if the employment polarization to date becomes a broad decline in employment (except in high-skill areas), a more profound rethinking of economic and social policy will be required.

In industrialized countries, the most commonly discussed policy response to such a world is some kind of guaranteed income scheme. Given the persistent operation of the meso paradox, one could imagine the need for something like this approach. The political challenges of moving in such a direction would be, to say the least, formidable, and the policy options have only begun to be thought about. Venturing there is well beyond what can be done in this report.

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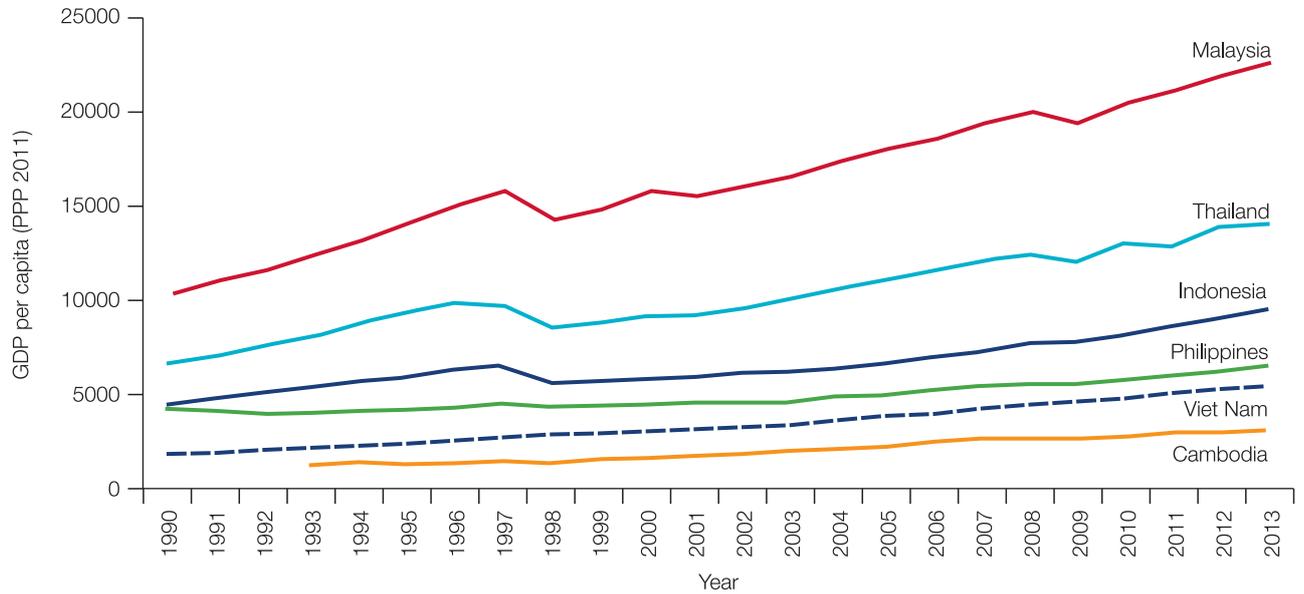
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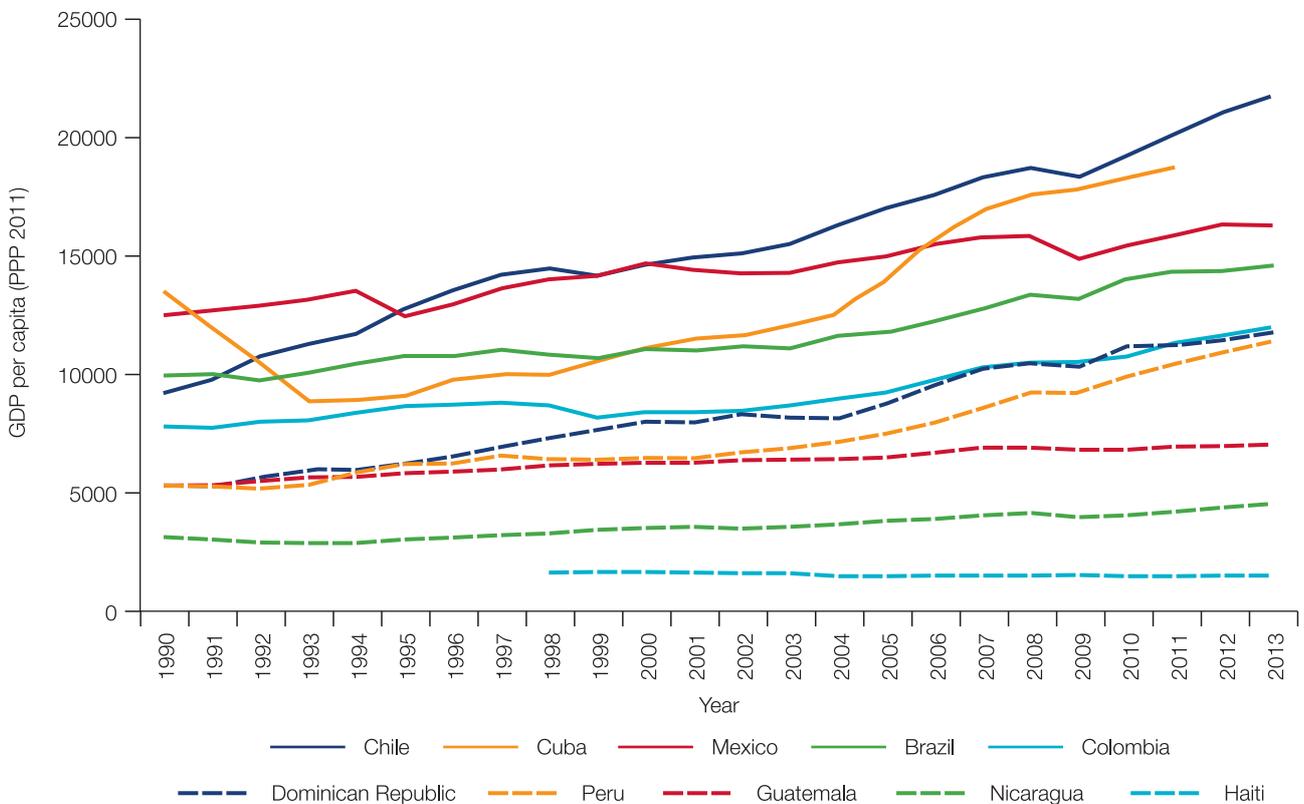
# Annex 5A

FIGURE 5A.1 Lagging South-East Asia and rest of South-East Asia



Note: Lagging countries are Cambodia, Viet Nam and the Philippines.  
 Source: Authors' elaboration of IFAD data compiled for the RDR 2016 from the World Bank and other sources.

FIGURE 5A.2 Lagging Latin America and the Caribbean and rest of Latin America and the Caribbean



Note: Lagging countries are Haiti, Nicaragua and Guatemala.  
 Source: Authors' elaboration of IFAD data compiled for the RDR 2016 from the World Bank and other sources.

TABLE 5A.1 Country indicators by classification scheme

	2011 data		
	Per capita FDI (US\$)	Indust. emp. (%)	Per capita GDP (real US\$)
<b>Summary</b>			
Failed industrializers	41	10.4	2 780
Nascent industrializers	60	9.0	2 515
Successful industrializers	104	19.5	10 324
Premature deindustrializers	261	23.9	12 958
<b>Failed industrializers</b>			
Zambia	125	7.1	3 800
Tajikistan	13	17.9	2 432
Malawi	7		755
Burkina Faso	22		1 582
Rwanda	9	3.8	1 426
Sierra Leone	24	6.5	1 495
Côte d'Ivoire	18		3 107
Ghana	125	15.4	3 864
Nepal	3	13.4	2 173
Bhutan	66	8.6	7 167
<b>Mean</b>	<b>41</b>	<b>10.4</b>	<b>2 780</b>
<b>Nascent industrializers</b>			
Sudan	57		3 265
Mozambique	259	3.4	1 070
Ethiopia	10	6.6	1 336
Tanzania	38	4.3	1 668
Nigeria	32	11.5	5 423
Kenya	12	6.7	2 705
Bangladesh	10	14.5	2 853
Uganda	32	6.0	1 368
Cambodia	89	18.6	2 944
<b>Mean</b>	<b>60</b>	<b>9.0</b>	<b>2 515</b>
<b>Successful industrializers</b>			
Cuba	0	17.1	18 814
Indonesia	93	21.7	9 254
Viet Nam	99	21.1	5 125
Nicaragua	139	16.5	4 494
Thailand	189	20.9	13 932
<b>Mean</b>	<b>104</b>	<b>19.5</b>	<b>10 324</b>
<b>Premature deindustrializers</b>			
Dominican Republic	154	17.8	11 795
Brazil	403	21.9	14 555
South Africa	153	24.3	12 106
Chile	1150	23.4	21 714
Colombia	335	20.9	12 025
Turkey	172	26.0	18 660
Morocco	102	21.4	7 087
Mexico	320	24.1	16 291
Philippines	37	15.4	6 326
Malaysia	390	28.4	22 589
Tunisia	97	33.5	10 768
China	256	29.5	11 525
India	22	24.7	5 238
Egypt	68	23.5	10 733
<b>Mean</b>	<b>261</b>	<b>23.9</b>	<b>12 958</b>

Source: Authors' elaboration of IFAD data compiled for the RDR 2016 from the World Bank and other sources.

2011 data			
In real Mfg. GDP per capita	Mfg share in GDP (%)	Percentage point change in mfg share in GDP (1992-2011)	Notes
5.14	8.1	-9.0	
5.37	10.5	2.4	
7.47	21.2	3.3	
7.61	17.6	-4.6	
5.73	8.1	-29.05	Ind emp = 2005
5.59	11.0	-23.04	Ind emp = 2004
4.49	11.8	-9.33	
4.67	6.7	-8.43	
4.40	5.7	-6.42	Ind emp = 2005
3.56	2.4	-4.85	Ind emp = 2004
6.03	13.3	-3.26	
5.58	6.9	-2.49	Ind emp = 2010
4.94	6.5	-2.38	Ind emp = 2001
6.43	8.7	-0.33	
5.14	8.1	-8.96	
5.33	6.3	0.37	
4.84	11.8	0.45	Ind emp = 2003
3.98	4.0	0.77	Ind emp = 2005
5.14	10.2	2.03	Ind emp = 2006
5.97	7.2	2.12	Ind emp = 2004
5.87	13.1	2.28	Ind emp = 2005
6.18	16.9	2.95	Ind emp = 2005
4.85	9.4	3.18	Ind emp = 2009
6.16	16.1	7.23	change in mfg share is 1993-2012
5.37	10.5	2.37	
7.61	10.7	1.29	change in mfg share is 1994-2013
7.72	24.3	2.38	
6.83	18.0	2.63	
6.74	18.8	3.90	Ind emp = 2010
8.46	34.0	6.48	
7.47	21.2	3.34	
7.57	16.4	-11.04	
7.66	14.6	-10.06	
7.35	12.8	-9.05	
7.86	11.9	-8.55	
7.39	13.5	-6.24	
8.14	18.5	-4.01	
7.01	15.7	-3.84	
7.93	17.1	-3.20	
7.20	21.1	-3.09	
8.61	24.3	-1.52	
7.55	17.6	-1.48	
8.21	31.8	-0.90	
6.65	14.7	-0.63	
7.48	16.5	-0.08	
7.61	17.6	-4.55	

TABLE 5A.2 Country indicators for “core” countries by classification scheme

	2011 data		
	Per capita FDI (US\$)	Indust. emp. (%)	Per capita GDP (real US\$)
<b>Summary</b>			
Failed industrializers	28	9.7	2 096
Nascent industrializers	60	9.0	2 421
Successful industrializers	104	19.5	10 324
Premature deindustrializers	314	21.7	13 396
<b>Failed industrializers</b>			
Burkina Faso	22		1 582
Côte d'Ivoire	18		3 107
Malawi	7		755
Nepal	3	13.4	2 173
Rwanda	9	3.8	1 426
Sierra Leone	24	6.5	1 495
Tajikistan	13	17.9	2 432
Zambia	125	7.1	3 800
<b>Mean</b>	<b>28</b>	<b>10</b>	<b>2 096</b>
<b>Nascent industrializers</b>			
Bangladesh	10	14.5	2 853
Cambodia	89	18.6	2 944
Ethiopia	10	6.6	1 336
Kenya	12	6.7	2 705
Mozambique	259	3.4	1 070
Nigeria	32	11.5	5 423
Tanzania	38	4.3	1 668
Uganda	32	6.0	1 368
<b>Mean</b>	<b>60</b>	<b>9</b>	<b>2 421</b>
<b>Successful industrializers</b>			
Cuba		17.1	18 814
Indonesia	93.20	21.7	9 254
Viet Nam	99.21	21.1	5 125
Nicaragua	138.99	16.5	4 494
Thailand	188.77	20.9	13 932
<b>Mean</b>	<b>104</b>	<b>19</b>	<b>10 324</b>
<b>Premature deindustrializers</b>			
Dominican Republic	154	17.8	11 795
Brazil	403	21.9	14 555
South Africa	153	24.3	12 106
Chile	1 150	23.4	21 714
Colombia	335	20.9	12 025
Turkey	172	26.0	18 660
Morocco	102	21.4	7 087
Mexico	320	24.1	16 291
Philippines	37	15.4	6 326
<b>Mean</b>	<b>314</b>	<b>22</b>	<b>13 396</b>

Source: Authors' elaboration of IFAD data compiled for the RDR 2016 from the World Bank and other sources.

2011 data			
In real Mfg. GDP per capita	Mfg share in GDP (%)	Percentage point change in mfg share in GDP (1992-2011)	Notes
4.93	8.0	-10.8	
5.37	10.4	2.6	
7.47	21.1	3.3	
7.57	15.7	-6.6	
4.67	6.7	-8.43	
6.03	13.3	-3.26	
4.49	11.8	-9.33	
4.94	6.5	-2.38	Ind emp = 2010
4.40	5.7	-6.42	Ind emp = 2005
3.56	2.4	-4.85	Ind emp = 2004
5.59	11.0	-23.04	Ind emp = 2004
5.73	8.1	-29.04	Ind emp = 2005
4.93	8.0	-10.85	
6.18	16.9	2.95	Ind emp = 2005
6.16	16.1	7.23	change in mfg share is 1993-2012
3.98	4.0	0.77	Ind emp = 2005
5.87	13.1	2.28	Ind emp = 2005
4.84	11.8	0.45	Ind emp = 2003
5.97	7.2	2.12	Ind emp = 2004
5.14	10.2	2.03	Ind emp = 2006
4.85	9.4	3.18	Ind emp = 2009
5.37	10.4	2.63	
7.61	10.7	1.29	
7.72	24.3	2.38	change in mfg share is 1994-2013
6.83	18.8	2.63	
6.74	34.0	3.90	
8.46	18.0	6.48	
7.47	21.1	3.34	
7.57	16.4	-11.04	
7.66	14.6	-10.06	
7.35	12.8	-9.05	
7.86	11.9	-8.55	
7.39	13.5	-6.24	
8.14	18.5	-4.01	
7.01	15.7	-3.84	
7.93	17.1	-3.20	
7.20	21.1	-3.09	
7.57	15.7	-6.57	

## Spotlight 5: Gender equality and women's empowerment

Women are key actors in rural areas and engage in farm and non-farm economic activities to ensure their families' food and economic security. They contribute to agricultural and rural economies with their labour and knowledge of crop and livestock varieties, biodiversity and agricultural practices.

Globally, they represent 43 per cent of the agricultural workforce (FAO 2011) and in regions such as Oceania, Southern Asia and SSA, around 60 per cent of employed women work in the agriculture sector (UNSD 2015). As rural areas transform, opportunities emerge for rural women (and men) to engage in new and diversified income-generating activities and to improve their livelihoods.

But rural and structural transformations also present challenges for rural women, and the opportunities and capacities to benefit from these processes often differ widely between women and men, and between young and old. These differences underline the need for policies and investments to ensure that rural transformation is inclusive and sustainable and that growth reaches poor women and men alike.

### Opportunities for rural women under rural transformation

Rural transformation can bring about potential benefits for rural women and generate new opportunities in the rural farm and non-farm sectors. Across the world, urbanization has been accompanied by stronger linkages between rural and urban areas, with more intense flows of people, money and goods between these sectors. Also, there are growing demands for agricultural goods and services, resulting in diversity in economic activities and the use of modern technologies and innovations in production processes.

These changes have increased livelihood options for rural women. Efficient and sustainable infrastructure and services (including water, energy and transport) are particularly

beneficial for women, especially for reducing workloads, improving health conditions and making travelling easier and safer.

Increased access to knowledge and education, technology, finance, and information and communications technology provides opportunities to raise rural incomes and take advantage of employment opportunities in the rural non-farm sector. Access to food value chains and markets offers commercial opportunities, while inclusive policy processes can empower rural women to take part in the decision-making that affects their lives.

### Challenges and constraints

Structural and rural transformations also present challenges for rural women. Economic, social and political constraints often hamper rural women's ability to access more dynamic markets or develop lucrative businesses, preventing them from improving their livelihoods and from contributing to national economic growth. Existing statutory and customary laws in developing countries often restrict women's access to assets and as many as 30 per cent of women are excluded from economic decision-making within their own households.

Women have less access to formal financial services and, globally, only 47 per cent of women have an individual or joint account at a formal financial institution compared to 55 per cent of men (UNSD 2015).

Structural and rural transformations vary by region and pose distinct challenges for rural women. Gender disparities, which are often deeply embedded within social and cultural norms, also vary geographically. Nevertheless, some challenges are common:

- Increased rural-urban migration may present challenges for women who stay behind and face barriers to accessing the inputs needed to manage farms and businesses. Limited access to and control over a broad range of productive assets – from agricultural land,

technology and inputs, to knowledge and financial resources – hamper rural women's ability to be productive and support their families (World Bank and One Campaign 2014).<sup>89</sup> Evidence from six countries in Africa suggests that the gaps in agricultural productivity between women and men with similar-sized plots in a similar context range from 23 per cent to 66 per cent. In addition, many women have less access to labour, especially male labour, as cultural constraints may prevent women from hiring non-family labour (UN Women et al. 2015).<sup>90</sup> Even if they get male labour, evidence suggests that men tend to work less hard for a female employer (ibid.).

- Rural women also migrate and in some countries represent the majority of migrants. While migration may offer increased access to paid employment and to services, many women are often disadvantaged in access to decent employment, training, financial and physical assets, mobility and personal security and safety (IOM 2012).
- The changing role of agriculture under structural and rural transformations highlights the issue of rural women's access to land. In many countries, women face specific barriers in terms of land ownership and in nearly one third of developing countries, laws do not guarantee the same inheritance rights for women and men (UNSD 2015). Women represent fewer than 5 per cent of all agricultural holders in the countries in North Africa and West Asia for which data are available. The SSA average of 15 per cent masks wide variations, from fewer than 5 per cent in Mali to over 30 per cent in countries such as Botswana and Malawi (FAO 2011). Even when statutory laws ensure women's land rights, these rights are often not recognized by customary practices.
- As the rural economy diversifies, the rural non-farm sector becomes increasingly important and offers new employment opportunities. However, activities in this sector may require specialized skills that many rural women lack because of low

levels of education and training. Activities may also require mobility that is incompatible with a woman's household responsibilities. Hence, the growing wage employment in the rural non-farm sector tends to favour men, while women are more likely to engage in farming and as agricultural labourers. According to recent data from rural areas in SSA, just 43 per cent of married women aged 15 to 49 years and 68 per cent of men had any cash labour income in the past 12 months (UNSD 2015).

- The double burden of productive activities and domestic work continues to limit rural women's ability to participate in new income-generating opportunities. Rural women spend much of their time on domestic chores including collecting water and firewood, preparing and cooking food, transporting goods and caregiving. This is compounded by a disproportionate burden of unpaid agricultural work as many women are expected to work on family farms. As a consequence, in some regions, rural women typically work 12 hours a week more than men do (Blackden and Wodon 2006) and in developing countries, women spend, on average, three hours more per day than men on unpaid work (UNSD 2015). With more family members migrating, rural women, in particular young women, face additional workloads that limit the time they can spend on productive activities or education and training.

### **Actions to promote women's empowerment**

Over the past two decades, the issue of rural women's empowerment has grown in prominence on the international development agenda. Organizations, such as IFAD, and civil society organizations have strongly advocated for a focus on rural women in the 2030 Agenda for Sustainable Development, and the newly adopted Global Goals and their targets.<sup>91</sup> The 20th anniversary of the 1995 Beijing Declaration and Platform for Action also provided an occasion to renew commitment and political will towards gender equality and to ensure that

the interests of rural women are included on the global agenda.

Enabling transformation of rural areas in a manner that is both inclusive and sustainable requires an analysis and understanding of issues to address gender inequalities. Some entry points are:

- Access to and control over productive resources and assets is essential for rural women to participate in and benefit from economic activities and to diversify their income base. This is especially so as many rural men migrate and women are left to manage the farms or family businesses. Rural women also need access to extension services, training and business development to be able to take advantage of emerging markets and enter into business partnerships.
- Access to decent employment opportunities is crucial for reducing poverty, particularly for rural women and youth who make up a growing proportion of the rural labour force in many developing countries. However, the challenge is that the majority of rural jobs are in the informal sector (box S5.1).
- Developing the skills and knowledge of rural women and girls – through training in literacy and numeracy, or vocational, technical and managerial training – enables them to participate more in development interventions and business opportunities. As the rural non-farm sector becomes more specialized, many women will be unable to benefit from employment opportunities unless they acquire new skills. Hence, education and skills development enhance capacities and equip rural women, particularly young women, for success in both agricultural and non-agricultural employment.
- Fostering women's participation and leadership in rural organizations and community groups and supporting women's groups are required to strengthen their voice and influence. Rural women need more control over the decisions that affect their lives, including in public affairs, in user groups, such as farmers' organizations (FAO and IFAD 2015) and at community and household levels. Empowering women at the household level is also important for their overall well-being and that of their families (box S5.2) (World Bank 2012).<sup>92</sup>
- Investing in rural infrastructure and labour-saving technologies is essential to lessen the burden of water and firewood collection and to allow access to markets with products. Labour-saving technologies are also needed to enable women to increase their productivity, reduce drudgery and have a manageable workload so they can participate in economic activities, decision-making processes and development opportunities.

#### BOX S5.1 Supporting decent employment for rural women in Bangladesh

In Bangladesh, the IFAD-supported Sunamganj Community-Based Resource Management Project has formed labour-contracting societies (LCS) for infrastructure development, creating a rare opportunity for women to earn cash income. LCS members receive training and are then contracted to conduct part of the project's construction work.

Women account for 40 per cent of LCS members and report that LCS is an important chance for them to improve their economic and social situation. Women's wages, hours of work and benefits are equal to those of their male colleagues. Many invest their earnings in income-generating activities. Some women also make road blocks, which they can do near their homes with flexible timing, thus allowing them to continue with homestead gardening, looking after their children, etc. The roads have made travelling easier, more affordable, and safer, enabling women to travel to nearby cities and markets to buy goods and to visit hospitals/doctors or relatives. Road maintenance has generated regular employment for the poorest and most disadvantaged women.

Source: IFAD 2013: Report on IFAD's Development Effectiveness.

**BOX S5.2 Supporting women's self-help groups in India**

Self-help groups are an effective way to strengthen the decision-making and economic power of women in South Asia's patriarchal societies. The self-help groups are organized around a common purpose, such as savings and loans or economic activities. Most of these groups are women only and usually have strong social agendas, like supporting disabled people or people with HIV/AIDS, or addressing domestic violence, alcoholism and caste-related issues.

The groups serve as forums for women to learn new skills and gain confidence. They enhance members' social status, support joint action and are a safe place to discuss and solve problems. Women hold and control the group's working capital and profits, and can keep them safe from appropriation by husbands or male relatives. In some cases, women can negotiate for their wider interests, such as having a greater say in family decisions, banning alcohol consumption in their village and developing insurance products that meet their needs. The informal, homogeneous groups are a good way to empower women and allow them to have their voices heard.

In India, IFAD supports the Tejaswini Rural Women's Empowerment Programme, which has promoted 75,000 such groups, reaching over 1 million women. In places where self-help groups have federated into apex organizations, these organizations play a crucial role in improving production, marketing and value addition. The organizations promote value chain approaches and partnerships with financial service providers. With improved confidence and training, women have participated in local elections and community decision-making bodies.

Source: IFAD 2013: Gender and rural development brief: South Asia.

Involving women in user groups for natural resource management is essential both for finding solutions that benefit women and for building skills in preserving natural resources.

- Strengthening implementation of gender-related policies at the national level and working with government institutions to develop mechanisms for implementation are fundamental to promoting gender equality and addressing structural inequalities.<sup>93</sup> Support is also needed to make existing policies more gender-responsive and to develop new gender-targeted policies.

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## CHAPTER 6

# Agrifood markets and value chains



## Summary

The chapter makes three sets of points. First, agrifood markets in developing countries have been transforming rapidly in the past several decades, in particular in the context of a confluence of factors. These include policy change that liberalized and privatized markets formerly administered by government parastatals and controls, of urbanization and income increases, of diet changes driven by these two latter factors, of FDI spurred by the above and by technology change in supply and intermediation. Similar changes occurred across developing regions (albeit at different paces) in the structure and conduct of agrifood value chains, the backbones of marketing. The key trends were as follows.

There has been a change in the structure of food markets in developing countries. Food supply chains have shifted from local and fragmented chains to geographically much longer ones. Some segments have declined, with a reduction of the importance of traditional village traders and an increased importance of others, like urban wholesale markets and specialized modern wholesale and logistics. In the general context of overall market expansion, there has been at first a proliferation of small and medium firms and then, eventually, concentration in the segments (with a rise in scale of farms). This has often involved multinationalization. The leading players in the downstream changes tend to be a small number of large corporations, while the revolution in the midstream parts is, in large part, a silent one, with some large firms, but mainly with hundreds and thousands of small and medium-sized firms transforming the ways in which food production is supported and food products are processed, wholesaled and transported.

But there has also been a change in the conduct of food markets. There has been technology change (a capital-labour ratio increase) of food retailing, processing and wholesaling/logistics. Moreover, especially in the interface with modern processing and retailing, there has also been an emergence of private standards of quality and safety and the incipient rise of contract use. The changes in the conduct

and performance of markets usually start in the downstream segments of food consumption and food retailing. These have immediate institutional, organizational and technological implications that stimulate changes in the midstream and upstream segments of the value chains.

Second, this transformation has important implications for rural social inclusion of small-scale farmers and SMEs. Again some broad patterns can be discerned among the diversity of conditions.

The observed macro pattern of consolidation in the agrifood system has, as its counterpart, that the majority of small-scale actors (small-scale farmers, processors, traders, service providers and mom-and-pop food store owners) experience different types and degrees of exclusion. This can be a particular challenge for asset-poor and hinterland-based actors, including female-headed households, women off-farm entrepreneurs and farmers, and indigenous peoples who face constraints accessing needed financial and other resources to participate in transforming markets.

But the transformation does create new and large opportunities that some small- and medium-scale farmers can take advantage of and derive real benefits from, especially in the early stages of the transformation. The expansion of these segments has involved the poor as workers and firms in increased activity in food processing and wholesaling/logistics. Overall, the transformation certainly increases the size of the rural economy, even as it shrinks or even destroys parts of the old occupations and particular market segments and niches, creating opportunities that did not exist before, including for some of those excluded from their previous positions.

Third, there are tested strategies and policies that have been used to partially mitigate the exclusion effects of the agrifood system transformation, and expand its inclusion effects. Three options for these strategies present themselves.

A first strategy is to focus on the equity aspect directly, working at fair trade, organic production and direct selling to consumers. This

approach is appealing, but often does not create net benefits for the poor. It is also an approach that can help only a small portion of the food security needs of vast urban populations to be met and relatively few farmers can be involved. However, although this option will not address the broader exclusion problems of the majority of small-scale farmers and SMEs, it is advantageous to make use of these opportunities where possible and to address problems that prevent certain niche markets from being more beneficial, such as by reducing the cost of certification for organic/fair trade.

A second strategy is to focus on directly linking small farms and firms with large multinational and domestic companies in retail and second-stage processing. This again is appealing and has measurable benefits for those lucky enough to be involved in these programmes. But again the numbers of farmers and small firms covered is extremely small compared with the vast numbers of the latter that face changing markets.

A third strategy and one that we argue is the broadest and most important option, is to use broad policy and public investment to raise the asset base (collective assets, such as roads and electricity, and also the assets of specific groups, like women, indigenous groups and, broadly, the rural poor). This will allow these groups to participate in and prosper from the changing domestic markets, the mainstream of the market change. This requires the convergence of factors that help to induce the upgrading of small firms and farms and build their rural territorial development – the base from which they pursue the opportunities and face the challenges.

### Drivers of value chain transformation

Value chain transformation is driven by two sets of changes downstream in the food system on the demand side. These include diet change (mainly driven by income increases) and urbanization. We discuss each of these in turn.

#### Diet change

##### *Diet patterns*

The diet has gone from mainly home-produced to increasingly market-purchased products. Even

the rural poor are heavily engaged in the food market as buyers. In the developing East and Southern Africa countries (ESA), for example, Dolislager et al. (2015) show rural households bought 44 per cent (in value terms) of the food they consume. A Reardon et al (2015a) study of Bangladesh, Nepal, Indonesia and Viet Nam, shows that rural households bought 73 per cent of their food (in value terms).

There has been substantial diet diversification into processed foods with penetration first in urban and then in rural areas. In ESA (Dolislager et al. 2015), urban households dedicate 56 per cent of food expenditures to processed foods and rural households, 29 per cent. In Asia (Reardon et al. 2015a), urban households dedicate 73 per cent of food expenditures to processed foods, and rural areas 60 per cent.

There has been much diet diversification beyond grains, with little difference between the urban and rural areas. In the ESA study countries, the share of non-grains in food expenditure was 66 per cent in urban areas and 61 per cent in rural ones. In Asia, the figures were 74 per cent for urban and 63 per cent for rural.

The middle class, at least in Asia and Latin America, has an increasing demand for food quality and safety, in particular for semi-processed foods, such as dairy, and, to a certain extent, to perishable foods (Pingali 2006; Ortega et al. 2012).

Diets remain basically local, with only a small share imported. Domestic supply chains account for 80-90 per cent of national food consumption. Imports are only 10-20 per cent (in 2010, for ESA, 15 per cent, West Africa, 11 per cent, South Asia, 10 per cent and South-East Asia, 21 per cent), based on our calculations from FAOSTAT food balance sheets and COMTRADE.

#### *Drivers of diet change*

Diet change is driven by a convergence of factors on the demand side. Income increases drive a relative shift towards non-staples (per “Bennett’s Law”). But that income increase does not have to be such as to result in a change of status from poor to middle class. Dolislager et al. (2015) shows for ESA that sharp changes in

diet occur over segments within the poor, with the rate of change steeper than between the poor and non-poor segments. With urbanization, women are increasingly working outside the home and thus have rising opportunity costs for time to shop for, process and prepare food. Men are increasingly working far from home, across cities. These trends spur the purchase of processed foods and restaurant-prepared foods.

Diet change has also been driven by factors on the supply side. The food-processing sector has grown fast in the past several decades (discussed further below). Agriculture has rapidly diversified beyond grains into horticulture, dairy, livestock, fish and pulses. Rural-urban food supply chains have developed enormously to move these products to urban as well as rural consumers. Reardon et al. (2015b) calculated that African food supply chain volumes increased six to eightfold over 1970-2010, with most of the increase occurring in the past 20 years.

There are a number of implications. As diets are 80-90 per cent "local", the transformation and performance of domestic food supply chains are extremely important. The rapid development of the non-grain and processed foods markets in urban and rural areas represents an opportunity for farmers, wholesalers and processors. The rural poor depend a lot on food purchases and thus, as consumers, depend on well-performing food value chains.

#### **Urbanization and its "radiation or transmission" into a wide catchment area**

Urbanization has advanced to the point where rural-urban food supply chains dominate food markets in Asia, Africa and Latin America. The impacts of urban markets have "radiated" out wider and wider into rural areas and value chains have grown longer, spurred by urbanization and aided by the spread of rural wholesale markets, rural roads and rural electrical grids.

The characteristics of urbanization relevant to agrifood system transformation are as follows.

There has been steady urbanization. Africa is urbanizing rapidly. Africa has caught up with the average urban share in all developing countries – and urbanization in Africa is the

world's fastest. A United Nations study (2014) shows that the urban share in East Africa in 2010 was 23 per cent, in West Africa 44 per cent and in Southern Africa 59 per cent. These rates are like those of LAC countries in the 1950s-1960s. Asia's urban share is predicted to be 60 per cent by 2025, up from 20 per cent in 1960 (James et al. 2008). A United Nations study (2014) shows 45 per cent in 2010, with 32 per cent in South Asia, 44 per cent in South-East Asia and 54 per cent in East Asia.

Urban population shares underestimate the share of urban areas in total food consumption and total food purchased. This is because urban incomes sufficiently exceed rural incomes to compensate for the higher income urban consumers (per Engel's Law) having lower shares of food in their total budgets. In ESA, 25 per cent of the population is urban, but cities consume 48 per cent of the food produced and sold in the countries. In Asia, Reardon et al. (2015) show that while 38 per cent of the population is urban, 53 per cent of the (purchased) food market is urban.

While the urbanization debate tends to focus on mega cities (cities with populations of more than 1 million) a large share of the urban population resides in secondary and tertiary (smaller) cities and towns. They form 50 per cent of the urban population globally. Compared with mega cities, which source from around the country, smaller cities are more reliant on their surrounding rural areas for food (Berdegue and Proctor 2014).

There are several implications for the above point. Urban markets have become the dominant ones for farmers. And urban market demand, especially for high-value non-grain products, is transmitted to rural areas via rural-urban supply chains.

#### **Public investment in infrastructure has been a key driver of value chain transformation**

In the context of policy change, in particular, market liberalization and privatization, which have increased the incentives for both small- and large-scale investments by the private sector and public infrastructure investments, have been crucial drivers of supply chain transformation.

Infrastructural investment has encouraged a lengthening of supply chains and the transformation of midstream and downstream segments. Small farmers' access to markets is also conditioned by infrastructure and distance to market. Barrett (2008) found the latter much more influential than macroeconomic and trade policies on small-scale farmer participation in markets.

Hard infrastructure encourages the development of value chains. Combined with rising urban demand, infrastructural investment has encouraged private investment by SMEs in the midstream of value chains. This is illustrated by the investments by teff millers, transporters and retailers for the growing market in Addis Ababa, Ethiopia (Minten et al. 2013) and by the providers of potato cold storage to serve the huge markets of Delhi (box 6.1) and Patna in Bihar (Minten et al. 2014).

### **Trends in transformation of value chains**

Changes in the structure and conduct of food value chains have occurred over the whole length of the chain as a system, as well as at the level of each segment, downstream, midstream and upstream. In the following we discuss these changes.

#### *Overall changes in value chains*

Urbanization and better transport infrastructure have induced spatial lengthening and de-seasonalization of value chains, to draw from an increasingly broad market-catchment area to feed cities.

There has been first a proliferation of traditional intermediaries and then a reduction in their numbers and a rise of modern intermediaries. Traditionally, there was a short value chain (from farms to the local villages and towns). With urbanization, the value chains grew longer and there was a proliferation of rural brokers and wholesalers, urban wholesalers, urban semi-wholesalers, transporters, warehouse firms and retailers, all as small-scale firms.) As consolidation in processing and retailing occurred, there has been a shift – fastest in processed and semi-processed foods, slowest in perishables – towards the

exit (or absorption) of small rural brokers and small processors (Reardon 2015). With the rise of supermarkets and processors, there is also a “re-intermediation” with the rise of dedicated/specialized wholesalers (Reardon and Berdegué 2002, discussed more below).

In linkages between segments of the value chain, there is organizational and institutional change, albeit at very different paces depending on the product, the scale of the firm buying the product and the country. There is a start of vertical coordination through de facto semi-contractual relations, like supplier lists (Berdegué et al. 2005) and some formal (even if just verbal) contracts. The latter are still limited, but the former appears to be spreading, especially among large companies. There is a rise in private standards (Reardon et al. 1999) specified in the contracts.

Moreover, a traditional method of intersegment linkage, tied output-credit markets (Bardhan 1980) where a trader advances funds to a farmer and then expects his harvest at the end of the season, have declined substantially, as shown in Asia for the rice and potato sectors (Reardon et al. 2014).

#### *Waves of diffusion of downstream and midstream transformation*

Despite heterogeneous conditions, there is some regularity in “waves” of diffusion, over countries and within countries, over income classes and over products.

The first wave was in countries that started their post-World War II growth spurt, urbanized and started industrializing earlier – in particular, South American countries, East Asia outside China and South Africa. The start of processing transformation occurred with FDI liberalization and the start of privatization in the mid-1980s to early 1990s. Retail transformation “took off” from the early 1990s.

The second wave was in countries that had their growth and urbanization spurts later and/or had prolonged internal socio-political pressure to limit FDI. In Central America, Mexico and South-East Asia, processing transformation took off in the 1980s, but retail transformation did not start until the mid to late 1990s.

The third wave was in countries, such as China, India and Viet Nam, that had their growth and urbanization spurts mainly in the 1990s/2000s, and/or had lagged liberalization into the 1990s. Processing transformation occurred somewhat before retail, with the latter mainly in the late 1990s and the 2000s. There was also, as a late part of the third wave or a fourth wave, an incipience of processing and retail transformation in East/Southern Africa.

### *Retail change*

The retail segment has changed, first as the result of direct government action, and then by the relinquishing of government involvement and the rapid diffusion of private-sector supermarkets. The modern retailers themselves had several phases of change in their conduct, in particular the shift from traditional to modern procurement systems. We recount these changes as follows.

Governments themselves directly induced a first stage of retail transformation from traditional, fragmented retail to state-run chain stores. This was prior to liberalization and privatization in the 1990s/2000s, when most of the state chains were dismantled. Examples are the Fair Price Shops (which are still there) in India.

After the liberalization of retail FDI and the privatization of state retail outlets, there was a huge surge in the 1990s and 2000s in private investment in supermarket chains in developing countries (Reardon et al. 2003). The “waves” of diffusion emerged in the spatial pattern discussed above.

The share of modern retailing in overall food differs over the wave of diffusion, with the deepest penetration to date being in the first wave countries where the share was nearly half by the late 1990s and 50-60 per cent in the 2000s. In the second wave countries, the share was about 30-50 per cent by the 2000s, and in the third wave countries, some 10-30 per cent. The fastest spread is in the third wave countries in Asia, where the supermarket sector is growing at three to five times the rate of GDP/capita growth (Reardon et al. 2012a).

Inside a country, diffusion has rolled out from large cities to small cities and finally into

rural towns in adapted formats, from upper to middle to poorer classes and from processed foods to semi-processed foods to fresh produce. These paths are essentially the same as in the United States and Western Europe.

To become cost-competitive with traditional retailing, supermarket chains have increasingly modernized their procurement systems. They have started to buy direct from processors including under contracts. In some cases, they specify private standards and use centralized procurement and logistics via distribution centres. The supermarkets also use specialized-dedicated wholesalers who distribute to their stores and organize procurement from suppliers according to volume and quality and timing specifications (Reardon and Berdegué 2002). This has gone by far the furthest with processed foods, but has started to be applied to fresh produce as well (Berdegué et al. 2005 for Central America).

### *The midstream segment's change: processing*

Similarly, and in parallel with the retail sector, the processing sector has transformed in structure and conduct. We discuss these changes as follows.

The processed food sector has grown quickly in the past several decades. Packaged food sales are growing at only 2-3 per cent annually in developed countries, versus 13 per cent, 28 per cent, and 7 per cent in low, lower-middle and upper-middle income developing countries (Gehlhar and Regmi 2005; Wilkinson and Rocha 2009).

As in the retail and wholesale segments, the first stage of transformation of food processing was driven mainly by governments setting up parastatals, especially in grains (and in export crops like rubber). However, the actual effect on food systems was limited, as the parastatal processors were mainly confined to grain sold to urban markets and there were large “parallel markets” (not via parastatals).

The second stage of the transformation of food processing was driven by private-sector investment. As with the parastatal retail outlets, there was rapid privatization in the late 1980s or 1990s. Only a few countries still had substantial

government food-processing operations into the 2000s (India; Rashid et al. 2008). The late 1980s through to today has seen the changes detailed below.

### *The take off of the private-sector processing transformation*

Privatization and liberalization combined with urbanization and increased income led to two phenomena. First, especially in the 1990s-2000s, there was a proliferation of SMEs processing grain, dairy, meat, fish and produce, both to fill the gap left by the demise of public-sector operations and to meet growing urban demand. Examples include in dairy, wheat and horticultural product processing SMEs in Brazil (Farina et al. 2005; Farina and Machado 1999), and maize, vegetable and fruit processing in Africa (Broutin and Bricas 2006; Jaffee and Morton 1995; Jayne and Jones 1997; and Rubey 1995).

Second, privatization and FDI liberalization led to an avalanche of FDI from Western Europe and the United States, then Japan. The consequence was that foreign firms formed a major share of the processing sector in a number of first and second wave countries by the end of the 1990s, and the trend continued in third and even fourth wave countries in the 2000s.

However, regional multinationals like CP (Thailand) and Bimbo (Mexico) were also buying domestic processors in their regions in the 2000s (Wilkinson and Rocha 2009; Reardon et al. 2007b). This is starting in Africa, such as the 2015 purchase of Blue Ribbon (large maize mill in Zimbabwe) by Bakhresa (large wheat and maize mill in Tanzania). Large regional multinationals have also acquired large processors in the United States and Europe. An example is the 2014 acquisition by Shuanghui (China) of Smithfield Foods (United States), which had been the largest pork processor in the world.

### *The processing sector concentrated rapidly in the 1990s and 2000s*

A striking consolidation is occurring. For example, by the early 2000s, Nestlé had a 61 per cent market share in Latin America

for packaged foods (confections, soups, pet food, baby food, dairy and baked goods). This has been driven by the large processing firms having advantages over processing SMEs. Larger processors often have economies of scale, economies of scope, bargaining power and monitoring capacity and “resource provision contract” capacity, access to cheaper credit than small firms can obtain (Shwedel 2003), and more efficient marketing systems, such as via the use of distribution centres and logistics fleets. This latter has created a “symbiosis” between large-scale processors and supermarket chains.

SMEs have found it hard, especially in the medium term, to compete with large processors. Examples are large tortilla firms displacing traditional women’s tortilla firms in Mexico (Rello and Saavedra 2007). The emerging penetration of rural towns by modern retailers selling branded processed foods at a discount may accelerate this competition (Reardon et al. 2007a). With health crises, consumers have also moved away from small processors and wet markets as a result of food safety concerns (for Thailand, see Posri and Chadbunchachai 2006).

But the traditional small processing enterprise has some advantages it can use to resist or avoid competition with the modern segments. As the small processing enterprise is usually in the informal sector, it saves the costs of taxes and registration and largely avoids the costs of meeting regulations on food standards. It uses its own family labour flexibly and intensively. Its small size allows it to fit into nooks and crannies and shift its location. These sorts of advantages can create periods and cases of rapid and widespread growth in the numbers and volumes of SMEs, such as is documented for the maize-milling/retailing sector in Tanzania (Tschirley et al. 2015). But with the steady increase of the modern segments in the developing regions, albeit at different paces in different countries, products and segments, one can infer that these advantages of SMEs are not decisive or permanent, and are at the very least not automatic.

*The midstream segment's change:  
wholesaling/logistics*

While governments played a major role in the development and transformation of wholesale markets, the overall segment of wholesaling and logistics underwent changes similar to those of processing. There was expansion and fragmentation following liberalization and privatization, and then concentration.

Initially, governments directly induced a first stage of wholesale transformation from traditional, fragmented wholesaling to government-run wholesale markets (of private wholesalers). This shift created economies of agglomeration and sometimes economies of scale relative to the traditional fragmented wholesale sector, such as in Africa (Tollens 1997). The markets created by this investment are huge, such as that in Mexico City, the largest wholesale market in the world. China's wholesale market volume increased 11,000 per cent between 1990 and 2000 (Huang et al. 2007; Ahmadi-Esfahani and Locke 1998).

Then, the "traditional" wholesale sector currently appears to be restructuring in several ways. The public-sector wholesale market segment is presently consolidating in some countries (over wholesale markets, as in South Africa [Louw et al. 2007] and over wholesalers within wholesale markets as in Mexico, [Echánove and Reardon 2006] and Peru, [Escobal and Agreda 1997]). Also in some countries there is evidence of a decline in the share of rural brokers upstream in the value chain, with the exit of village traders in Indonesia (tomato) (Natawidjaja et al. 2007) and in Bangladesh, India and China (rice and potato) (Reardon et al. 2012b). But in the rural towns to cities segment, it appears that SMEs in wholesaling and logistics are proliferating (what Reardon et al. [2012b] call the "Quiet Revolution in food supply chains," that is being observed in Asia and increasingly in Africa [Reardon et al. 2015b]).

Finally, beyond the traditional wholesale sector, a "modern wholesale sector" is appearing, with the emergence of the specialized/dedicated modern wholesalers noted above, as well as large-scale foreign and domestic logistics firms.

In some cases, large processors and retailers are buying direct from suppliers, this is most common with respect to procurement from processors (such as Carrefour buying from Nestlé).

### **Social inclusion impacts of agrifood system changes**

The massive changes in diets, urbanization and the agrifood value chains discussed above had important consequences for farmers and the rural poor. We discuss these first with a focus on the impact of urbanization and diet change per se, without reference to value chain structure and conduct changes, and then discuss the impacts of the latter changes.

### **Impacts of an urbanizing national food market on small farmers and SMEs**

Urbanization has indirect effects on rural households through spurring employment near cities linked to the food system – connected with the labour-intensive non-grain crops like horticulture, poultry, dairy and fish, as well as with first-stage processing and handling of crops.

Urbanization also has direct effects on rural actors by lengthening domestic food supply chains. The means that farmers and rural SMEs in more distant areas can access a large conglomerated market rather than selling to dispersed village groupings of consumers having lower purchasing power than the average urban consumer. The presence of a growing urban market, of road links to it and of the right conditions in a rural area with access to the city can be the convergence of factors that causes an explosively rapid rural transformation. Box 6.1 gives the example of the sudden surge in cold storage capacity for potato in western Uttar Pradesh (Agra) for the Delhi market, drawing from Das Gupta et al. (2010).

Additionally, urbanization can create a big market for farmers as sellers of food – but the share and types of farmers who sell vary by region and can be limited and precluded from this opportunity.

Commercialization of grain farming and horticulture in Asia, including by small-scale farmers, appears to be widespread. Thus

### BOX 6.1 The meteoric development of potato cold storage in Agra, supplying the Delhi market

Technology and organizational change in the midstream can be rapid and dramatic, in particular when it is linked to increasing urban demand, improving infrastructure and a policy of encouragement and support. The case of the rapid rise of potato cold storage in Agra in western Uttar Pradesh near Delhi (Das Gupta et al. 2010) illustrates this. Their survey found very rapid and deep change in the cold storage sector in Agra and in turn in the seasonality and cost of potatoes in Delhi and intermediation patterns in the rural area. This transformation was driven by a combination of factors, including rapid development of a demand for the vegetable in Delhi, improvement of the road between Agra to Delhi, introduction of a disease-resistant and long shelf life potato variety, establishment of an electricity grid, partial subsidizing of irrigation pumps and cold storage equipment, and the local economy generating investable funds in the intermediate city's business sector. In the early 1990s few farmers grew potato in Agra and there was nearly no modern cold storage. By the late 1990s cold storage had risen to store 40 per cent of the vastly larger potato output, and by 2009, 80 per cent of the harvest could be accommodated. Traditional on-farm storage of potato went from nearly 100 per cent to 1 per cent. Delhi went from sharply seasonal potato consumption (from fresh harvest) to multiseasonal availability and 65 per cent of this consumption came from cold-stored potatoes, mainly from Agra. Rural brokers were sidelined by the cold storage and themselves became the main locus of intermediation with urban wholesalers coming to buy potatoes from farmers at the storage units.

Source: Das Gupta et al. 2010.

most small-scale farmers are affected by market change (Minten and Murshid 2010 for Bangladesh; Das Gupta et al. 2010 for India). However, even in Asia, grain (and potato, the main vegetable, and mango) sales tend to be somewhat concentrated among the upper small stratum and medium-scale farmers with a low share to the lowest tercile of land in the local farm land distribution (Reardon et al. 2012b with information on rice and potatoes for India, Bangladesh and China; Qanti 2014 with data on mangoes in Indonesia, and other examples).

The story is similar in Africa, but with just a lower share of sellers in the overall distribution of farmers, and perhaps an even greater concentration of sales volume among relatively few farmers – again among those in the upper portion of the land and asset distribution (for grains, Barrett and Dorosh 1996; Barrett 2008; Jayne et al. 2006; Mather et al. 2013, for ESA, and Hollinger and Staatz (2015), for West Africa). Chapoto et al. (2013) note that while the above patterns hold for maize, small-scale farmers can be switching into cotton and

horticulture crops and so can be more frequently in the “small but commercial” sphere than a “maize only” analysis would show. Overall, there is some exclusion of asset-poor small-scale farmers even if the market is just a conventional rural-to-urban one (abstracting from selling into modern channels like supermarkets). Barrett (2008) notes “...that net sales are positively associated with asset endowments and favourable geography, and that transactions costs exert considerable influence on crop marketing patterns.”

There is, nevertheless, inclusion underway in several categories as the market expands and urbanizes. In the initial period at least, there is a large increase in SMEs in transport, milling, cold storage, wholesale, retail, warehousing and upstream services such as harvesting teams. This is termed the “Quiet Revolution in supply chains” (Reardon et al. 2012b) and the rise of the “hidden middle” in the midstream segments of the supply chains in Africa, Asia and Latin America (Reardon 2015b). Small farms with the requisite infrastructural access and on-farm

productive assets portfolio can participate in the growing markets.

Many rural households buy food and thus are exposed to changes in domestic food value chains. The literature notes that there are many net buyers of food in rural areas, not just among the landless, but also among small-scale farmers (for India, see Mellor 1976; for Africa, see Weber et al. 1988 and Reardon et al. 1988, and this point frequently has been made in the debate in Africa [see Barrett 2008]). This implies that food value chain transformation and efficiency can be important to the rural poor, not just as farmers and labour sellers, but as consumers/buyers.

### **Impacts of a modernizing food system on small farmers and SMEs**

Abstracting from the expansion and urbanization of the market per se, the modernized agrifood industry segments are broadly competitive with – and apparently, over the longer term, broadly destructive of – their counterparts in the traditional sector.

We focus in this section on the effects on modern suppliers. The impacts of modern companies differ broadly over the different types of buyers. Supermarkets directly affect those from whom they buy – wholesale/logistics and processing firms, and from non-processed product farmers (such as fruit and vegetable farmers) if they buy direct from the latter. But retailers can only have an indirect effect on farmers selling first to processors or wholesalers who, in turn, sell to supermarkets. Processors and wholesalers can directly affect any category of farmer as well as other SMEs in processing and brokering.

The literature on the effects of the modernizing of the food industry on farmers and SMEs has tended to focus on processors' effects on farmers (for example, Key and Runsten 1999) and the effects of supermarkets' direct agents on fresh produce farmers (Hernández et al. 2007, for example). Much less work has been done on the three issues below:

- The direct effects of supermarkets on SMEs in processing and wholesaling – this is actually the largest potential effect because processed and semi-processed products

account for 80 per cent of what supermarkets sell.

- The effects of the processing sector transformation on the wholesale/logistics sector.
- The effects of wholesale sector transformation on farmers and SMEs.

The evidence is mixed on the impacts on small-scale farmers (Reardon et al. 2009). Supermarkets and processors do tend to buy from medium/large-scale farmers if there are enough such farmers in the procurement area. Buying from bigger farms means buyers can cut the transaction costs of sourcing from many small farms and bigger farms often have more consistent delivery and quality, and can meet the requirements without needing help from the buyers.

But supermarkets and processors buy from small-scale farms where “that is the buyers' only option,” or perhaps the product requires special care and thus more focus and labour. But when they buy from small-scale farms, usually they buy from road-accessible (not hinterland) zones, and from small-scale farmers with the needed assets, such as irrigation and education or training (see Hernández et al. 2007 for Guatemala, with similar results in Indonesia, Nicaragua, China, Mexico and Mozambique). If large firms really need small-scale farmers and the farmers do not have the assets, the firms will supply them (or NGOs or sometimes government will do it for them so that the small-scale farmers can participate), such as by giving credit and inputs in “resource providing contracts,” (Austin 1981; Key and Runsten 1999; Schejtman 1998; Minten et al. 2009 for Madagascar for vegetables, Dries and Swinnen 2004 for Poland for dairy).

In terms of the impacts on the incomes of small-scale farmers selling to supermarkets or large processors, many studies report from moderate to substantial gains in incomes, comparing participants in modern supply chains with those in traditional, either between treatment and control groups, or before and after. But there are relatively few studies that control fully for the asset and liquidity situations

of farmers so as to isolate the effect of the relation with modern channels per se.

Some studies (such as Maertens and Swinnen 2008 in Senegal or Neven et al. 2009 in Kenya) show indirect effects on off-farm employment in agro-industrial firms and on farms producing labour intensively to market to processors and supermarkets.

### Policy and programme implications

In this section we review three sets of strategies, which focus on reducing exclusion of small-scale farmers and SMEs and enhancing their inclusion in these processes of transformation. The third set is the most important for the vast majority of small-scale farmers – mainstream domestic food markets.

#### Strategies to help small farmers sell to markets

The fair trade market is large, about US\$7 billion in 2011 (Eliot 2010). A significant proportion of that is designed to be transferred from consumers to farmers through price premiums (de Janvry et al. 2015). There are 1.4 million fair trade farmers and workers in the world, of whom 80 per cent are small-scale farmers.

The organic market is 10 times as large, around US\$72 billion in 2013. There is no designed or explicit mechanism to ensure that price premiums (for organic versus conventional products) reach the farmer. There are almost 2 million certified organic farmers, of whom about 85 per cent (with 25 per cent of the certified organic land) are in developing countries<sup>94</sup> (Willer and Lernoud 2014).

Together the fair trade and organic markets account for about 3.1 million farms (of which the great majority are small) in the developing world. These two markets account for about US\$80 billion in sales, which is large as an absolute figure, but should also be viewed relatively, as it is only 1.5 per cent of the global agrifood sector which grosses US\$5 trillion (very rough estimate by the World Bank).

Short supply chains are those where "...the foods involved are identified by, and traceable to a farmer. The number of intermediaries between farmer and consumer should be 'minimal' or

ideally nil," (Santini and Gomez y Paloma 2013, p.13). Using this definition one can argue that all traditional food systems at one time were "short supply chains", and that tens of millions of small-scale farmers in the developing world sell at least a small part of their production in this way. Hence, one should distinguish between traditional food trade systems and development schemes that explicitly seek to promote this way of engaging with markets as an alternative to "conventional" or mainstream marketing channels. However, there are no data on sales volumes and farmer numbers in these schemes. It is likely, however, that they are several times smaller today than the fair trade or certified organic market channels in volumes and numbers of farmers.

There are several studies that show that these three types of markets often offer more favourable and fair conditions for small-scale farmers (Ruben 2008). Other studies, however, point out that these markets are not immune from the structural transformation downstream in the value chains, such as conventional markets are undergoing. For example, in the United States, by far the largest market for organic food, 93 per cent of organic sales, are handled by conventional and natural food supermarkets and chains. Farmers' markets and other direct sales outlets account for only a tiny share of United States sales (Dimitri and Richman 2000).

Klonsky (2000) had predicted this trend in a study that showed that organic farming is being affected by forces such as regulation, consolidation and mainstream entrants at the farm, manufacturing and retail levels. She noted that this was fostering a trend which resembled the organic and conventional food systems. Guthman (2014) portrays the conflict between "big organic" and "small organic", describing tensions that are similar to those facing "big conventional" and "small conventional."

The fair trade market has transformed in ways similar to the organic sector. It has been changed significantly through the growing participation of firms like Nestlé, Walmart, Tesco and Carrefour (Raynolds et al. 2007).

“Short-chain strategies” face a similar dilemma. They require direct contact between farmers and consumers. Practically, that would be extremely hard to scale up to the point where this direct approach could make a dent in feeding the 42 per cent of the world’s urban population that lives in cities with populations of 1 million or more. The contradiction is that for them to scale up they would have to use the same logistics and wholesale services that they are by definition trying to circumvent.

Moreover, a growing number of studies conclude that the economic benefits of the above three approaches are sometimes not large enough to offset the increased (relative to traditional or conventional channels) transaction and production direct costs. The upshot is that small-scale farmers are not necessarily better off in terms of net income. de Janvry et al. (2015) show that for small-scale farmers engaged in certified fair trade in Nicaragua, the price premiums largely flowed towards fair trade certifiers rather than farmers. Beuchelt and Zeller (2011) found that, in Nicaragua, farm-gate prices of certified coffees were higher for fair trade than for conventional coffee, but farmers did not necessarily get out of poverty or earn profits from certified coffee production. Over a decade, organic and organic-fair-trade farmers became poorer than conventional farmers in the area.

Weber (2011) looked at small, often indigenous certified fair trade – organic coffee farmers in Southern Mexico – and found an income gain of 5 per cent of total household income net of the cost of participation in the local cooperatives. But there was no income gain if the cost to the farmer of becoming organic and fair trade certified was taken into account. It appears that only when small farmers have especially high yields can they reap the potential income benefits of organic and fair trade production (Barham and Weber 2012). The challenges faced by certified small-scale farmers in achieving high yields are similar to those faced by conventional family farmers, although applied to a different set of technologies so that the specific constraints may be different.

Given this evidence, it is difficult to accept arguments hailing these three strategies as *the*

solution to the challenge of small-scale farmer market access. This is both because they often do not provide a net income increase over conventional approaches, when all factors are costed, and because they are just niche strategies, involving few farmers and consumers. After decades of hard and good work, only about 0.5 per cent (around 2.8 million<sup>95</sup>) small-scale farmers in the developing world are certified organic or fair trade farmers.

Apart from the above three main strategies designed to be explicitly and directly pro-small-scale farmer access, there are others. Several countries have established public food procurement systems, which, while technically and institutionally complex, appear to have had a significant and positive effect on small-scale farmer development (Friedmann 2007).

An example of this is a new programme in Brazil for the public purchase of food from small-scale farmers to supply government-run food distribution systems (such as school meals, public hospitals, jails and the army). One scheme is run by the school meals system (National Programme of School Meals)<sup>96</sup> and the other scheme is more general (Food Purchases Programme).<sup>97</sup> The two schemes together buy about US\$735 million of food from small-scale farmers. However, this sum is only 5 per cent of the value of the output of all Brazilian family farms, or US\$171 a farm. This policy can have a positive impact if it is used to train and develop the capacities of small-scale farmers to market food, but is unlikely to make a major dent in the market share or performance of smallholders in national markets.

It is likely that with the above strategies, as in any of the other possible strategies that one could think of, the social-inclusion benefits will be case-specific, depending on the characteristics of the farmers, of the places where they live and work and of the markets in which they normally operate. The benefits will depend also on the programme design, and the conditions and characteristics of implementation.

However, a clear advantage of the three strategies over conventional schemes is the large educational role that they have played. Millions of consumers have been made aware of the way

food markets work, and of the environmental impacts of food production, processing and distribution, and of the quality of the foods we eat. The social and economic implications of these culture-based strategies should not be downplayed, as more educated consumers in turn have exerted pressure on conventional farmers, processors, retailers and food service outlets to change their behaviours in many ways. Without the sustained political and educational role of the organic movement, who knows what the standards would be now in the non-organic segment of the supermarket's food section.

Policy can support the above approaches by helping farmers to achieve higher yields (such as through extension assistance) and by dismantling the discrimination against small-scale farmers in the provision of publicly-supported services – technical assistance, training, information, finance, business advisory services and so on. These are legitimate and valid options for both farmers and consumers, and public policy preferences should be based on efficiency and impact considerations and not on cultural or ideological prejudices against alternative agrifood systems. Moreover, the three strategies depend on legally sanctioned and well-enforced standards (not only for export, but also for the growing urban middle-class markets in developing countries).

**Strategy focused on international and high-end domestic markets through contracts with large food companies to source from small farmers**

This is a strategy that has gained political and financial support from many international development agencies and NGOs over the past decade. It has been argued that bringing in the corporate private sector is a major step towards a solution to shortcomings of traditional strategies to help small-scale farmers. Porter and Kramer (2006) argue that businesses “create shared value” when they design their business strategies to address social and environmental problems. Drayton and Budinich (2010) argue for alliances between large companies and NGOs to build markets that are inclusive

of small-scale farmers. Several examples are highlighted here.

- The UTZ Certified label is a global multi-stakeholder programme led by Walmart, Metro and other global retailers, wholesale/logistics/processing firms, such as Cargill, and second-stage processors, like Nestlé and Kraft Foods. UTZ operates for example in the Côte d’Ivoire, paying a bonus to cocoa farmers who improve the quality of their crop (Endean and Suominen 2014).
- The Productive Alliances (Alianzas Productivas) approach has been used in many Latin American countries (including Brazil, Chile, Colombia, Mexico and Peru) to promote market access for smallholders through contracts with food processors, exporters, supermarkets and fast food chains. The first such programme started in the early 1990s (and is still underway) in Chile, when the Institute for Agricultural Development established a programme to develop contract agriculture involving small-scale farmers (Schejtman 1998). Since then this approach has been used by many governments, sometimes with the support of international development agencies such as FAO or the World Bank (CIAT 2013). In Colombia, for example, the Ministry of Agriculture’s Programme in Support of Productive Alliances between 2002 and 2013 contributed to developing 775 alliances, with the participation of 49,000 families and 430 private firms (mostly food processors). The total value of the businesses developed is around US\$434 million, with a government investment of about 23 per cent of that amount (Lundy et al. 2015). Since 2002, the World Bank has supported about 20 projects with a Productive Alliances component, sometimes in a context of a community driven development approach. About 2,800 alliances have been created involving approximately 108,000 beneficiaries (CIAT 2013).
- Another scheme is the Grow Africa initiative joint proposal of the World Economic Forum, the African Union and the New

Economic Partnership for African Development, involving more than US\$60 million of private-sector investment in activities involving 800,000 small-scale farmers, generating sales of about US\$300 million (Endean and Suominen 2014).

- IFAD's project portfolio has shifted substantially from a "farm-to-market" approach, to a growing emphasis on participation of small-scale farmers to access value chains in collaboration with large firms (box 6.2). IFAD's "Four Ps" programme (Public-Private-Producer Partnerships in agricultural value chains) seeks to improve the participation and benefits of small-scale farmers in value chains. An analysis of several case studies of this programme showed eight main factors driving the outcomes (Thorpe and Maestre 2015):
  - define the rationale and underlying assumptions
  - ensure a clear "market pull"
  - prioritize farmer ownership
  - align the incentives of partners and build trust
  - manage risks through risk identification and mitigation
  - build the capacity to respond to changes in complex market systems
  - take a proactive approach to public accountability and transparency
  - create sustainable market systems.

Despite the significant resources invested in these linkage schemes and the unparalleled size, power and managerial, technical and financial capacities of the firms involved, a recent review of experiences concluded that, "Collaboration with the private sector has proven to be somewhat more challenging." (Endean and Suominen 2014, p.64). They found that:

- It is hard to find private-sector partners who are willing to work in the smaller, lower-income countries.
- There are low returns and high risks inherent to small-scale farmer agriculture.
- There are high transaction costs that private-sector firms are unwilling or unable to pay and that the public sector must take care of.

- There are the "hidden costs of attracting private-sector partners and overseeing these programmes, relative to their development benefits" (Endean and Suominen 2014, p. 67).
- Donors acknowledged a lack of capacity in their own staff to work effectively with the private sector.

Ion et al. (2014) reviewed private-public agrifood sector partnerships and showed several points. Partnerships are most effective when used to promote whole sectors or clusters. There is a large gap between available FDI and financeable projects. Most proposed projects lack good business plans or do not have the potential to have the socio-economic impacts required by investors. These schemes only reach the top farmers, even among the small-scale farmers, and not the poorest – even when it comes to consumers, businesses prefer to target those living on US\$3-4 a day, not those at the poverty level (below US\$2 a day). Even projects developed by multinational companies have problems reaching scale. Impacts are more likely when farmers are close to going to market and just need some additional help.

Ion et al. (2014) note that most of these schemes have not been evaluated for results or impacts. Companies report the same challenges that are well known to donors and governments when it comes to assessing results – difficulty in establishing attribution, short duration of the projects compared with the time required for impacts to be felt, the cost of rigorous evaluations and so on.

Some studies, however, offer partial evidence that appears to show that those farmers who partner with companies benefit through better prices, more access to technology, better risk management and less market uncertainty (Reardon et al. 2009; Biénabe et al. 2011; Michelson et al. 2012). The main causes of these benefits appear to be the significant resources that are mobilized in support of these projects, the high quality of the services that are provided and, above all, the fact that the farmer is brought into an environment where many of the constraints to production and marketing

### BOX 6.2 IFAD's experience in value chain development in partnership with the private sector

IFAD's portfolio has shifted significantly towards value chain programmes over the past ten years. The greatest increase occurred around 2005, at the same time as IFAD's Private Sector Development and Partnership Strategy was adopted. The current generation of value chain development projects seeks direct collaboration with the private sector. Examples include the National Programme to Support Agricultural Value Chain Actors in Guinea, through which IFAD is putting development funds in the hands of farmers' organizations, allowing them to choose how and where they spend the money. The programme has benefited over 550,000 farmers. The Development of the Central Corridor Project in Ecuador uses a territorial approach to link geographically contiguous regions, on the basis of prioritized value chains. The project increased the income of 16,000 families in the project area. While some projects link small-scale farmers to supermarkets, exporters or large processing units, most projects work with small-scale farmers to link them to new and emerging value chains. Most IFAD-supported operations, even when they are called "value chain development projects", address only partial elements of a value chain. Based on their experience with these projects, IFAD provides recommendations that projects should:

- Not always try to develop an entire value chain.
- Adjust the value chain approach to each context.
- Encourage governments to create enabling environments for better functioning value chains, with public goods to address market failures, and with incentives for companies to make investments in partnership with small-scale farmers.
- First identify the product value chains for which there is a business case for involving small-scale farmers and in which value chain actors are committed to engaging in mutually rewarding arrangements with small-scale farmers.
- Consider less competitive and demanding domestic markets for the poorest rural segments often unable to meet the requirements for selling to modern markets.
- Pay attention to the roles and needs of women and youth within the value chain. They have opportunities in farming, wage work and off-farm microenterprises, but they often lack assets and are seldom members of farmers' organizations.
- Be designed to be flexible, and build capacity for participants to be flexible and anticipate rapid change in value chains that should be expected.
- Use a third-party facilitator to help with public-private linkages to identify challenges, build trust and adapt.
- Analyse all the possible business models for inclusion of small-scale farmers in value chains, in addition to IFAD's usual project entry point (farmer organizations in farmer-driven models). Buyer- or intermediary-driven models can be equally effective in achieving the necessary economies of scale.
- Use, where and as appropriate, contract farming, as well as management contracts, tenancies and joint ventures with modern company clients to create win-win arrangements.
- Make sure the quality standards and pricing structure are made clear from the outset. The project should support small-scale farmers in contract negotiations for these.
- Make value chain financing arrangements to help farmers rent or buy equipment and make other needed investments, via financial institutions, factoring and warehouse receipt schemes.
- Identify strategies to share risks and costs along the value chain to help farmers exposed to the risks in product specialization.

Source: IFAD 2014.

have been removed. In such far more favourable circumstances than the farmers normally find themselves in, small-scale farmers can and do display their considerable productive potential.

The problem, however, is with the expectations that have been created about the potential of these types of strategies to solve the production and market-access problems of the small-scale farmers of the world. Based on official company reports publicly available on their web sites, we find that, for example, three of the largest corporations that are prominent proponents of these arrangements (Walmart, Nestlé and Unilever<sup>98</sup>, with combined sales of US\$750 billion) are committed to involving 2.6 million small-scale and medium small-scale farmers in direct procurement systems of different kinds. That is equivalent to 0.5 per cent of the world's 500 million small-scale farmers and slightly less than the 2.8 million small-scale farmers who are involved in the certified organic and certified fair trade systems.<sup>99</sup>

There is no doubt that in contrast to the fair trade and short-chain strategies discussed above, large corporations do have the capacity to reach (and, in fact, do so daily) tens of millions of consumers with their products. What they do not appear capable of doing is involving as direct suppliers even 10 per cent or 20 per cent of the world's small-scale farmers (50 to 100 million of them), or, at least, not in the next 10 or 20 years.

With respect to this corporate private-sector led strategy, the first recommendation is that in the face of limited funding, donors and governments should carefully assess the relative merits of investing in this powerful option for fewer small-scale farmers. Alternatively the government should look at other markets that may be less beneficial for each individual farmer, but have the potential to uplift many more family farms.

The best uses of public funds in the context of these public-private schemes include:

- Investing in public goods that reduce transaction costs that the private sector is unwilling or unable to absorb or help solve, such as roads.
- Promoting coordination to form private-public partnerships at the industry or cluster level, rather than with individual firms, which helps the companies and ensures that small-scale farmers are not having to sell to just to one firm and the power asymmetry that that implies (Abdulsamad et al. 2015).
- Upgrading poor small-scale farmers to the levels of productivity and asset endowment that are required for them to be able to participate as suppliers of large companies.
- Investing in the innovation and bargaining capacity of small-scale farmers who may participate in private-public partnerships.
- Developing good business advisory and extension services that can work with local businesses and farmers' groups to help them technically upgrade as well as to identify and formulate solid investment projects, with good business plans and rates of return on investment that can attract the interest of medium- and large-scale firms.

**The most important strategy for the vast majority of small-scale farmers, yet a strategy that paradoxically receives less international attention: the mainstream domestic food markets**

The domestic food markets are where more than 80 per cent of the world's small-scale farmers operate and, as we have discussed, these markets are transforming rapidly. As any small-scale farmer will tell you, these mainstream domestic food markets have two serious problems, they are not profitable and they are unfair in the sense that prices and trade conditions are easily manipulated with impunity by a relatively small number of more powerful market agents. Also, they are hard to reform and improve from the perspective of social inclusion, as shown by the huge collection of failed policies, programmes and projects promoted by all kinds of public and private development agencies.

Policy recommendations with broad applicability include the following.

It is important to pay far greater attention to improving these domestic markets and the participation and performance of small-scale farmers in them. They must be the number one

priority in the policy agenda when it comes to improving small-scale farmers' access to markets. Everything else is secondary, even if it is more politically or programmatically appealing.

It is crucial to make public investments and provide public goods to enhance transparency and reduce the transaction costs of these all-important markets. Improving and extending rural roads, electricity grids and mobile phone systems are high priorities.

Investment is urgently required to upgrade and strengthen wholesale markets, which play a critical role in mainstream domestic markets. This should receive far more attention than it does today. According to an international association of wholesale markets, priorities for support and investment include:

“(a) economic and financial support for the construction of a market or, subsequently, in its modernization, rehabilitation or relocation, (b) the approval of a legislative framework suitable for wholesale and retail commerce, (c) the establishment of management criteria for wholesale markets and the setting of goals of public or general interest that need to be reached. On this basis, markets should be administered (whether by public or private entities or by public-private partnerships) in such a way as to offer to local companies suitable physical, logistical and operational conditions.” (WUWM 2014, p.9).

There are mainstream markets where the process of midstream and downstream transformation has generally progressed (such as dairy markets in many countries). Here, public-private partnerships have potential. Many of the specific policy recommendations in the section “Strategy focused on international and high-end domestic markets via contracts with large food companies to source from small farmers” apply here. A frequent strategy that has had success is the promotion of contract farming.

This leaves us with the hard-core problem of small-scale farmers (including probably the majority of the poorer ones who still manage to participate as food sellers in the market) working in low-value, “commodity” (not

quality differentiated) markets, which are still in the early stages of market transformation. The position of these small-scale farmers can be improved significantly and sustainably. But this can only be achieved at significant cost and effort sustained over many years. There are four core components of a strategy to face this difficult challenge:

Some government or other public-action entity must take responsibility for the resolution of asset shortfalls and idiosyncratic market failures (to access inputs, capital and services) affecting a particular group of farmers working in a particular mainstream domestic market. In many developing countries the reforms of the 1980s and beyond saw the dissolution of extension systems and similar public infrastructure. Even before that, many of these services had become very ineffective, or worse. Re-establishing networks of public-action agents that can play these roles is a necessary step.

Increasing labour and land productivity remains a core component, without which almost everything else than can be done is likely to fail. Small-scale farmers with low productivity can only sustain their position in these markets at the cost of rewarding their own labour very cheaply – that is, by remaining poor. That is not an acceptable strategy, and hence enhancing productivity must be a central concern.

It is important to improve the bargaining power of small-scale farmers in these difficult markets, by supporting the formation and development of farmers' organizations and other forms of collective action (Berdegue 2001; Biénabe et al. 2011). But there are reasons for the many failures in this field. Despite the well-intentioned assumption that if small-scale farmers organize and engage in economic collective action of some sort, they will be able to beat these opaque, uncompetitive, imperfect markets, the evidence consistently shows that the odds are stacked against them. In many cases these efforts last as long as they enjoy external support. In the absence of significant transaction costs and when prices are defined in spot markets (as is often the case for basic food staples), it is difficult to see how 50 or 100 small-scale farmers with a few bags of produce each,

will manage to consistently obtain a significantly better price that can offset the direct and indirect organizational costs. To really reach sufficient scale to be able to operate successfully in these kinds of markets, farmers' organizations would need to have very large numbers of members and, in that case, new coordination problems arise. Farmers' organizations are likely to be better justified in these cases if they are focused on other important objectives – access to inputs, provision of financial services to their members, collective certification schemes to access new markets and so on.

In conclusion, we have shown that agrifood markets are transforming rapidly in developing regions. This has emerged as an opportunity for a number of types of economic actors – consumers (urban and rural), small and medium-sized firms in the midstream of value chains, including processors and prepared foods enterprises, and wholesalers and logistics firms and other service enterprises, and the upper stratum (in asset terms) of small-scale farmers. However, we have also shown that for the great majority of small-scale farmers the agrifood market transformation is a challenge. It is extremely important that both governments and international assistance agencies work to develop the accessibility and performance of the mainstream domestic food markets (for example through investment in roads and wholesale markets). They need to help asset-poor small-scale farmers and other rural microenterprises to have the assets to participate in the changing market. Also, market transformation needs to be “managed change” by making sure that public services and commercial regulations provide a level playing field for the rural poor.

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# Spotlight 6: Food and nutrition security

## Improved nutrition is an essential element of inclusive rural transformation

Food and nutrition security – reliable access to food in sufficient quantity and quality to enjoy a healthy and active life, coupled with a sanitary environment, adequate health services, and knowledgeable care – is a central determinant of broad social and economic welfare (FAO 2013; Timmer et al. 1983).<sup>100</sup> Typically, where food and nutrition *insecurity* is deep and widespread, so, too, are poverty and stagnation (FAO et al. 2015; IFPRI 2015). Inclusive structural and rural transformation – a transformation that delivers widely held benefits – must feature expanded food and nutrition security. But while the link between them is obvious, it is not inevitable. In most contexts, supportive policies and investments are required.

The stakes could not be higher. While the prevalence of undernourished people in the world has declined steadily over the last few decades, 795 million people – just over one in nine – remain undernourished (FAO et al. 2015). An estimated 26 per cent of the world's children is stunted, 2 billion people suffer from one or more micronutrient deficiencies, while 1.4 billion people are overweight, of whom 500 million are obese (FAO 2013). Multiple types of malnutrition – undernutrition, deficiencies in micronutrients (vitamins and minerals) and being overweight and obese – can coexist within the same country, household or individual. This imposes high economic and social costs at all income levels. Globally, economic costs alone are estimated at US\$3.5 trillion a year, or US\$500 per person (FAO et al. 2015). Progress against food and nutrition insecurity is required and structural and rural transformation must play a role.

### Analytical framework

How do these transformations promote food and nutrition security, and vice-versa? And what are the major policies and investments that bring about progress towards these goals?

Figure S6.1 illustrates the two-way relationship. In one direction, the core pillars of food and nutrition security (availability, access and utilization)<sup>101</sup> are affected by the commercialization and specialization that drive and reflect structural and rural transformation. In the other direction, food and nutrition security leads to better health and education outcomes that affirm and strengthen core drivers of structural and rural transformation. Through nutrition-enhancing food systems, the economic dynamism brought about by structural and rural transformation can be translated into general welfare improvements, further affirming and sustaining that dynamism. In both directions, factors that affect the nutritional status of children and pregnant women have long-term consequences, as do opportunities and constraints facing smallholder farmers and traders whose decisions are fundamental to the pace and quality of rural transformation in many contexts.

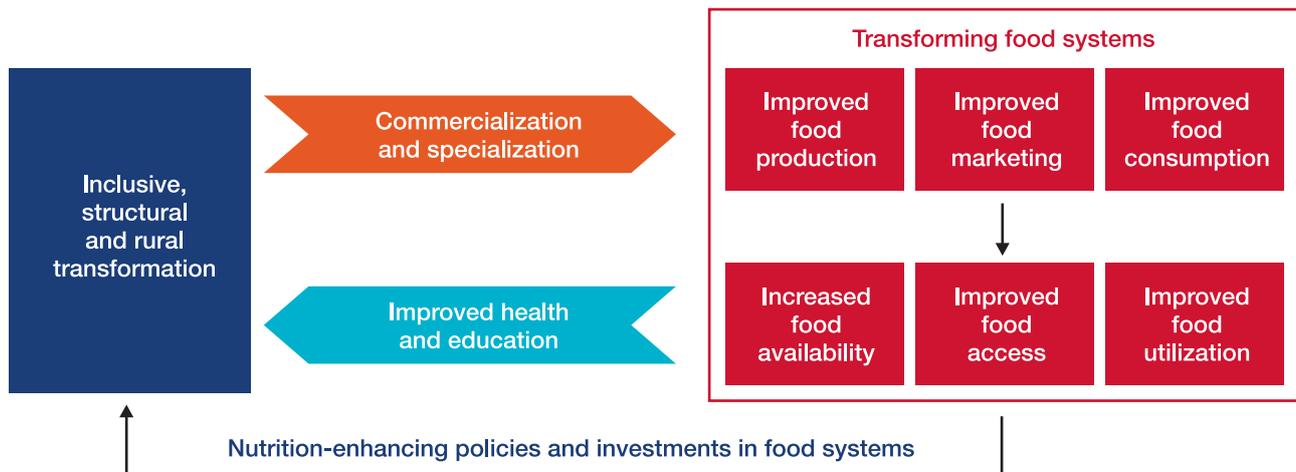
### Food and nutrition security under structural and rural transformation

Significant structural and rural transformations are generally accompanied by wide and deep reductions in food and nutrition insecurity (Timmer 2007). Livelihood options expand and incomes rise, allowing households to increase the quantity and quality of food they consume. Simultaneously, increased food security improves health and education outcomes, leading to structural and rural transformation. All three dimensions of food and nutrition security – availability, access and utilization – make significant gains:

1. *Availability* increases because of improvements in timeliness, intensity and efficiency of food production operations, which increase unit food output and overall food availability.

2. *Access* rises as the commercialization of food production and consumption increase labour and land productivity on farms as well as off-farm employment opportunities, leading to higher incomes and food consumption.

FIGURE S6.1 Analytical framework



Source: Authors.

3. *Utilization* improves as rising household incomes and associated demand-driven deepening of food systems broadens the availability and affordability of nutrition-rich foods. Access to health services, water and sanitation also improve.

But these effects are not automatic. Figure S6.2 plots measures of the three forms of malnutrition – undernutrition (stunting), micronutrient deficiencies (anaemia) and being overweight (obesity) – against levels of structural transformation as captured by the share of agriculture in GDP in a set of 16 countries from around the world. The countries fall into three income groups – low, low-middle and high-middle – and their agricultural GDP shares range from 2.5 per cent (South Africa) to 44 per cent (Niger).

No causal relationships are assumed or implied, but the data indicate that, generally, as the transformation progresses, undernutrition and micronutrient deficiencies fall, but with all three forms of malnutrition remaining significant in most countries. Obesity rates surge at high levels of transformation, but are also important at lower levels.

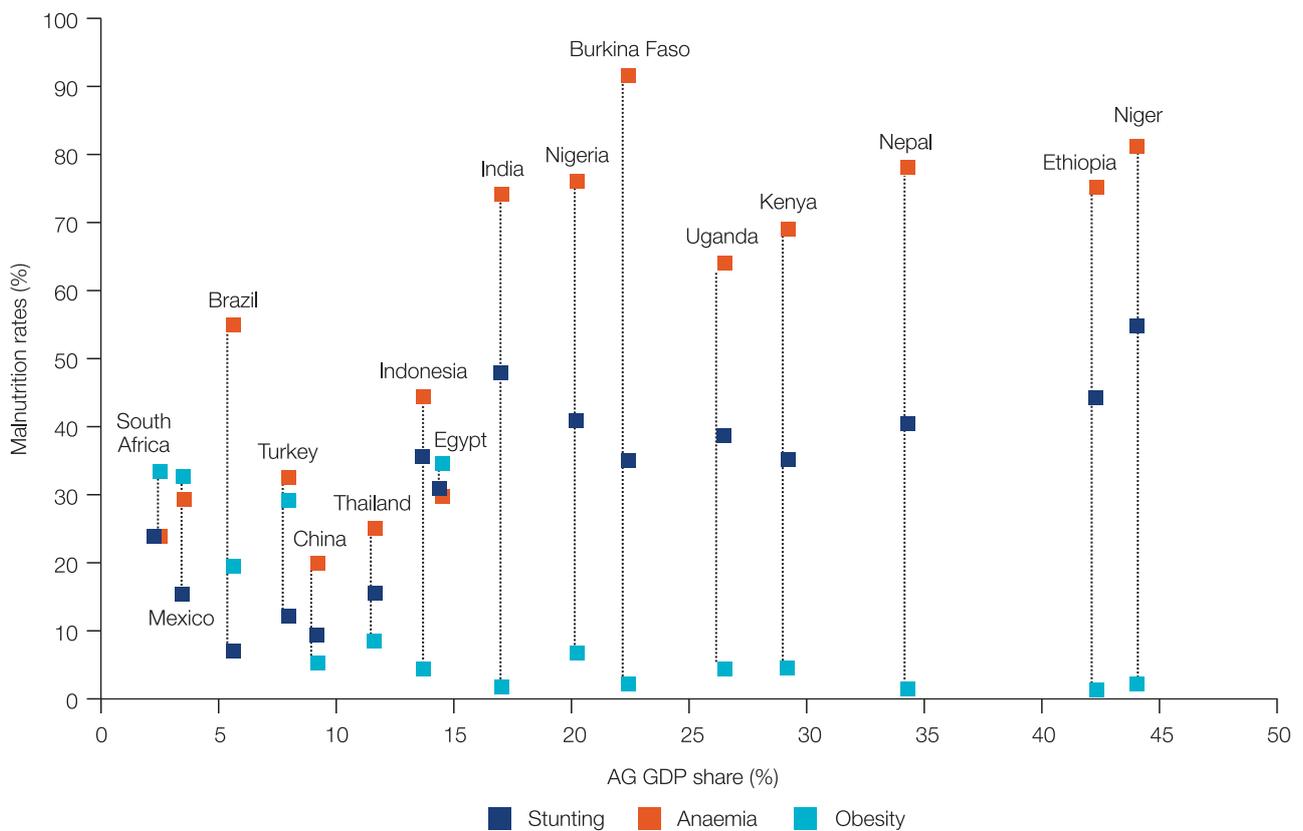
While more data is needed, (Reardon and Timmer 2012), the coexistence of undernutrition, obesity and micronutrient deficiencies in the different contexts, illustrated in figure S6.2, has been linked to several factors.

These include economic and gender inequality, urbanization, rapidly changing consumer preferences, sedentary lifestyles, use of cheap obesogenic foods because of low purchasing power, inadequate sanitation, climatic and socio-economic shocks, and poor targeting and lack of focus on nutrition in food-based safety nets (IFPRI 2015). The countries examined in figure S6.2 exhibit several of these influences.

Despite significant recent progress in cutting undernutrition, stunting and anaemia remain high in the five low-income countries (Niger, Ethiopia, Nepal, Uganda and Burkina Faso). Factors driving these outcomes include inequality, lack of diversification in livelihoods and diets, low purchasing power, lack of knowledge, inadequate sanitation and hygiene, and humanitarian crises (Headey 2015; FANTA 2010).

Stunting and anaemia rates in the five low-middle-income countries (Kenya, Nigeria, India, Egypt and Indonesia) are not significantly below those in the low-income countries, with Nigeria and India doing especially poorly. For Nigeria – where most indicators of malnutrition have worsened recently (WHO 2015) – agricultural stagnation, poor health and sanitation, and lack of nutrition knowledge are critical drivers. For India, culturally rooted inequality and poor access to health and sanitation services are important. Indonesia's high rates of undernutrition and micronutrient

FIGURE S6.2 Malnutrition rates and agricultural share of GDP, 16 countries worldwide



Sources: Shares of agriculture in GDP are from World Bank Indicators 2015; stunting, anaemia, and obesity rates are from FAO 2013.

deficiencies are related to high consumption of processed food, lack of exercise and limited access to healthy foods, especially in urban areas (Shrimpton and Rokx 2013). Egypt's poor scores on all three indicators have been linked to poor diet choices, sedentary lifestyles in urban areas, culture-related body preferences for women and institution and removal of price subsidies for wheat and bread (Galal 2002).

In the six high-middle-income countries (Thailand, China, Turkey, Brazil, Mexico and South Africa), stunting rates and micronutrient deficiencies are half those in the low-middle-income and low-income countries. The exception is the high rate of anaemia in Brazil, reflecting significant "hidden hunger" linked to inequality, undiversified diets and unequal access to crucial services. Turkey, Mexico and South Africa have serious obesity problems. Stunting rates in South Africa are exceptionally high for a country at this level of income and structural transformation (see chapter 3). Thailand and China show strong

performance on all three measures, albeit with evidence of rapidly rising obesity (Ramachandran and Snehalatha 2010).

Figure S6.2 confirms that different forms of food and nutrition insecurity indicate incomplete, uneven and non-inclusive structural and rural transformation (Tschirley et al. 2015). Significant food and nutrition insecurity may also point to a transformation that is at risk of stalling, as the huge costs of malnutrition mount. For this report, however, the more important recognition is that food and nutrition security can be a platform for inclusive and sustained structural and rural transformation.

#### **Nutrition-enhancing food systems for inclusive structural and rural transformation**

Improved nutrition – especially reductions in maternal and child undernutrition – leads to lower mortality and, with a lag, to lower birth rates (Haddad et al. 2015). This yields a "demographic dividend" of healthy and

productive workers available for employment within two decades. Better nutrition leads to better education attainment, which drives technology adoption. Better education also drives up wage rates and incomes (Hoddinott et al. 2008) while higher incomes improve nutrition. A 10 per cent increase in GDP is associated with a 6 per cent decrease in stunting and a 4 per cent decrease in underweight women (Gelli et al. 2015). All of these outcomes affirm structural and rural transformation.

But the demographic dividend and related benefits are not assured. Persistent malnutrition causes outcomes inimical to inclusive structural and rural transformation (Haddad et al. 2015). Large pockets of poverty (and thus also of malnutrition) persist in most low- and middle-income countries. And, as illustrated above, income growth can have unintended negative consequences. A 10 per cent increase in GDP is associated with a 7 per cent increase in being overweight and obesity in women (Gelli et al. 2015). At issue, therefore, is the strength of the nutritional underbellies (or backbones) of the *food systems* that determine the nutritional content of diets.

Food systems encompass the entire range of activities involved in the production, processing, marketing, consumption and disposal of goods that originate from agriculture, forestry or fisheries. Well-functioning food systems perform these functions efficiently and predictably, providing adequate returns to producers, processors and distributors, and delivering safe and nutritious food to well-informed consumers. Food systems also involve the people and institutions that initiate or inhibit change in the system as well as the socio-political, economic and technological environment in which they take place (FAO 2013).

Key elements of food systems can be shaped to enhance household livelihoods more broadly and bring about nutritional improvement (IFPRI 2015). Diversification of food systems is linked to commercialization and specialization, as subsistence-oriented production at the farm level is replaced by greater specialization along intensified crop lines, which itself reflects greater market dependence for the disposal of

output. Food-system attributes that support healthy diets thus span production, marketing and consumption. Actions are both “nutrition-specific” – producing good nutrition outcomes – and “nutrition-sensitive” – improving the general economic, social and political environment (FAO 2013).

### Implications for policy and investment

The policies and investments that strengthen all aspects of food systems include:

- *Production.* Policies should promote availability, affordability, diversity and quality of food; nutrition-oriented research and development; nutrition-rich foods in school and home gardens; and sustainable production methods.
- *Marketing.* Given the increasingly vital role of food companies, regulations and tax policies should promote efficiency, safety and diversity of supply chains, and also innovation in production and transport, especially to cut waste and spoilage.
- *Consumption.* Well-targeted food assistance programmes, appropriate price incentives, nutrition regulation, education for women and information campaigns about better diets are all crucial. These must be underpinned by improved access to sanitation. Publicly held food reserves remain important in many national food and nutrition security strategies.

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## CHAPTER 7

# Rural finance



## Summary

This chapter considers the link between rural finance and inclusive rural transformation. Rural transformation is defined here as long-lasting economic, social and institutional change, where rural societies diversify their economies to high-valued agriculture and non-farm activities, interact and trade with distant places, move from dispersed villages to towns and cities, and become culturally more similar to cities. *Inclusive* rural transformation ensures that conditions are in place for everyone to exercise their economic and political rights, develop their abilities and take advantage of opportunities. It leads to a marked improvement in the economic position and quality of life of small-scale farmers, the land-poor and landless, workers, women, young people, marginalized ethnic groups and victims of disaster and conflict.

*Inclusive financial systems* are critical in such transformations because they offer the capital needed to generate widely based and equitable growth. In transitioning countries, rapid economic growth often coexists with an extraordinary inequality in the distribution of economic gains. Rural financial inclusion is one important ingredient for stimulating local production and processing of commodities, encouraging more intensive use of productive inputs (such as improved seeds and breeding stock), promoting investment in modern technologies and providing financial opportunities to marginalized groups.<sup>102</sup>

Strengthened financial intermediation can provide low-income households with more consistent cash flows and better access to market opportunities, with options for mitigating risks and improving resilience to unforeseen shocks, with mechanisms for securely transmitting payments and receiving remittances at affordable cost and with reliable savings instruments. For rural enterprises, financial intermediation expands entrepreneurial options for aggregation, adoption of improved technologies and other activities that reduce transaction costs and expand value addition.

The corollary is that a lack of access to appropriate financial services is likely to hinder rural development, particularly for the rural

poor. But different transformational paths – and different policies, regulations and public expenditures – affect the degree to which financial systems reduce or exacerbate income inequality. The implications for the outcomes for rural households are direct and profound.

In spite of their importance, and notwithstanding progress during the past two decades, financial systems in developing countries still exclude large segments of rural households. An estimated 2 billion working-age adults globally (38 per cent) have no access to the types of financial services delivered by regulated financial institutions, and 73 per cent of poor people are unbanked (IFAD and World Bank 2015). This amounts to more than half of the adults in the poorest 40 per cent of households in developing countries. Many of these are smallholder farmers and landless workers who rely for their cash flow on agriculture, on low-skilled wage labour, remittances and a few productive assets (such as small livestock holdings), and who often earn little or no income from capital and savings.

How can policymakers ensure that financial development accompanies structural and rural transformation and lessens inequality? Until recently, institutions have concentrated on access to credit and other financial services, which are important determinants of livelihood outcomes. When Chinese and Indian farmers were asked how they would respond to increased credit constraints, around 90 per cent indicated they would substitute family labour for wage labour, about 76 per cent would reduce agricultural inputs, 55 per cent would reduce health care and education expenditures, and 21 per cent of Chinese and 52 per cent of Indian farmers would reduce food consumption. The sale of productive assets would be a last resort (Kumar et al. 2013). Thus not only do credit constraints affect optimal input use, productivity and incomes, but the coping mechanisms that come with a lack of credit have steep impacts on social welfare.

In promoting inclusive rural finance, policymakers and funders must consider the needs of different groups and how they use services. Smallholder farmers, on- and

off-farm micro- and small businesses, female entrepreneurs, young business start-ups and wage labourers each have different needs for financial services, different preferences and behaviours, and specific constraints and risks. In addition to an affordable and reliable credit supply, crucial issues include gaps in coverage of other financial needs – payment systems and remittances, safe and affordable savings and deposits, term or seasonal loans (working capital, advances, etc.) and micro-insurance, all tailored to the diverse financial characteristics of prospective rural clients.

Navigating the links between inclusive rural finance and transformations requires particular attention to the position of informal finance, the dominant source of rural finance in a number of countries. A recent report from the International Finance Corporation (the World Bank's private-sector investment arm) contends that informal financing arrangements are insufficient to enable farmers to access better technologies and agricultural inputs (IFC 2014). Though informal finance has some advantages, such as lower transaction costs and better information, it faces limits in leveraging resources or pooling risks. For example, informal finance is normally unable to offer current accounts, versatile money transfers or risk-management facilities. These limits are costly to small-scale farmers and agribusinesses, checking their ability to compete in larger markets.

The next section presents a brief overview of developments in rural finance since the early 1980s and explains the concept of inclusive finance. The chapter then considers the gaps in outreach of rural finance and its link to structural and rural transformation. The subsequent section presents promising innovations that expand access to financial services, followed by a review of appropriate policies and investments.

### **Conceptualizing inclusive rural finance** **Changes in rural finance since the 1980s**

Since the 1980s, rural finance has shifted from state banks and subsidized credit to a pluralistic system offering a broad range of services. Until the 1980s, support to smallholder agriculture came from state-owned agricultural

development banks using subsidized lines of credit. Few of the development banks were financially sustainable.

As financial sectors were liberalized, most countries retreated from ownership and management of financial institutions and from the provision of subsidized credit. With the demise of most specialized and state-owned agricultural financing institutions – and a growing realization that interest rate subsidies help the well connected more than the intended targeted borrowers – a consensus emerged in the 1990s for liberalized interest rate regimes, reduced support for state banks and cost recovery in financial services provided to poor people. New financing models were sought with increased attention to pro-poor outreach and sustainable interest rates. This was followed during the 1990s by the founding of many microfinance institutions (MFIs), not all of which have been successful.

The more successful MFIs have controlled their service costs and lending risks, integrated with the formal financial sector and adopted more sustainable business models. They stressed developing a wide range of financial services firmly built on savings. In expanding outreach, they extended their client portfolios to lower-income and mainstream rural borrowers and savers, which helped to mitigate risks, but also diffused their intended orientation to poorer households.

Early proponents of externally promoted microfinance focused more on a sustainable supply of microfinance and less on its actual uses. While microfinance initiatives generally defined target groups, institutional development was seen as a goal in itself because it filled a critical bottleneck in inclusive finance. The type of demand and the planned loan use were not the central focus, which was ensuring a reliable incentive structure for repayments. The viability of microfinance thus relied on ensuring incentives for previously excluded borrowers to repay small loans (for example, to improve their future access to financial services) and drew on group-based lending to leverage joint liability as a comparatively effective enforcement mechanism.

Proponents of a demand-centred approach emphasized the difference between what poor people in developing economies may *consider* their need for finance and the portion of the demand for loans and other financial services backed up by *realistic* financial propositions of the applicant (“effective demand”).<sup>103</sup> This view thus continued to emphasize the need for robust demand analysis as normally applied in formal banking services. For example, first generation MFIs, such as FINCA International, ACCION, the Grameen Trust, BRAC and many others, still offer very small and peer-secured loans to small groups, but have developed increasing portions of their credit portfolio to individual small borrowers, who are “graduated” group members, and other micro and small entrepreneurs. For these individual loans, lending policies require an individual loan applicant analysis that takes the intended productive loan use as a major criterion.

The academic perspective on these policy challenges was likewise broadened. Modigliani and Miller’s work (1958, 1963) had sensitized finance practitioners to the challenges of the debt-equity mix for funding firms or other small and microenterprises. Behavioural economics probed household or firm financing strategies that cannot be explained solely through traditional “*homo economicus*” perspectives. Most important, neo-institutional economics brought clarity on mechanisms, beyond price parameters, that incentivize or discourage market participants. The crucial value of information, and of quick and uncompromised access to it, constitutes one cornerstone of this school, which emphasized the role that asymmetries of information and moral hazard play in impeding or compromising financial market optimization. Many recent initiatives are built on the insights of neo-institutional economics, and address challenges related to transparency, consumer protection and moral hazard.

Already in the early 1980s, a new school of economists had started to offer a different mix of analytical tools that emphasized the importance of information and risk, and the need to consider other incentives/disincentives

and market imperfections to better understand the decisions of market participants. Leading proponents, like Stieglitz, identified information asymmetries as a key variable leading to market distortions. They suggested that policymakers should promote transparency and the free flow of information as a pathway to improved credit allocation – better-informed financial institutions serve clients better. Moreover, given the absence of tools to tackle information asymmetries, better-informed village members are often in a position to capitalize first on rural finance services, excluding those who are not well connected and informed.

One approach to redress information asymmetries has been based on the principles used in community-based financial cooperatives of the Raiffeisen type. Ordinary loans, even when high in relation to the debt service coverage ratio of the loan applicant, are assessed locally on the merits of the applicant’s character, capacity, capital and security, and guarantee arrangements that can be put in place by borrowers. Locally managed, founded on members’ savings and extending loans based on informed assessments of each individual loan application, these community cooperatives and credit unions provide comparatively high quality services at lower cost. Indeed, they boast positive track records in many parts of the world. Their main limitations, however, may be in the scale (and scope) of their financial service provision – unless they can leverage complementary actors in the financial sector.

### **Defining inclusive rural finance**

Attention to inclusive finance is rising as policymakers recognize that the earlier focus on *access* to financial services is, by itself, insufficient. Financial inclusion looks beyond access to participation. The IFC and World Bank (2014), for example, use a simple definition – “the share of individuals and firms that *use* financial services” – which is pertinent because of its clarity. The Consultative Group to Assist the Poor (CGAP) Guidelines for Funders define financial inclusion as a state where both individuals and businesses have opportunities to access and use a range of financial services that are responsibly

provided by financial institutions (CGAP 2015).<sup>104</sup>

A significant difference between access and inclusion is the latter's emphasis on *behavioural* features. Potential clients may not have difficulties in access (in opening a bank account or taking out a loan), but may hesitate to use these facilities, perhaps because of risk aversion, religion or information asymmetries. In inclusive finance, overcoming constraints to using financial services becomes an important objective of financial development (Beck and Demirgüç-Kunt 2008; Demirgüç-Kunt et al. 2008). Further, the concept of use also considers the capability of targeted clients to benefit beyond the cost of service provision, as well as the degree (regularity, frequency and length of time) to which clients resort to financial instruments.

Inclusion can be defined as fulfilling *effective* demand – servicing needs that feature a higher financial return than a reasonable threshold cost of service provision. In other words, inclusive finance is concerned only with financial demand that is backed up by the realistic prospects of the applicant. Financial services may not be the appropriate way to support every rural person's livelihood. For the poorest households, a different set of policies and investments is often required, so that they can improve their assets and capabilities. The lower boundary of inclusive rural finance can, though, potentially serve as the upper boundary of social protection. Once households reach a stage where they can generate adequate financial returns to make effective use of financial intermediation, they may no longer need continued support or subsidies from social protection programmes.

New technologies continue to lower the costs of service provision and much work still needs to be done to meet the substantial expansion of effective demand over recent decades. This challenge has only partially been met by microfinance. The Reserve Bank of India's regular sector surveys on debtor behaviour and rural banking density, for example, show a clear trend – demand for term financing at reasonable rates, reliably from the same source, over many cropping seasons and for specific production-

related loans. This trend reflected perhaps a steady move beyond subsistence farming and a gradual integration of the rural population into the cash economy. In response, banking densities increased considerably, and governments in the subcontinent and beyond promoted rural banks and their branch networks.

These sector surveys also show the diversification of demand, especially for money transfer services (for domestic and international remittances). The importance of deposit keeping has also developed. Other financial services that are in increasing demand include cheque and current account facilities, as well as insurance of increasingly capital-intensive and risk-prone farming systems. As small-scale rural producers integrate into domestic urban and international markets, their need for commodity trade and export finance facilities, such as letters of credit, increases.

CGAP, in its most recent exposition of inclusive finance, added quality of financial services as one further dimension of inclusive finance, in a triangular framework (figure 7.1). Quality is assessed by the extent to which financial services are appropriate for the needs of the intended users and to which service provision is sustainable and responsible. Assessment of inclusion, therefore, also requires contrasting outreach with effective demand and with the quality of financial service provision.<sup>105</sup>

## Demand for, outreach and impacts of financial services

### Access and use of formal finance

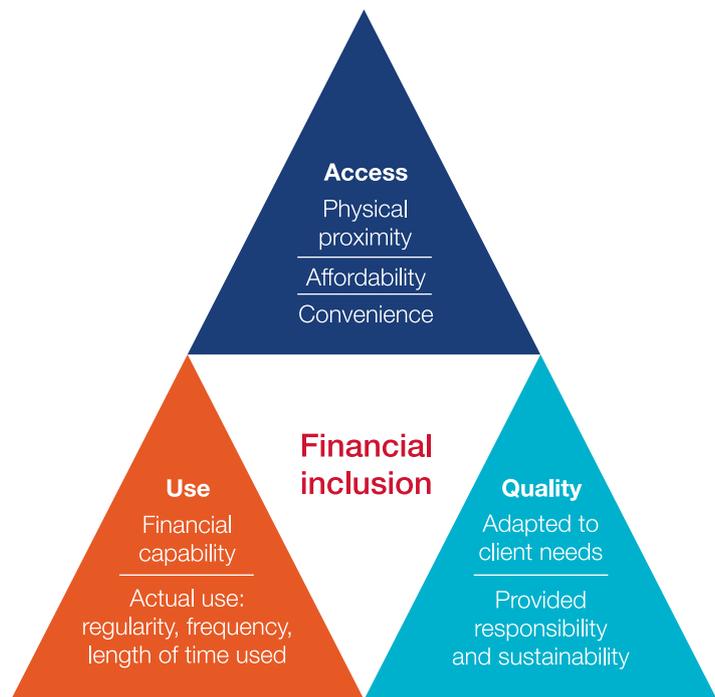
The theory of transformation suggests that as countries change they have greater access to formal financial services. Using an often-used measure of access to formal finance, we find that there are fewer commercial bank branches per capita in countries with higher shares of agricultural value-added in GDP (figure 7.2). Providing a comparative measure of use, figure 7.3 shows the cross-country relationships between the share of agriculture's contribution to GDP and the percentage of all rural borrowers borrowing from formal financial institutions.

The number of ATMs per capita follows a similar pattern; it is higher in countries with

a lower share of agricultural GDP. There is an inverse relationship between agriculture's contribution to GDP and access to formal financial services (see figure 7.3). The data suggest that the share of rural borrowing served by formal financial institutions is higher in countries in more advanced stages of structural and rural transformation. Causality is not suggested, but figures 7.2 and 7.3 indicate that troubling gaps exist.

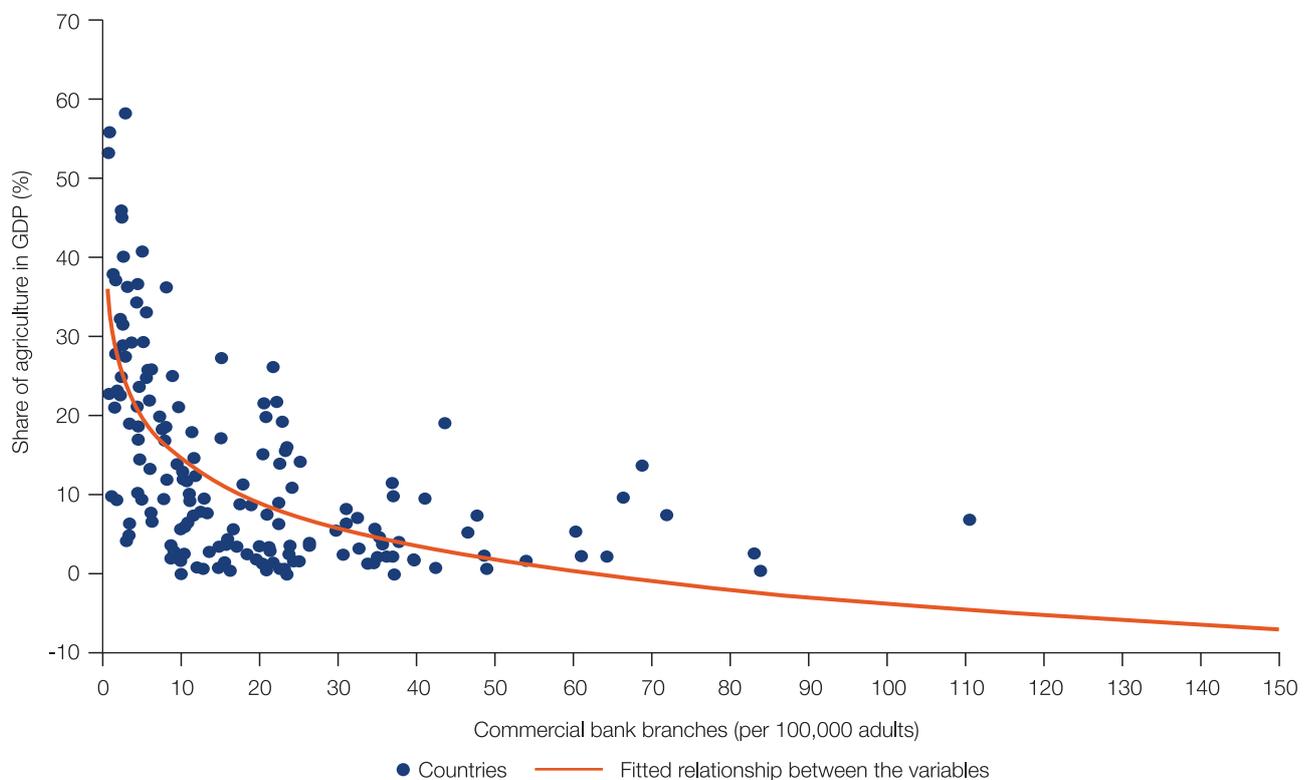
Depicting access and use through national averages is risky, however, as certain segments of society are particularly disadvantaged, an outcome invisible in just rural versus urban access. A study of 200 female farmers in Ghana (Mamudu et al. 2009) found that, while only 26 per cent of rural loans went to agriculture, women reached near-parity within this group (44 per cent). Also, lending to women was higher by volume of agricultural loans granted (54 per cent), though more non-agricultural rural loans went to men (59 per cent).<sup>106</sup>

FIGURE 7.1 CGAP's dimensions of financial inclusion



Source: CGAP 2015.

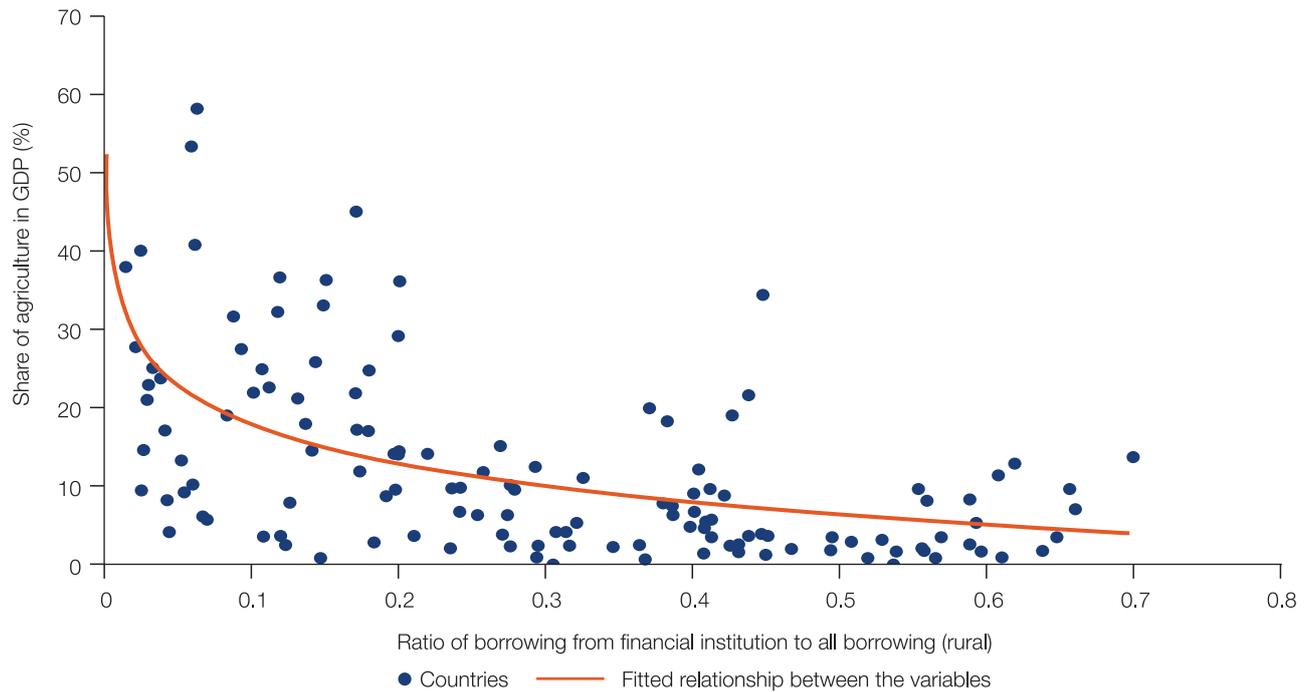
FIGURE 7.2 Bank branches and agricultural GDP



Note: The observations on the variables result in a line fitted to the equation  $y = -7.903 \ln(x) + 32.597$ , where  $y$  is agricultural share in GDP and  $x$  is number of commercial bank branches. The model has a goodness of fit (R-squared) of 0.4605.

Source: World Bank, Global Findex (Global Financial Inclusion Database) 2015.

FIGURE 7.3 Agricultural GDP and rural borrowing from financial institutions



Note: The observations on the variables result in a line fitted to the equation  $y = -7.116 \ln(x) + 1.3631$ , where  $y$  is agricultural share in GDP and  $x$  is number of commercial bank branches. The model has a goodness of fit (R-squared) of 0.2976.

Source: World Bank, Global Findex (Global Financial Inclusion Database) 2015.

But this is only part of the story. Of those women who did not apply for credit, or applied, but did not receive it, a critical barrier was not having a savings account at the rural bank. Thus women (and supposedly men as well) who were not aware of lending processes or who did not have savings were excluded from borrowing. Another factor affecting these Ghanaian women farmers was distance to a rural bank, which highlights how activities such as mobile or agency banking could improve financial inclusion.

It is clear that savings and credits are just one entry point among many for achieving financial development goals. A wider base would include government-to-people payment schemes, small-enterprise finance, digital financial services, remittances and insurance. The need for diversified financial services has expanded rapidly with structural transformation, as evidenced by growing remittances and mobile money transactions. Many countries have huge remittances, 20 per cent of GDP or more in Armenia, Haiti, Liberia, Nepal and Tajikistan. Among the world's 230 million migrant workers,

who sent an estimated US\$430 billion to their families back home in 2014 (benefiting more than 500 million in developing countries), 164 million are from developing countries, almost half of them women (IFAD and World Bank 2015; UNDESA 2013).

#### Changing demand for financial services

The scale of mobile money services shows the growing demand for diversified financial services, particularly payments and remittances. In seven of 11 African countries surveyed by IFAD for use of postal networks,<sup>107</sup> mobile money has become the most often-used channel for receiving remittances.<sup>108</sup> Such digital payments have benefited groups that were long excluded from the formal financial system, such as farmers. Mobile money services present promising opportunities for improving inclusion.

Mobile money transactions have been driven by the private-sector's response to technological innovations. Beyond ensuring appropriate regulations, extensive outreach did not require government actions. Although the

testing of innovations and other research and development can benefit from public funding, the extent and boundaries of new information and communications technology solutions will largely be driven by the private sector. Such market-driven applications are likely to continue to expand outreach, with major implications for financial-system inclusiveness.

Globally, the scale of remittance flows to developing countries surged to US\$430 billion in 2014. Yet this economic engine is largely untapped because the financial sector is not prepared to adapt to the specific needs of migrants and their families beyond offering transfer facilities. A large proportion of remittance receivers remain unbanked or poorly served by regulated financial institutions, particularly in rural areas, which receive 40 per cent of total remittances. Thus remittances (even if usually transmitted through formal channels) are normally associated with informal finance, because of the relationship between the sender and the recipient. Preference for cash-to-cash transactions remains, even though regulations are more stringent and costly for cash operations. The promotion of account-based methods to remit and save money is an important challenge, especially for migrant workers in developed countries.

The IFAD baseline survey found that many different channels are used for receiving remittances. Mobile money is the most prevalent channel in six of the 11 countries (led by Uganda at 93 per cent). Banks are the most frequent channel in Ethiopia (95 per cent), while post offices lead in two countries (Egypt is at 90 per cent) and money transfer operators are the most common in another two. Globally, many migrants (up to 30 per cent of those originating in rural areas) still use unregulated methods to send and save money, in spite of the risks.

The IFAD survey also highlighted that remittances are used primarily for daily subsistence (from 48 per cent in Madagascar to 78 per cent in Senegal), after which come school fees, health bills and emergencies. This illustrates the role of migration and remittances in addressing basic needs and in building human capital,<sup>109</sup> as well as the critical role of

intra-household financial transfers in an era of increased mobility and diversified labour allocation.

Other data sources illustrate important differences in the use of financial services between remittance receivers versus others (IFAD and World Bank 2015). Remittance recipients have regular interactions with financial institutions (to pick up remittances in cash) and a higher propensity to save than non-recipients, yet their informal savings habits and their preference for liquidity lead to low use of formal financial services. This suggests that improving access to financial institutions able to provide at least a transactional account to receive and save remittances could open a door to other financial products and, potentially, build long-term relationships between remittance receivers and regulated financial institutions (box 7.1).

#### **Formal versus informal finance**

The degree and quality of semi-formal and informal finance must be taken into account when considering the role of rural finance in inclusive rural transformation. In many rural areas, informal finance is available and accessible and is often the first point of call. It is generally in the form of low-volume, short-term, unsecured lending and/or money safe-keeping without formal documentation or language and cultural barriers. It primarily comprises friends and relatives, and the borrowers of today can be the lenders of tomorrow. Friendship and family ties can rather effectively provide financial cushions when a small-scale farmer has a sudden emergency or needs funds for small projects on his farm or beyond. In some countries' rural areas, traders, input suppliers and produce buyers may constitute another major informal source of loans.

Effective demand for loans from suppliers and buyers can be high, though supply is often localized and limited. In such cases, the lending transaction is linked with another transaction in the real sphere and thus features lower information asymmetries and credit risks, and leverages attractive internal returns from the purchase transaction. In contrast, informal finance from traditional moneylenders is

**BOX 7.1 Improving access and use of remittances and basic financial services in rural areas**

The Asociación Mexicana de Uniones de Crédito del Sector Social (AMUCSS) is a non-profit organization in Mexico formed by a network of rural financial institutions in regions of high migration. Since its inception in 1992, AMUCSS has linked remittances to financial intermediation in the communities of origin. Linkages have a dual purpose, to enhance access and use of financial services by indigenous families in rural migration areas and to boost remittance investment for development.

In 2008, AMUCSS established Envíos Confianza, a remittance transfer company that operates with 13 of the biggest remittance companies and a network of 68 rural financial institutions with 300 points of payment. In 2013, this mutualized platform was strengthened by Red Confianza, a system linking remittance payments and transfers directly to savings accounts. Envíos Confianza complements this with educational marketing and promotion of debit cards, mobile banking and a rural network of points of sale and financial correspondents.

All told, AMUCSS now serves 30,000 migrant families annually, benefiting more than 60,000 people. It has also reduced remittance transaction costs by about 20 per cent, and helped seven out of every 10 remittance recipients open a savings account, every month mobilizing savings of US\$1.5 million.

Source: AMUCSS 2015.

normally associated with advance funding at high interest and without related transactions.

Community-based informal financial services are at least as important as traders and moneylenders in many remote agricultural areas of SSA and in parts of the Indian subcontinent. Purely informal arrangements comprise rotating savings and credit associations (ROSCAs), systematically described first by Ardener (1964) and later by Bouman (1979). Such associations rotate fund allocation by lot, auction or group consensus. Less common are accumulating informal savings funds, or *chits*.

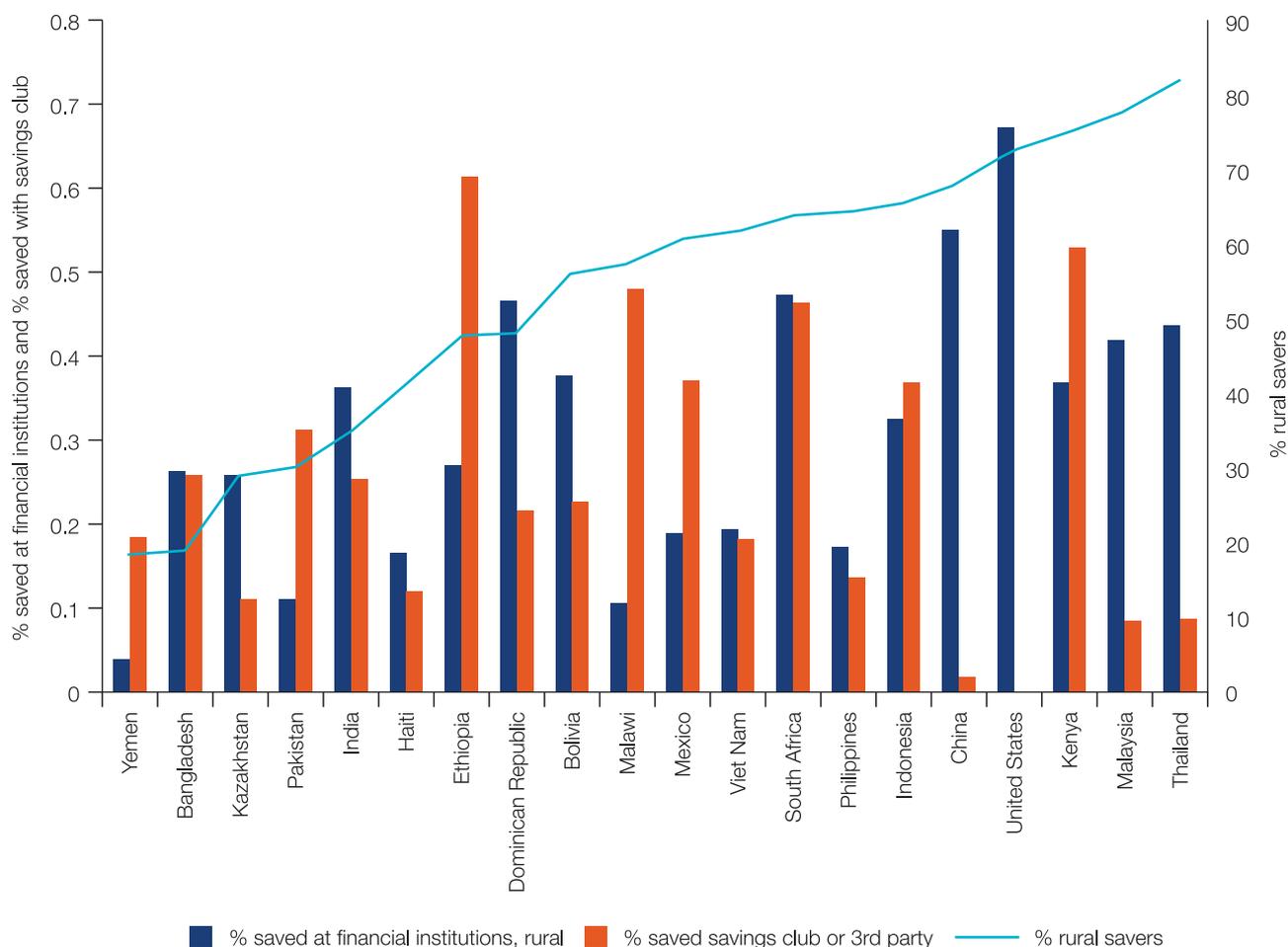
Figures 7.4 and 7.5 illustrate some measures of inclusive finance for a subset of 20 nations. Figure 7.4 shows savings activities at formal institutions and/or savings clubs, such as ROSCAs. It suggests that in the absence of formal institutions, rural households have found alternative mechanisms for savings and borrowing. Figure 7.5 shows equal diversity in terms of sources of credits, with rural borrowing in the Dominican Republic and India relying substantially on informal sources. In many other cases, borrowers relied primarily on friends and relatives. In only five of the 20 countries (Bolivia, the Dominican Republic, Haiti, Kazakhstan

and the United States) is the ratio of loans from family and friends to total loans less than 50 per cent, indicating that family borrowing remains high, no matter what the stage of structural or rural transformation.

Ghate (1990) was the first to systematically analyse and discuss the limits of this expansion of institutional finance versus the existing informal finance systems. He contends that even in highly developed rural economies, informal finance will maintain a certain market share, partly because demand for certain financial services may be too specialized, quickly required, short-term or unsecured to attract formal or semi-formal financial institutions.<sup>110</sup> This holds true in particular for small loans, but also for rural insurance mechanisms, such as the informal funeral assistance societies and similar rapid and flexible arrangements (Ghate 1990; Bouman 1990; Zander 2015a).<sup>111</sup>

The same argument for limits in the transformation of the rural finance landscape is pointedly made by Bouman (1990), who also cautioned against the notion of linkage of formal and informal finance that prevailed at the time. Again for rural India and based on empirical research in the Maharashtra

FIGURE 7.4 Savings mechanisms for rural savings, including formal financial institutions and savings clubs/third-party individuals



Source: World Bank, Global Findex 2015.

sugar belt, he observed that “linkages (with the informal financial sector), whenever they occur, happen automatically and without outside interference to this effect.”

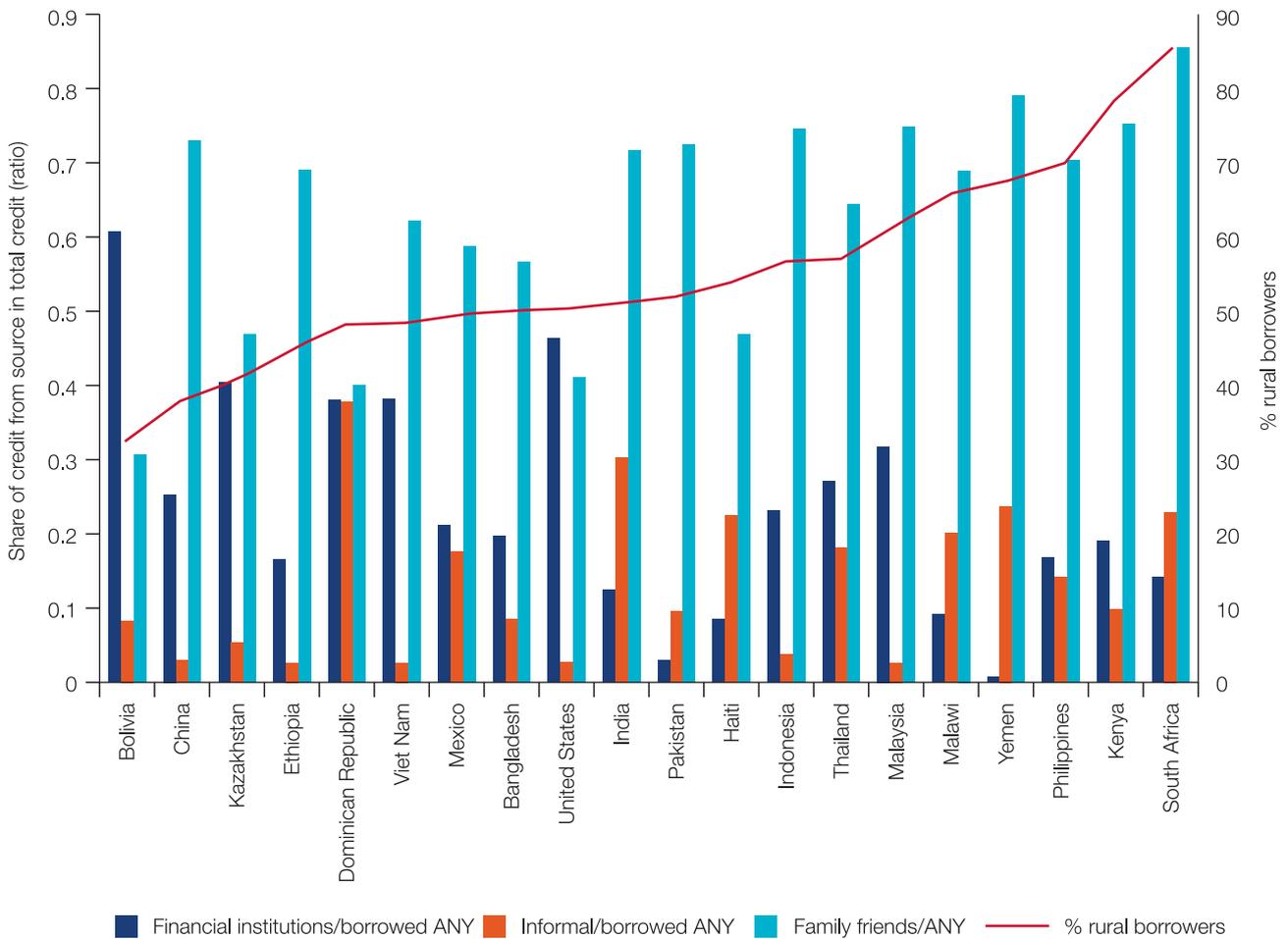
### The multiple impacts of rural finance

When discussing the impact of credit on agriculture, the focus is usually on crop outputs or yields and fertilizer demand. However, at a more aggregate level, agricultural credit and the density of commercial rural bank branches can have positive impacts on agricultural investment, on agricultural and non-farm employment and on rural wages. Indian district data over time are very rich and contain data on all the variables needed for such an expanded analysis.<sup>112</sup>

India has long had a well-developed cooperative credit system that finances crop

inputs and some longer-term investments. After India’s nationalization of the large commercial banks in 1969, the banks were compelled by the government to expand their lending to farmers and agro-industry with targets set both for number of rural branches as well as the proportion of lending to the agricultural sector. Both types of institutions provide subsidized credit to farmers. India also has rich data at the district level for agricultural outputs, inputs and capital, for agricultural prices and wages, for infrastructure variables and for the number of commercial bank branches and the lending volumes. India, therefore, was a good bet for studying the multifaceted impacts of rural finance (Binswanger et al. 1993, 1995). The impacts of the number of commercial bank branches in the district, the total loan volume

FIGURE 7.5 Rural borrowers' credit sources – formal and informal financial institutions, and family and friends



Source: World Bank, Global Findex 2015.

from all commercial and cooperative banks, systems, and the agricultural loans from the cooperative agricultural banks were estimated. Separate equations were estimated for these financial variables on the following dependent variables:

- Aggregate crop output and fertilizer demand
- Investments (tractors, pump sets, draft animals, dairy cows and small stock)
- Agricultural and RNFE and rural wages.

In addition to the financial variables, the equations included a crop price and a fertilizer price index, interest rates and infrastructure and technology variables. The analysis took account of the joint impact of credit demand and credit supply on the amount of credit extended.<sup>113</sup>

The data pertain to a randomly selected set of 83 districts in 13 states for the years 1960/1961-1981/1982. The investment data are derived from the quinquennial agricultural censuses as the difference in capital stocks between census years, which means that they represent net investment. Table 7.1 shows the resulting finance coefficients from the different regressions.

Only statistically significant results are discussed. While cooperative bank credit does not show an impact on aggregate crop output, total rural bank credit does.<sup>114</sup> The impacts of all three finance variables on fertilizer demand and investment in pump sets have large and significant elasticities, varying between 0.25 and 0.46, which imply that both are powerful productivity-enhancing investments. It is, therefore, a question as to why these effects

TABLE 7.1 The multiple impacts of rural finance on agricultural and rural development in India

Dependent variables	Independent variables		
	Predicted cooperative credit	Predicted total rural credit	Commercial bank branches
Aggregate crop output	0.063 (2.38)	0.027 (1.92)*	0.020 (1.37)
Fertilizer demand	0.39 (4.55)*	0.31 (6.67)*	0.25 (6.69)*
Investment in tractors	N/A	N/A	0.14 (1.31)
Investment in pumps	0.40 (3.59)*	0.46 (3.63)*	0.38 (3.61)*
Investment in draft animals	0.14 (0.62)	0.40 (1.56)	0.71 (1.96)*
Investment in milk animals	0.58 (4.34)	0.76 (5.09)	0.52 (2.63)*
Investment in small stock	0.84 (3.60)*	0.76 (5.09)*	-0.16 (-0.42)
Agricultural employment	-0.07 (2.51)*	-0.05 (2.07)*	-0.07 (-2.69)*
Rural non-agricultural employment	0.06 (1.48)	0.24 (5.26)*	0.29 (10.94)*
Rural wages	0.03 (1.34)	0.06 (2.93)*	0.06 (2.01)*

Notes: t-statistics in parenthesis. Asterisk refers to significance of 10 per cent or better on a two-tailed test. n.a. these equations could not be estimated because of multicollinearity. Source: Binswanger et al. 1993, 1995.

are not visible in the output response. It could be that for most borrowers, credit replaces their own resources to finance the inputs and investments. But the small and poor farmers who do not have their own resources would not be able to borrow much from the formal system and thus are not able to contribute to an output effect.

No impact of rural commercial bank branches can be shown on tractor investment, perhaps because it is a long-term investment for which only little credit is available.<sup>115</sup> An important finding is that all three financial variables reduce agricultural employment, which means that the investments financed are substitutes for labour. However, total rural credit and bank branches increase non-agricultural employment, with an effect that is sufficiently large that they lead to an increase in rural wages. An implication of this finding is that landless workers may be able to compensate for the lower agricultural employment via higher wages.

The rich results indicate that rural finance has profound impacts not only on agriculture,

but on broader rural development, including farm and non-farm employment and wages. These far broader impacts are likely to operate via a variety of channels, including credit, savings, payment services and more. This is consistent with the position of this chapter that we must look beyond credit in seeking impacts on rural welfare.

### Innovations in inclusive rural finance and inclusive rural transformation

The past decade has produced a wave of initiatives seeking to expand inclusive rural finance at scale. The innovations described in this section use some of the new tools that address information asymmetries as well as the high costs of extending financial services to agricultural areas. The earlier notion that competitive rural financial markets function effectively, with liberalized interest rates acting as market clearing prices that optimize resource allocation, failed to take into account important information asymmetries. Such information asymmetries include:

- Moral hazard – attracting clients that are less committed to repayment or who may use credit for other purposes than the proclaimed investment.
- Adverse selection – attracting riskier clients.
- Assortative mating – attracting borrower groups formed by the association of individuals excluded from other groups because they are most likely to default.

A substantial body of evidence now shows that the market-driven approach does not, by itself, effectively address access problems or resolve quality concerns.

### **Innovations in agricultural finance**

Smallholder farmers, on and off-farm micro- and small businesses, female entrepreneurs, young business start-ups and wage labourers have different needs for financial services. They have different preferences and behaviours, and their own constraints and risks. This variety calls for a broader outlook on rural finance that goes beyond only affordable and reliable credit supply, to include the expansion of financial needs and to address gaps in their coverage. Such gaps might encompass payment systems, safe and affordable savings and deposits, availability of seasonal loans (working capital, advances, etc.) and micro-insurance, all tailored to the diverse financial characteristics and needs of different prospective rural clients.

The quality of financial products has been affected by information and communications technology, which expanded the scope for increased efficiency and scalability. The internet, electronic data management (covering small and more remote financial institutions) and the increasing use of cell phones have altered the financial landscape of developing economies. Further, structured finance transactions, such as value chain financing arrangements, have emerged as more complex, but well-adjusted solutions to increasingly demanding financing requirements of producers and aggregators. *Sharia*-compliant financing is an important subgroup (IFAD 2015a).

The Rome-based UN agencies have also brought forward knowledge and practical experience of agricultural value chain financing. Their efforts show that analysis of an entire value chain means that important opportunities and constraints, which may not be apparent from single production systems or chain layers in isolation, can now be identified and analysed. Recent studies show that looking at the entire value chain offers insights in to how to leverage finance for inclusive rural transformation and how to strategically address financing needs to fit a value chain (Zander 2015a). Finally, specialized agricultural investment funds were set up to increase the transfer of international investment resources to developing financial sectors (FAO 2010). To date, these funds usually offer equity together with debt finance and technical assistance facilities to agribusiness and larger producer associations.

Examples of product innovations that promote inclusive finance include the introduction of an agricultural finance facility in a Bangladesh apex fund (box 7.2). The example illustrates how a new financial service can open up access to formal term finance to small-scale farmers who previously relied on seasonal and term loans from informal sources. Interventions via apex funds are not the only options. Another example comes from The Gambia (box 7.3).

New work-flow or logistical processes (or their automation), as well as greater transparency to different contractual partners, can help farmers penetrate markets that financial institutions previously considered too costly or risky. Examples include process innovations in agricultural value chain financing that promote security of contract in outgrower and contract-farming arrangements, inventory credit and warehouse receipts. The case of inventory credit in Niger illustrates how innovations can address moral hazard and can reduce costs (working through community operators) to meet effective demand, even under the difficult farming conditions of the Sahel.

Under the inventory credit system, stored inventory acts as collateral, enabling farmers to receive input loans and thus intensify

### BOX 7.2 How to offer term loans to small-scale farmers in a developing country

Although Bangladesh experienced rapid growth in the microcredit sector after Grameen Bank was set up, the sector catered primarily to microenterprises operated by the landless poor. MFIs often required weekly or biweekly repayments in meetings,<sup>116</sup> which were not suitable for farmers seeking to finance their crop season or longer-term investment. The smallholder farming community – 6.4 million small-scale and marginal farmers operating 37 per cent of Bangladesh's agricultural land – had little access to agricultural credit, and were almost completely unserved by sustainable microfinance services.

Recognizing the urgent need for innovations to secure longer-term finance for smallholders, IFAD launched a partnership with a microfinance apex institution, the Palli Karma Sahayek Foundation, to deliver financial services to the farming community through microfinance partner organizations. One initiative, the Microfinance for Marginal and Small Farmers Project, piloted new lending products to small-scale and marginal farmers, notably seasonal loans with lump-sum repayment modalities at crop harvest (10-month loans) and 14-month agricultural sector microcredit products. Loans were complemented with technical advisory services to borrowers, improving the loan portfolio quality of partner organizations.

This partnership reached over 280,000 farmers, 200,000 of whom became active microfinance clients. A total of US\$156 million was provided as microcredit, with a 98 per cent loan recovery rate. Women constituted 84 per cent of the programme beneficiaries. Data from an impact survey showed that annual household incomes increased by 63 per cent, while participating households increased their farm sales by 52 per cent on average, or 25 per cent more than the control group.

After the IFAD project, the Foundation has integrated seasonal loans and agricultural sector microcredit within its core programme, with increasing lending outlays through nearly 270 partner organizations across Bangladesh. Disbursement rates continue to increase, reaching over 500,000 seasonal loans in 2014 with a value of more than US\$93 million.

The Microfinance for Marginal and Small Farmers Project demonstrated that small-scale and marginal farmers could be creditworthy for MFI lending – as long as the loans had farmer-friendly repayment schedules – and that MFIs could become a viable agricultural finance alternative to rural banks and moneylenders. The apex financing facility promoted lending to a segment of the rural population that had difficulty in accessing formal finance with longer-term maturities, now offered by a host of MFIs in the Bangladeshi countryside.

Source: IFAD 2015a

production, where previously they had to rely on informal tontine-type petty cash borrowing. Inventory credit works with a “double key” system to one lock; one held by the farmers' organization and the other by the financial institution, often an MFI (which would refinance its operations with commercial banks) or a small bank or informal lender. Developed in Niger from 1988 with FAO support, inventory credit expanded access to financial resources from farmers able to provide land and cattle as collateral to those willing to put their produce

“under lock and key.” Within 10 years, inventory credit provided financing for about 5,000 tons of grains, oilseeds, legumes and dehydrated horticultural products belonging to around 12,500 farmers.

The inventory credit approach has since been introduced to other West African countries, successfully in Burkina Faso (where in 2013 it accounted for about 3,400 tons of commodities belonging to about 4,000 producers), but less successfully in Senegal, where an initial pilot was discontinued. Indeed, the model's scalability

**BOX 7.3 How to cope with a bumper harvest**

In 2010 the Islamic Development Bank concluded a structured financing deal, which enabled large numbers of produce buyers in The Gambia to access the liquidity needed to market a bumper groundnut harvest. Groundnuts are the country's main export crop and the mainstay of its farming population, which is short of financing in the bank sector to support export facilities. At the government's request, the International Islamic Trade Finance Corporation (ITFC) offered a US\$14 million six-month revolving *murabaha* facility. The Gambia Groundnut Corporation, the state-owned exporter, was to act as ITFC's agent for buying groundnuts delivered by farmers' cooperatives, which it would then sell to buyers in the United Kingdom and France. Payments to cooperatives were made once the Corporation confirmed documentation of warehouse receipts and copies of shipping documents and invoices.

The transaction was set up in a *Sharia*-compliant risk-sharing format, which increased acceptance and was a first for the financial sector of The Gambia.<sup>117</sup> Without this facility, some of the crop would have been left unsold or sold below market prices because of inadequate liquidity of the local produce buyer. Instead, farmers were paid as soon as the documents relating to their deliveries were processed – even faster than under normal conditions.

Source: IFAD 2015a

remains an open question. Even in Niger, the warrantage system seems to have reached full maturity by the late 1990s, after which lending volumes appear to have stagnated. In part, this was due to poor harvests, but also a result of financial difficulties with one of the key lenders and some rigidity in the double padlock system. There may have been other reasons. One leading partner organization adopted another financing model, FAO technical support came to an end and a shortage of warehouses limited absorptive capacity (Coulter 2014). Though the warrantage model has potential to be improved, these constraints highlight the importance of the private sector in leading innovations and local adaptations.

The warrantage system may have a unique place in the rural finance landscape of Niger, but its expansion potential is limited by the implementing capacity and managerial requirements of the financial institution. Warehouse receipt financing and techniques with other collateral substitutes that are easier to implement than inventory credit have shown faster growth than the classical warrantage system. Warehouse receipt financing takes inventory credit arrangements one step further. It automates the registration of the commodities

to be stored, providing small-scale farmer suppliers with pin codes to make their consignments traceable (such as tobacco in Malawi). Or it can introduce connectivity between different warehouses by installing servers in each facility (such as warehousing in Uganda). These and other models for expanding access to financial services also require action on legislation, inspection and supervision of financial institutions, capacity development and national policies to support new channels, processes and products for rural finance.

For agricultural value chain financing – as for other components of rural finance – the degree of inclusiveness and the real value added of different financial services remain uncertain. Some believe such arrangements are unlikely to be suitable for reaching a large number of farmers, but there is also evidence of spillovers and multiplier effects, as in employment, technology, contract farming and externalities. But the difficulty in providing rigorous evidence illustrates, not that the link between rural financial systems and inclusive rural transformation is absent, but that it is multifaceted and complex.

### **Linking formal finance with informal channels to expand outreach**

There have been many attempts to draw on existing informal finance systems for quick and effective promotion of financial services in more remote and difficult-to-access areas. Moneylenders were used as conduits for credit lines from the formal financial sector in the Philippines and Sri Lanka. Value chain financing uses interlinked credit transactions of buyers of agricultural produce and input suppliers, to reach producer associations more effectively in many countries of Latin America and SSA. The Village Savings and Loan Associations, promoted by CARE International and others worldwide, mimic the workings of the informal non-ROSCAs.

An important innovation in inclusive rural finance that draws on informal financial services is agent banking, of which there are a number of different examples. India and Brazil were pioneers in this area, allowing small-scale farmers in remote and inaccessible forest or mountain locations to get essential savings and credit services for the first time. Earlier examples where financial institutions tried this approach individually (and without the necessary legal backup) include Lanexhang Bank in the Lao People's Democratic Republic and the Rural Cooperative Banks in some of China's provinces.

Examples from Kenya and Peru are particularly illustrative. In 2009, Kenya's Central Bank recommended an amendment to the Banking Act to allow commercial banks to use third-party agents to expand outreach and promote financial inclusion. With the help of the Alliance for Financial Inclusion, central bank officers benefited from knowledge exchange visits to Brazil and Colombia, which helped improve their understanding of agent banking models, leading the bank to issue "Agent Banking Guidelines" that took effect in 2010. By September 2011, the new legislation resulted in authorization of 10 banks to roll out agent banking networks, approval of 8,000 agents, the opening of more than 800,000 mobile accounts that leverage the agent banking model and around 3 million new transactions through agents.

In Peru, access to basic accounts was limited, especially in rural areas, because of the high costs. By the end of 2005, there were only 3,700 service points, including branches and ATMs, serving just 21 per cent of the country's districts. Then the Superintendent of Banks and Insurance issued new regulations to enable and expand agent banking. The initial regulations were replaced by a more comprehensive resolution in 2008, outlining the requirements for using this channel and the operations allowed.

In 2013, benefiting from peer learning and knowledge exchange within the network of the Alliance for Financial Inclusion, the Superintendent of Banks and Insurance updated its regulations for banking agents. It clarified the difference between banking agents, agent operators, and agent aggregators (entities that already exist in the market), simplifying the requirements for operating through banking agents and expanding the operations allowed so they can function as cash-in/cash-out points for e-money services. These regulatory changes began to improve financial inclusion. By the end of 2010, the country had 17,488 service points, while the share of districts with access increased to 33 per cent, covering 81 per cent of the total population.

The prevalence of informal finance in rural areas poses challenges for regulators, who need to ensure consumer protection and to minimize risks when informal finance is linked to formal finance. Such prevalence also has implications at the micro level, primarily on limitations in variety, adequacy and cost of financial services from non-specialized sources.

### **Community-based savings and credit organizations**

After Kenya and Peru, a third example outlines the strength of communities and their capacity to build their own proximity-based financial institutions entirely without the help of outside donors. Many rural-based systems of credit and savings systems operate in this mode. Examples stretch from rural Brazil (SICREDI) to Kenya (SACCOs), Poland, Sri Lanka and India.

The Sanasa network in Sri Lanka exemplifies this people-driven approach and the

considerable capacity of financial cooperatives to increase inclusiveness. For many rural households, depositing facilities are offered by the dense network of rural banks, but receiving loans from regulated financial institutions is far harder. The Sanasa primary societies have been filling this gap well. Established as early as 1911, village-based primary cooperatives operate at exceptionally low cost thanks to voluntary management and light overheads. In contrast to informal lenders (who generally use their own capital), these cooperatives advance loans exclusively from mobilized savings at rates and borrowing limits set by the membership. Deposit mobilization and safe keeping are the main financial services provided by these small societies. At district and national levels, Sanasa structures service the technical needs of village cooperatives, including auditing, training and liquidity management. Although the village-level office bearers are volunteers, management skills have come from targeted training programmes of provincial and national umbrella organizations.

The Sanasa network has grown from about 640 cooperatives in the 1980s to more than 8,000, with 1 million members, mainly in rural areas. About 4,000 primary cooperatives are active across the island, most of which continued operating even during civil strife. Close to 1,000 cooperatives operate with an asset base of at least LKR 10 million (about US\$72,000), and 200 have an asset base of more than LKR 100 million (more than US\$720,000). The network has also established an apex bank (Sanasa Development Bank Ltd.), an insurance arm and a training facility.

Such community-based financial institutions provide an important bridge between the financial sector and remote rural village communities. When communities view member-owned and member-managed financial institutions as their own and can fend off unwanted political interference that compounds moral hazard and adverse selection, these systems can remain a first call for services for many decades to come. With low costs and good risk management thanks to proximity, such institutions offer long-term viability for rural markets.

### **Helping rural households make effective use of financial services**

The earlier study on the use of financial services in Ghana underscores the need to investigate borrowing behaviour and to develop financial education programmes for borrowers and lenders. This and other research and analytical insights on the behaviour of market participants have helped explain financial exclusion and shown that such exclusion in rural areas is not restricted to limited access of formal financial services.

The Soro-Soro Ibaba Development Cooperative (SIDC) in the Philippines demonstrates how migrants and their families could be supported to achieve financial goals and successfully invest back home by combining certain activities, such as financial literacy programmes, followed by financial products and investment avenues (box 7.4).

### **Including the poorest**

The above examples focused on providing access and services to excluded rural households that exhibit effective demand. But many studies have shown that microfinance rarely reaches the poorest. So what of those households whose livelihoods are too meagre to generate sufficient revenues to cover even cost-effective and relevant financial services?

One avenue has been to strengthen the livelihoods of such households through asset transfers, training and coaching. Often termed *graduation approaches*, they seek to provide a push that may not bring households out of poverty, but can help them secure productive livelihoods and generate greater income.

Recent assessments of them include randomized control trials in six countries that provided some of the poorest households with a productive asset grant, training and support, life skills coaching, temporary cash consumption support and access to savings accounts and health information or services (Banerjee et al. 2015). Trial results show that graduation programmes had positive effects on treatment groups across a range of outcome areas, with the most significant effects on household incomes, financial inclusion and household assets. The incomes of the

**BOX 7.4 The importance of financial education**

Between 2010 and 2012, IFAD financed a pilot intervention, run by Atikha, a Filipino NGO that supported Filipino workers in Italy to invest collectively in their home province through a cooperative group – SIDC – set up in 1979.

Initially, remittance recipients and their families attended financial education seminars, with an emphasis on nurturing savings. Migrants were thereafter given the option of investing in SIDC, which in turn pooled migrants' and families' resources to finance a sustainable poultry cooperative. Investment in SIDC required membership subscriptions for migrants and their family members at home, at a cost of €25 a share, and a minimum contribution of €1,800 over one year (€150 per month). Although the investment is frozen for five years, it provides an annual return of 6 per cent plus dividends based on annual performance.

In total, 1,100 overseas migrants and families invested US\$250,000 through SIDC, and around 600 people in rural areas received business and skills training. To date, the SIDC credit cooperative has provided more than US\$1.3 million in loans, serving 600 beneficiaries with average loans of US\$2,200. Having established a profitable market position and gained the trust of migrant investors and their families, the cooperative is now pursuing an expansion strategy to open to further market outlets.

Source: Atikha 2015.

treatment groups were significantly higher than the controls in every country, while household consumption was higher in every country except Honduras. Though they are lower one year later, household income and financial effects remain positive and significant, indicating that benefits have been sustained in the short term. The effects of per capita food consumption and food security remain at similar levels one year after the project's end, and are thus relatively more sustainable.

The findings suggest that graduation approaches are effective in helping the poorest households improve their self-reliance and gradually increase their income. Thus graduation strategies complement financial services by assisting the poorest in moving out of poverty, so that they may be able to make better use of other financial services.

#### **Options and opportunities to expand inclusive financial services – impact measurement**

The impacts of the different models used for achieving financial inclusion are not yet supported by conclusive empirical evidence – microfinance and graduation approaches are the only areas with rigorous evaluation. The

following examples *illustrate* that governments, civil society, financial institutions and funders can support financial inclusion, as in the case of agent banking regulations adopted by the central banks of Kenya and Peru. The efficacy of these innovations in changing outcomes has not been rigorously evaluated, nor the degree to which they improve the lives of poor farmers.

Evaluation of microfinance and graduation approaches has found that, while microfinance has varied benefits, take-up rates were more modest than expected and few of those who took up microcredit achieved a transformative impact, whether in household income, consumption, poverty reduction or business growth (box 7.5). There is also some evidence that borrowers substitute other forms of borrowing for MFI loans, but scarce evidence that micro-borrowers are able thereafter to use other sources of credit. Graduation approaches, conversely, as seen, have shown that grants to the poorest, with support services, can have a significant positive and sustainable effect on household income and consumption.

**BOX 7.5 Findings of randomized control trials on microfinance**

A randomized control trial of agricultural lending (Beaman et al. 2014) illustrates spatial diversity that goes beyond household-level exclusion or rural-urban disparities. The study investigated the relationship between binding liquidity constraints at the village level and credit demand among Malian farmers. It provided cash grants to unbanked villagers in communities without access to credit and, in communities with access to credit, randomized similar grants to borrowers and non-borrowers alike.

The proposition was that in the presence of liquidity constraints, the investment returns from a cash injection in unbanked villagers would be higher than those in banked communities. This would be the case if, in the banked communities, borrowers had already self-selected into the credit market to exploit higher average returns and had to invest the grant in a lower-productivity proposition. Villagers who had achieved their respective opportunities for higher returns on investment through savings or other means, would not borrow. Accordingly, the hypothesis was that farmers in banked communities did not face the same liquidity constraints as those in unbanked communities.

The findings show that relaxing liquidity constraints in unbanked villages induced a small increase in labour and cultivated land, but increased the use of fertilizers by 14 per cent and of chemicals by 19 per cent. This investment response was not found in banked communities, suggesting that, because credit was available and used or not used because of alternative sources of liquidity, farmers were already optimizing input use relative to areas with low borrowing options.

This suggests that rural Malian banks have been effective in providing liquidity that increases returns in those areas where they are operating, that restrictions in access or use of rural financial services have constraints on prospective borrowers and that the improved liquidity has positive spillovers within a village.

Source: Beaman et al. 2014

### Strategies, institutional changes and investments

To move the financial inclusion agenda forward at the macro level, the G20 group of countries in 2010 formed the Global Partnership for Financial Inclusion (GPI) and adopted nine basic principles<sup>118</sup> for innovative financial inclusion (GPI 2010) – for all economies, not just developing ones. This conceptual framework of the GPI reflects the need for a more resilient global financial system that fosters growth and confidence. The thrust since has been on concrete commitments for policy measures to stimulate financial inclusion,<sup>119</sup> with a focus on innovation and on collaboration with the private sector.

A first action plan was put in place in 2010 – still reflecting the “crisis mode” that influenced the original creation of the GPI after the financial crisis of 2008-2009. The second

Five-Year Financial Inclusion Action Plan (2014-2019) was subsequently prepared, advocating responsible market development that balances improved access to financial services with stability of the financial system. It identifies 10 action areas in different segments (box 7.6).

With the GPI and specialized implementing partners, such as the Alliance for Financial Inclusion, progress has been made in pursuing policy targets and achievements at the macro level (GPI 2014). Further, the work of the G20, GPI and the Alliance has resulted in a notable shift of initiatives to support financial inclusion towards the actors at the sector level – ministries, central monetary authorities and other standard-setting bodies. The examples cited above show that enabling regulations and flexibility towards developing retail and rural microfinance marketplaces can improve access to financial services. But the opposite also

**BOX 7.6 GPFI 2014-2019 Financial Inclusion Action Plan – four action areas, 10 action targets****SME finance**

1. Accelerate and replicate successful policy reforms to expand financial services to SMEs
2. Establish the SME Finance Forum as a global centre for knowledge exchange and promotion
3. Improve financial access through the SME Finance Compact, SME Finance Initiative and key development achievements

**Regulation and standard-setting bodies**

4. Mainstream financial inclusion in the work of standard-setting bodies and other relevant global bodies and increase understanding of the interdependence of financial inclusion, stability, integrity and consumer protection
5. Encourage consistent incorporation of inclusion in financial sector assessments

**Financial literacy and consumer protection**

6. Improve the capacity of public authorities and other stakeholders to develop and implement financial literacy and consumer protection measures
7. Promote consumer protection and financial education good practices for digitally delivered financial products and services

**Market and payment systems**

8. Consider ways to address the money transfer operator bank account closure
9. Reduce the cost of sending remittances
10. Expand opportunities for innovative technologies

Source: GPFI 2014.

applies. Where central banks have tightened regulations too strongly they can choke a thriving rural microfinance sector, as the case of Bolivia shows. Similarly, steep increases in minimum capitalization threaten to push many of Tanzania's Community Development Banks out of business.

Strategies for increased access, better financial services and improved financial inclusion for all income segments can be pursued at three different levels in the financial system:

- The micro level, where clients and their financial institutions operate
- The meso level, where sector-wide financial infrastructure is put in place, including credit reference facilities and professional associations
- The macro level where governments enact legislation and create supervisory bodies (IFAD 2009).

Successful models are likely to be as varied as there are countries and implementation environments. None of the new developments,

innovations or institutional vehicles has so far been universally successful, and promising practices and experiences are context specific. But these efforts are greatly helped by proper financial management and functioning supervisory structures, by experimentation and continuous adjustment to new circumstances and by a proper reporting and impact assessment system.

National policies that set concrete financial inclusion targets are instrumental in increasing rural financial inclusion, in particular if these policies are accompanied by the introduction of new institutions with better reach to more rural people. But the formulation and fine-tuning of strategies and policies for improved rural financial inclusion need to be based on a sound analysis of access and financial inclusion at the level of the client – the smallholder farmer and other rural clients with their diverse needs.

Much still needs to be done to improve the inclusiveness of financial services at the sector level, particularly with national standard-setting bodies as the key collaborators. When facing

specific challenges, such bodies are usually left to their own devices. How can optimal capitalization levels for single-unit rural banks be determined? Up to which asset or turnover thresholds should credit-only MFIs remain unregulated? How should gross earnings of financial cooperatives be treated in a country context? These are just a few of the issues that need to be identified and addressed by policymakers and external financing institutions.

Another dimension is the community. Here it is important to assess the prevalence of informal and semi-formal financial services and their sensitivity to changing conditions. Informal lending may be penalized by usury codes and financial cooperatives may be hampered in their reach by inconclusive laws or regulations.

At the level of financial institutions, meso-level innovations need to be directed towards better management of three key business areas – appropriate services for different client needs (such as farmer loans in the Bangladesh example), service costs and client- and transaction-related risks. There is no general formula or silver bullet for adequate institutional development paths and blueprints rarely bring the required results. The state should not intervene directly in financial service provision, but it has a very important role in creating the enabling framework for it.

Much needs to be done at the macro level, particularly fostering more inclusive and client protection-oriented legislation and implementation guidelines for the inspection, audit and supervision of financial innovations such as agency banks, or entirely new rural finance institutions, such as single-unit rural banks. Central banks face the challenge of balancing financial stability with inclusive financial innovation (BIS 2014). Examples differ widely among countries and often also within different periods within countries. Bolivia regulated the financial activities of MFIs very flexibly in the past, but has now become more stringent. Bangladesh has established a separate supervisory authority for microfinance. Much of the success of savings and credit cooperatives in Kenya and Rwanda is due to delegated supervision responsibilities for their activities. A useful rule of thumb is to regulate large financial mechanisms, leaving smaller ones to be managed by local stakeholders.

The example of the Central Bank of Nigeria (CBN 2005) illustrates how this process can be managed domestically without external donors. When domestic agencies are in charge of policy formulation processes, results are more likely to be better tailored and country specific (box 7.7).

#### BOX 7.7 Central Bank in charge of the Nigerian Microfinance Policy

A consultative process between the Central Bank of Nigeria on the one hand, and Nigerian MFIs, commercial banks, the wider NGO arena and donors on the other, drew up a Microfinance Policy. It involved several drafts and took five years. It was issued in December 2005.

It provides a uniform development path for the network of community banks and the still informal majority of MFIs. MFIs can remain small and stay unregulated, or can change into microfinance banks with a minimum capital and supervised by the central bank, like all other formal financial institutions in Nigeria.

Larger MFIs had to increase their transparency with ownership patterns that are clearly defined and bring both privileges (dividends and election rights) and responsibilities (for internal supervision and board representation) with them. The trend of treating MFIs just like any other actor in the financial markets and having them supervised by the central bank, therefore, increases their overall exposure and reduces their insulation from financial sector trends, such as interest rate changes and systemic risks (through bank closures, etc.).

Source: IFAD 2016.

## Conclusions

The challenges facing rural finance are always changing. While transformation shifts the effective demand curve for financial services, the provision of inclusive rural finance is itself a catalyst that supports rural transformation. Inclusive financial intermediation expands the ability of rural households to capitalize on emerging opportunities and spurs rural growth.

Adaptation, a client-oriented approach, and innovation can make the difference for financial inclusion and institutional robustness, especially in remoter agricultural environments. The key level of intervention remains the micro level, where innovations in financial services can increase inclusiveness. Stiglitz (2011) states that government not only has a restraining role in ensuring strong financial regulations, but also a constructive and catalytic role in promoting entrepreneurship, providing social and physical infrastructure, ensuring access to education and finance, and supporting technology and innovation.

Most innovations to increase the inclusiveness of rural finance are still made at the level of these key actors – the financial institution (supply side) or the client (demand side). But as the examples show, other stakeholders play important roles – rural communities, local and national governments and their different departments, and the private sector. The examples illustrate the wide scope for external supporters to foster inclusive rural finance. But domestic governments, rural people, organized in communities, and different types of civil sector actors are in the front seat whenever promising innovative practices are introduced and propagated.

Fully inclusive rural finance systems can be promoted by external funders and agencies, but will eventually depend on the initiatives of governments and the agility of different types of financial institutions. IFAD and like-minded partners, therefore, assist in developing and strengthening these systems, rather than trying to run them. On this, this chapter illustrates some key principles:

- Provide broader and more holistic policy advice to manage inclusive rural finance within rural transformation.
- Strengthen the financial capability of rural women and men to support their long-term productive capacity.
- Ensure that financing is delivered in a timely and strategic manner.

Some examples showcase the wide range of different support roles that international agencies can play when supporting inclusive rural finance. In each case, governments and people on the ground received support from international agencies in a listening and partnership role. Even in acute crises, international partners should support, but not manage, development processes. Specifically, with respect to rural finance, policymakers and financiers are well advised to consider the following lessons:

- A forward-looking research and academic agenda needs to acknowledge inclusive finance and its interrelations with the wider process of rural transformation.
- The analytical framework of inclusive finance follows a holistic approach. Research and evaluations need to be tailored to fit its broader systems and locally driven dimensions.
- Rigorous methods have been used to assess microfinance and graduation approaches. Other models and approaches still require careful investigation and research.

There are important new entry points for supporting inclusive finance, such as remittances. Leveraging them towards provision of other (additional or new) financial services represents a unique opportunity to create a convergence between the financial goals of millions of remittance senders and receivers, mostly unbanked or under-banked, the commercial strategies of traditional and emerging financial service providers and international development goals. To capitalize on this opportunity, migrants (and their needs) have to be better understood,

and offered finance and investment options that fit their profiles. Whether through remittances, savings or investment, migrant workers possess a powerful set of instruments to change their own lives and the lives of those back home.

Graduation approaches have sought to improve the livelihood outcomes of the poorest – who are almost always financially excluded and likely to continue to be so – with targeted grants. There is no intent to use financial services for this group, and perhaps there should not be, as microfinance and other financial services tend to benefit better-off groups. Yet graduation approaches have shown a scope for bridging purely social protection activities on one side, and livelihoods, microfinance or microenterprise development work on the other.

These approaches are, however, very demanding of institutional capacity, and coaching and support services. To successfully engage in this type of programme, governments and development agencies will have to adopt dynamic and entrepreneurial solutions that rely on strong partnerships involving capable organizations from the private sector and civil society.

Further, while the mix of activities that constitutes the graduation model seems sufficient to achieve positive results, the randomized controlled trials discussed did not control for the individual contribution of each component of the model nor the contribution of subsets of these components. This lacuna suggests that more research is needed to identify the requisites for scaling up the graduation model, especially if it requires lower-cost alternatives to be identified.

Finally, while there is room for scaling up several of the innovations described earlier, the empirical evidence of success and lasting impact of many initiatives is mixed. Aside from trials on microfinance and graduation approaches, contributions to wider rural transformation processes are even harder to prove empirically and require similarly rigorous impact analysis.

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## CHAPTER 8

# Agricultural technology innovation



## Summary

How does agricultural technology innovation (ATI) support structural and rural transformations to deliver widely shared benefits in rural areas? How does it contribute to making rural transformation more (or less) inclusive? What are the key strategies, policies and investments that can enable ATI to support inclusive rural transformation while avoiding adverse effects? This chapter tries to provide some answers, initially by arguing that the two transformations hinge on boosting the productivity of the agrifood systems that underpin most rural livelihoods. Productivity growth is an outcome of multiple interacting factors, tied to development, technologies and practices, reliable outlets for generated surpluses, institutions and policies, and investments that strengthen capacities. The key to success is innovation.

The chapter focuses on what drives or impedes innovations in agricultural production technologies. Its analytical framework is based on the concept of an 'agricultural innovation system' – a network of organizations, enterprises and individuals bringing new products, processes, and forms of organization into economic use, with the institutions and policies that affect their behaviour and performance.

ATI is crucial for inclusive rural and structural transformations. With growth linkages, surging agricultural productivity can kick start them, as Asia so dramatically showed in its Green Revolution. Even though framing conditions have changed since, governments seeking to spur rural inclusiveness still need to raise agricultural productivity to support the two transformations.

The most suitable technologies for the pair depend on context-specific conditions, which often change over time. ATI is only inclusive if smallholders can adopt and adapt technologies on a large scale – with challenging physical conditions and pervasive institutional and market failures, inclusivity is far from automatic. Governments and development partners must help create the environment for appropriate incentives for smallholders to do this, and should focus on increasing access to finance, inputs, extension services, and output markets.

Once collective institutions like farmers' bodies have strengthened their organizational capacities, they can confer benefits tied to improved access to many of these products and services. Along with rental markets, these bodies can also help make available to their members "lumpy" technologies like tractors and other equipment. Finally, risk management strategies are essential to avoid poverty traps when small farmers adopt new technologies. Special attention must be paid to rural women: there is no such thing as inclusive rural transformation that leaves them behind.

Some agricultural technologies – such as genetically modified (GM) crops – stir up political and social controversy, often driven more by ideology than scientific evidence. But still lacking is an institutional pathway for filling the delivery gap for GM crops for the bulk of the world's smallholder farmers, so that genetic engineering is unlikely soon to be an important source of inclusive ATI in developing countries.

Innovative instruments for developing and disseminating technology, including information and communications technology (ICT), index-based insurance, and "smart" subsidies, may offer new prospects for creating the right environment for smallholders, but the effectiveness of these approaches needs to be carefully evaluated, first. Some experimental studies are promising, but the governance challenges in scaling up these instruments must be reckoned with, as the experience of elite capture in new models of fertilizer subsidies shows. Structural and institutional factors that impede inclusiveness must be addressed if these innovations are to yield their full potential. Viable business models for many of the innovations are yet to be developed.

Countries need to integrate environmental sustainability with their agricultural innovation strategies and develop regulatory mechanisms to mitigate adverse effects. Strategies include investing in farmers' knowledge through, for example, farmers' field schools and ICT, as well as adopting incentive schemes such as payments for environmental services.

To make the best use of technology, evidence-based policymaking should be followed, but it

requires capacity to be developed in agricultural research organizations and ministries' planning units. Participation by farmers, rural women and disadvantaged groups is equally important in crafting policy. Farmers' organizations need their capacity strengthened, an area in which IFAD has played an important role.

Given the wide geographical, economic and institutional range of agricultural innovation systems, political economy and governance challenges are inherent in efforts to promote ATI. The design and implementation of inclusive agricultural research and extension systems are therefore fraught with difficulty. However, with strong political commitment, basic governance problems can be tackled, especially if voice and accountability are expanded through reforms that empower farmers and other stakeholders to demand better services and hold service providers accountable. Development partners can assist governments in identifying, financing and evaluating promising reform strategies.

Truly inclusive solutions are by nature context specific, and "winning" strategies vary by country, but common to all are measures that identify and tackle first-order obstacles that block self-sustaining growth, which should be fuelled by technological advances in agriculture. In much of the developing world, the bulk of these obstacles are found in smallholder agricultural production and trade.

### **Inclusive innovation**

Inclusive ATI features development and dissemination of technologies and practices that boost yields strongly and sustainably, are amenable to adoption by a wide range of farmers of both genders and different localities, and are affordable and easily accessible, ideally through well-functioning markets. Inclusive ATI also features similarly well-functioning markets for farm outputs. The policy instruments and strategies to promote such ATI are therefore well known.

However, countries differ considerably in sustaining ATI. Why? This chapter uses three further questions to tackle this overriding query:

1. How does ATI support processes of structural and rural transformation?

2. How does it contribute to making rural transformation more (or less) inclusive?

3. What are the key strategies, policies and investments that can enable ATI to support inclusive rural transformation while avoiding adverse effects?

A substantial body of knowledge and experience exists for questions 1 and 2, ranging from the classic work of T.W. Schultz (1953, 1964, 1979) to more recent publications, such as the World Development Report (WDR) 2008 (World Bank 2007), the IFAD Rural Poverty Report 2011 (IFAD 2011) and the fast-expanding body of evidence published by the Agricultural Technology Adoption Initiative.<sup>120</sup> This chapter summarizes the central findings from that work, supplemented by new evidence on emerging opportunities and challenges. In some cases, long-held principles are affirmed. In others, new insights are identified.

Evidence to rigorously address question 3 is thin by comparison, yet this is arguably the most important of the three. If the ideas, experience, analyses, policy recommendations and (for the most part) positive effects on growth and inclusion of technology innovation are all well established, why is it that structures and systems needed to jump start and sustain broad-based processes of ATI are still lacking in so many countries?

A key argument is that structural and rural transformations that deliver widely shared benefits in rural areas hinge on boosting the productivity of the agrifood systems that underpin most rural livelihoods. Productivity growth is an outcome of interacting factors including level and speed of development, adoption of improved technologies and practices, reliable outlets for surpluses, institutions that mitigate risk and provide incentives, and investments that strengthen key human, physical and institutional capacities. Key to success is innovation – defined here as a "new product, process, service or management approach that is adopted at a significant scale" (Pyburn and Woodhill 2015, p. 10). Adoption at scale distinguishes an innovation from an invention.

### BOX 8.1 Kenya's smallholder dairy commercialization programme

Science and research continue to develop technologies for enhancing livestock productivity. The use of exotic breeds has enabled genetic improvements to accelerate, while biotechnology has led to more cost effective health care. Various additives and supplements have been identified to accelerate weight gain, increase digestibility of feedstuffs or reduce the amount of feed required. Artificial insemination has been supplemented by other techniques for herd improvement, while advances in herd health management have cut medication expenses and increased efficiency. Mechanical technologies allow for electronic monitoring of animal performance, feeding and environment.

Although the use of these and other technologies has upgraded livestock productivity in developed countries, yield gaps between current and potential productivity in developing countries remain high, up to 130 per cent for beef and 430 per cent for milk – considerably greater than yield gaps in crop-based farming systems. Feed deficits mean that many animals only reach 50-70 per cent of their genetic potential. Similarly, animal diseases regularly lower productivity, causing up to 20 per cent of mortality in young animals.

The IFAD-funded Government of Kenya's Smallholder Dairy Commercialization Programme (SDCP) illustrates the opportunities for smallholder farmers to increase livestock productivity through the application of science-based improvements in animal feeding, breeding and health. Traditionally, smallholder dairy producers do not generate adequate quality and quantity to access commercial dairy markets. They are often obliged to sell limited amounts to informal local traders, generating low profits and remaining trapped in a low-input, low-output cycle. Aggravating the relative transaction costs, a SDCP study showed that more than 2.5 million litres of milk were lost per year in the programme area, attributed to poor road networks especially during the rainy season when milk production is at its highest.

Launched in 2006, SDCP promoted Dairy Commercialization Areas (DCAs) and dairy marketing cooperatives to better meet the growing demand for quality milk products. The DCAs, clusters of 800-1,200 dairy farmers, are community-driven organizations that were supported to set development plans for the dairy value chain in the target area. SDCP supports the action planning process with dairy analysis, surveys and value chain mapping. To ensure inclusive benefits, SDCP assisted smallholder dairy groups in developing their Dairy Enterprise Plans, which facilitated the integration of farmers' priority needs in the DCA Action Plans.

The action plans combined market access issues with application of improved technologies. Based on the latter Action Plans, DCAs negotiated with their county governments the necessary investments in rural roads and dairy cooling facilities. A total of 2,000 km of rural roads were rehabilitated and 10 milk bulking and cooling facilities installed in the programme area.

Reliable access to markets was one important ingredient for inclusive rollout of improved technologies. SDCP also improved the outreach of livestock extension agents, providing more consistent training and advisory services to smallholder farmers, and verifying the quality of private technical services. A number of improved technologies were promoted to support farmers in upgrading dairy production. More productive breeds, better animal husbandry (such as hoof trimming, dehorning/disbudding and castration) and animal housing (such as zero-grazing units), forage and feed management technologies, animal registration and assessment, artificial insemination, vaccinations, rearing of replacement stock, rain water harvesting, cooling and bulking equipment, and use of small labour-saving equipment (feed mixers, biogas units and chaff cutters) all supported dairy farmers to pursue higher productivity and value addition.

Furthermore, community resource persons offered special inclusion-oriented services, such as animal registration, mentoring younger farmers and the application of household methodologies in



gender mainstreaming (see Spotlight 5). Finally, knowledge sharing was supported through study visits that were driven by dairy groups' identified needs, covering such areas as the use of sexed semen for faster upgrading of animals, dry matter feeding systems, control of East Coast Fever and use of silage bags for fodder conservation.

Technological improvements reduced the production cost per litre of milk and improved milk hygiene. Diseases dropped by 60 per cent while incidence of vector-borne diseases decreased from 21 per cent to 10 per cent. Labour-saving technologies and micro-processing equipment increased value addition, including in yoghurt, ghee and butter production. Smallholder dairy farmers were thus able to intensify production and improve quality and sales. The area under fodder crops expanded from 11,000 to 30,000 acres and productivity increased from an average of 4 litres per cow per day to 12 litres, while the average production costs dropped by 25 per cent. Almost 100 small-scale feed mills were established by dairy groups and 80 dairy group bulking sites have transitioned into fully commercialized sites that are adding value to crop residues. About 21,000 jobs were created and over 120 million litres of milk marketed, up from 27 million litres. In terms of value, marketed milk increased further, from KES 1.6 million per annum to 25.8 million.

Source: IFAD 2015.

The chapter focuses on innovations in agricultural production technologies, asking what drives or impedes them.<sup>121</sup> The analytical framework is based on the concept of an "agricultural innovation system," defined as a network of organizations, enterprises and individuals focused on bringing new products, processes and forms of organization into economic use, with the institutions and policies that affect their behaviour and performance (World Bank 2006, p. vi-vii).

Applying this concept, the next section examines the most outstanding example of ATI witnessed in recent decades – Asia's Green Revolution – aiming to identify lessons and challenges for current and future efforts. That is followed by an examination of recent trends in agricultural research and development (R&D) investments at national and global levels, along with important developments in the broader agricultural technology industry. The section after that examines how ATI contributes to inclusive structural and rural transformations, or the converse. That section is followed by a review of investment gaps and governance challenges facing the agricultural productivity growth agenda, and by strategies to improve

policies and institutions in support of that agenda. Major lessons and conclusions round out the analysis.

### **ATI and structural transformation: lessons from Asia's Green Revolution**

As detailed in the regional chapter on Asia and the Pacific, the Green Revolution in Asia illustrates the role of ATI in setting countries on the path of rapid structural and rural transformations, with fast poverty reduction (Pingali 2012). Initiatives such as the Alliance for a Green Revolution in Africa (AGRA), the Science Agenda for Agriculture in Africa (FARA) and key elements of the narrative justifying Sustainable Development Goal 2 to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture indicate that this "other Asian miracle" remains a source of inspiration.

The Green Revolution was based on a major technological innovation in wheat and rice production: the introduction of short-strawed, high-yielding varieties, alongside the increased application of inorganic fertilizer and agrochemicals for crop protection. The widespread adoption of such technologies

by smallholder farmers across Asia led to a remarkable increase in grain production from 313 million tonnes per year in 1970 to 650 million tons in 1995 (Hazell and Ramasamy 1991). The gains were mainly driven by increases in input use rather than in efficiency, as rates of growth of total factor productivity (TFP) were quite modest in the early part of the Green Revolution era in India (Binswanger-Mkhize and d'Souza 2012, p. 193).

The increased productivity on smallholder farms stimulated rural and structural transformations through linkage effects and growth multipliers. Agricultural production generates forward production linkages when agricultural outputs are supplied as inputs to non-agricultural production. Agricultural growth can contribute to expanding agroprocessing and processed food marketing, which provide engines of growth, and in many cases opportunities, to substitute for imports. Agriculture also creates backward production linkages through its demand for intermediate inputs such as fertilizers and marketing services (Johnston and Mellor 1961; Hazell and Haggblade 1991; Hazell and Ramasamy 1991). Both effects were observed in the Green Revolution. The production linkages of agriculture deepen as the transformation proceeds. Backward and forward linkages are both especially strong for the rural non-farm economy, as emphasized by Haggblade et al. (2010).

The Asian Green Revolution offers lessons on the political and institutional dimensions of ATI and rural transformation. In the 1960s, many developing country governments aimed to promote a structural transformation by investing in the industrial sector and by keeping food prices low. In India, this neglect of agriculture led to increasing dependence on foreign food aid, which became a political burden when the United States in the late 1960s started to use food aid as an instrument of foreign policy. This created strong political incentive within the Indian Government to make the country self-sufficient in food production. In other Asian countries, such as Indonesia and the Philippines, food shortages led to food riots, which induced governments to shift their policies towards

supporting innovation in agriculture (Djurfeldt and Jirström 2005). As the case of India shows, the governments made major investments in creating an institutional environment that allowed smallholders to adopt the new technologies (Subramaniam 1995).

Although Asia's Green Revolution was inclusive in the regions in which it was adopted (Djurfeldt et al. 2005), it did not reach the poorest farmers or those in semi-arid regions, where poverty rates have remained persistently higher (see the regional chapter on Asia and the Pacific). The Green Revolution helped agricultural labourers and poor food consumers in rural and urban areas via indirect effects of ATI (de Janvry and Sadoulet 2002), especially the greater availability of food and lower prices (Hazell and Ramasamy 1991). However, the Green Revolution also shows that an increase in staple food production does not necessarily translate into nutrition security (see Spotlight 6). Moreover, the Green Revolution has been associated with a wide range of well-documented environmental problems (Ali and Byerlee 2002), which underlines the need to pay specific attention to the environmental effects of ATI.

The yield-enhancing technologies that underpinned the Asian Green Revolution were introduced and promoted in a context of government intervention to support farm output prices and subsidize farm input prices, alongside major public investments in extension systems and rural infrastructure, particularly roads and irrigation. Strong political incentives to achieve food security also made it possible to overcome critical governance challenges involved in promoting technology adoption among smallholders.

Countries seeking to replicate such successes today face a sharply different context. They must operate in a more open economic environment with fewer options to protect their agricultural sectors from international competition. Some analysts have expressed concern that the growth linkages of agriculture in today's open economies are less strong than they were during the Green Revolution, especially in small countries (Hazell et al. 2010). Nonetheless, that

revolution's experience remains relevant to the requirements for promoting self-sustaining processes of growth fuelled by technological advances in small-scale agricultural production and trade.

### Recent trends and developments in ATI

Broad-based productivity growth in agriculture is crucial for inclusive rural and structural transformations in most contexts, and is often driven by investment in agricultural R&D and related fields.

The idea that investing to enhance agricultural productivity would be essential in reducing poverty and promote structural transformation has long been held in development circles, but studies from the 1990s and since have quantified the effects. Datt and Ravallion (1996) showed how important rural growth had been in India, for instance, and Thirtle et al. (2003) surveyed a much wider set of country experiences around the world. Subsequent syntheses have fleshed out the story (World Bank 2007, chapter 7; Fan et al. 2008; Alston 2010; Mogues et al. 2012; Christiaensen and Todo 2014). The evidence is strong and clear that sustained investment to enhance productivity in agriculture and the broader rural

economy has a large impact on both growth and poverty reduction.

### Investment in agricultural R&D

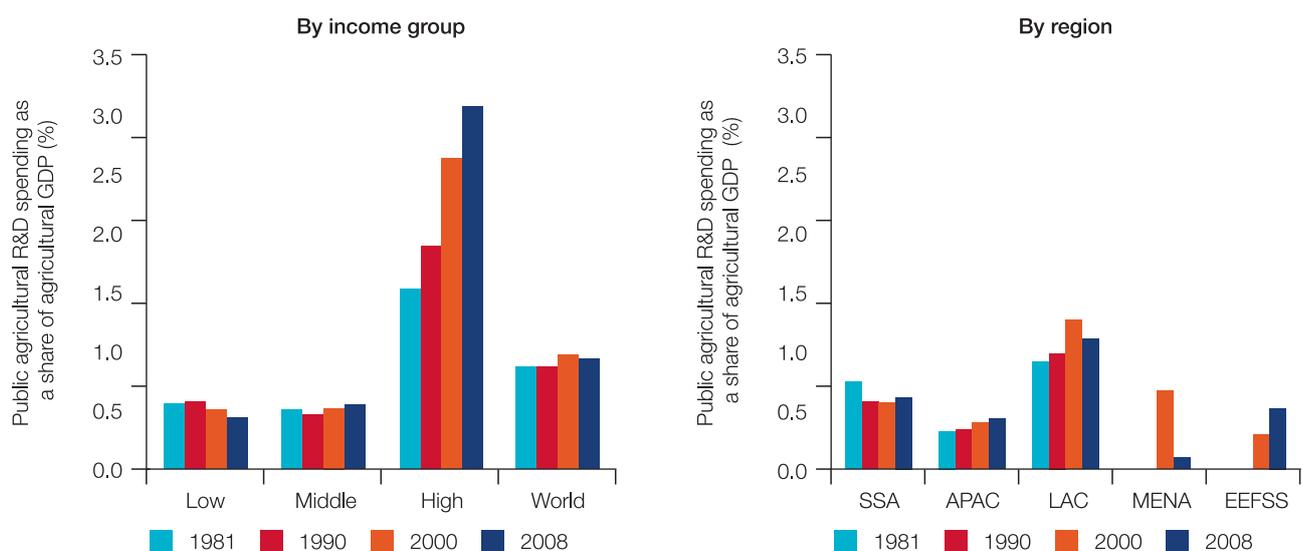
An essential precondition for ATI is investment in agricultural R&D. This section reviews recent trends of public and private investment in agricultural R&D.

#### National public investment

Agricultural research intensity (spending on agricultural R&D as a share of agricultural gross domestic product [GDP]) in Asia and the Pacific is well below 1 per cent (figure 8.1), often considered a target.<sup>122</sup> In sub-Saharan Africa (SSA), Swaziland, Kenya and Malawi are among the dozen or so countries that exceed this threshold. Benin, Mali, Tanzania and Côte d'Ivoire are among the next dozen countries spending more than 0.5 per cent. Agricultural R&D funding in SSA is more dependent on contributions by development partners than that in other developing regions, and – linked to this – funding is also more volatile (Beintema and Stads 2014).

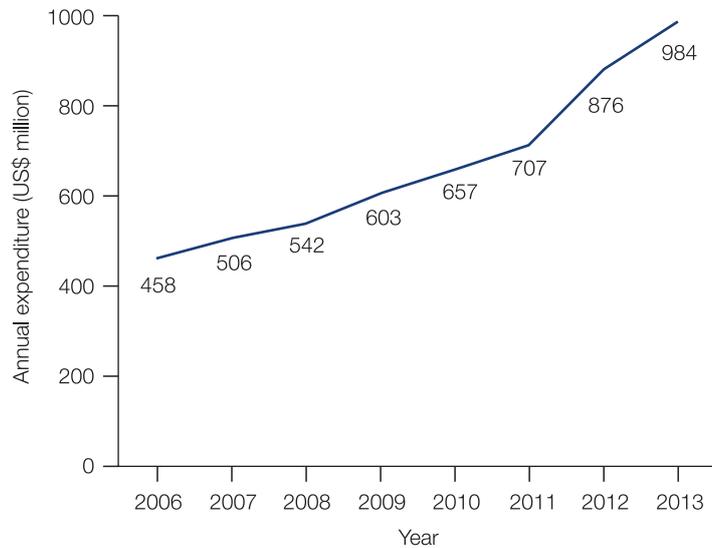
Efforts to collect data on other components of the agricultural innovation system, especially agricultural extension and education, are less

FIGURE 8.1 Agricultural research intensities by country income and region, 1981-2008



Note: SSA = Sub-Saharan Africa; APAC = Asia-Pacific countries; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; EEFSS = Eastern Europe and former Soviet States.  
Source: Beintema et al. 2012, p. 10.

FIGURE 8.2 Annual expenditure of CGIAR centres, 2006-2013



Source: Ufer and Birner 2015, based on audited CGIAR financial reports of 2006-2013.

frequent and systematic than for agricultural research. The Asian Green Revolution countries seem to have maintained quite large public extension systems, while few countries in Africa, such as Ethiopia, Kenya and Rwanda, have made major efforts to increase the number of their public agricultural extension agents (Swanson and Davis 2014).

#### International public investment

Since the start of the Asian Green Revolution, the international development community has invested heavily in agricultural R&D, most notably by funding the now 15 international agricultural research centres, known as CGIAR. The re-emergence of agriculture and food security on the global development agenda during the 2000s led to a substantial increase in funding to the CGIAR centres (figure 8.2).

The CGIAR centres more than doubled their spending between 2006 and 2013. More than half of CGIAR funding is spent on SSA. This increase in funding was associated with a major institutional reform of the CGIAR system that started in 2009, partly aimed to improve coordination among the centres.

The CGIAR is mainly financed through grants provided by bilateral and multilateral

development agencies. IFAD, for example, provided almost US\$100 million over 2004-2013 to support agricultural research conducted by the CGIAR, focusing on technologies for smallholder farmers (IFAD 2014, p.15).

#### Private investment

The private sector can play a major role in areas of research that are not in themselves subject to market failures, such as seed multiplication and distribution, agrochemicals and agricultural machinery (Byerlee and Haggblade 2014). Globally, its contribution has been climbing fast in recent years, by more than 40 per cent during 1997-2010, according to a survey of seven agricultural input industries. By far the largest share went into crop seeds and biotechnology (Fuglie et al. 2012a). Although private investment is still concentrated in industrialized countries, developing countries can benefit from it, especially if they create a business environment that assists agribusinesses.

Private agricultural R&D tends to focus, however, on specific types of commodities for which returns are easily appropriable, and many of those are not essential to smallholder livelihoods. Moreover, these investments persistently overlook the crops, traits and technologies that are vital to the livelihoods of the poor. While many market and institutional factors explain the low rates of private investment, incentive mechanisms could stimulate private investment better, such as push-and-pull mechanisms that stimulate both demand for and supply of private R&D – if carefully designed, adequately funded and politically backed. Further research is needed to isolate which measures are the most effective, in which circumstances, and especially their impact on private investment in pro-poor agricultural R&D (Naseem et al. 2010). (The implications of private investment in R&D for the inclusiveness of transformation in developing countries are discussed in “Strategies for boosting investments and improving governance” below.)

#### Technology adoption and crop yields

Data on the adoption of agricultural technologies, such as improved seeds, are only

available for all developing regions until 2000 (table 8.1). For Africa, more recent data are in Walker et al. (2015). Adoption rates in SSA have increased significantly since 2000 for all crops except rice (table 8.2, which also reveals the importance of CGIAR contributions to progress), with wide variations across countries. Moreover, except for soybeans, which are not a traditional crop in Africa, adoption rates are still below 50 per cent in most countries, thus lagging behind the rates reached in other developing regions two or three decades earlier (see table 8.1).

The adoption of improved varieties is a major factor in promoting increases in crop yields, with the adoption of complementary technologies such as fertilizers and crop protection. The yields of cereal crops have been rising in all regions of the world except SSA, even though the rate of increase has been slowing (figure 8.3).

Analysts such as Alston and Pardey (2014) report similar results. Fuglie (2012, p. 357) finds significant slowdowns for wheat and rice yields, although maize has made good progress since 1990. These trends seem less alarming when the acceleration of TFP growth is taken into account.

The slow rate of growth of the crop yields in SSA is somewhat surprising, since adoption

rates of improved varieties have increased. This result may be due to minimal adoption of complementary technologies, such as fertilizer. Moreover, while not reflected in average yields, the increased use of improved varieties may still have contributed to increased efficiency in using factors of production.

#### Changes in factor productivity

Adoption of new technologies and improvements in the efficiency of known technologies lead to increased productivity of the production factors of land, labour and capital. This is why factor productivity is a widely used indicator to measure innovation in agriculture. The adoption rates of agricultural technologies shown in the previous section help to explain recent patterns in land and labour productivity (figure 8.4). Japan, Western Europe and North America have been on vastly different paths on these two indicators, with labour productivity rising faster in all regions. China, Latin America, the Middle East and North Africa, and Asia have made impressive gains on both measures of productivity, with China having the most balanced increases. Compared with other regions, SSA has seen very little growth in labour

TABLE 8.1 Area planted to modern varieties, 1960-2000 (% of total area harvested)

	Year	Sub-Saharan Africa	East and South-East Asia and Pacific	South Asia	Middle East and North Africa	Latin America and the Caribbean
Rice	1960	0.0	0.0	0.0	0.0	0.0
	1970	0.0	9.7	10.2	0.0	4.7
	1980	3.1	40.9	36.3	2.2	16.2
	1990	12.3	63.5	52.6	4.3	27.8
	2000	31.0	80.5	71.0	10.4	32.3
Wheat	1960	0.0	0.0	0.0	0.0	0.0
	1970	0.4	0.0	39.6	7.6	11.4
	1980	4.1	27.5	78.2	33.8	61.3
	1990	6.3	58.7	87.3	43.8	79.3
	2000	47.4	89.1	94.5	69.1	93.2
Maize	1960	0.0	0.0	0.0	n.a.	0.0
	1970	0.0	16.2	17.1	n.a.	1.6
	1980	0.4	61.7	34.4	n.a.	11.2
	1990	7.5	73.0	47.1	n.a.	27.0
	2000	16.8	89.6	53.5	n.a.	56.5

Source: Gollin et al. 2005, p. 1313, based on data shared by Robert E. Evenson

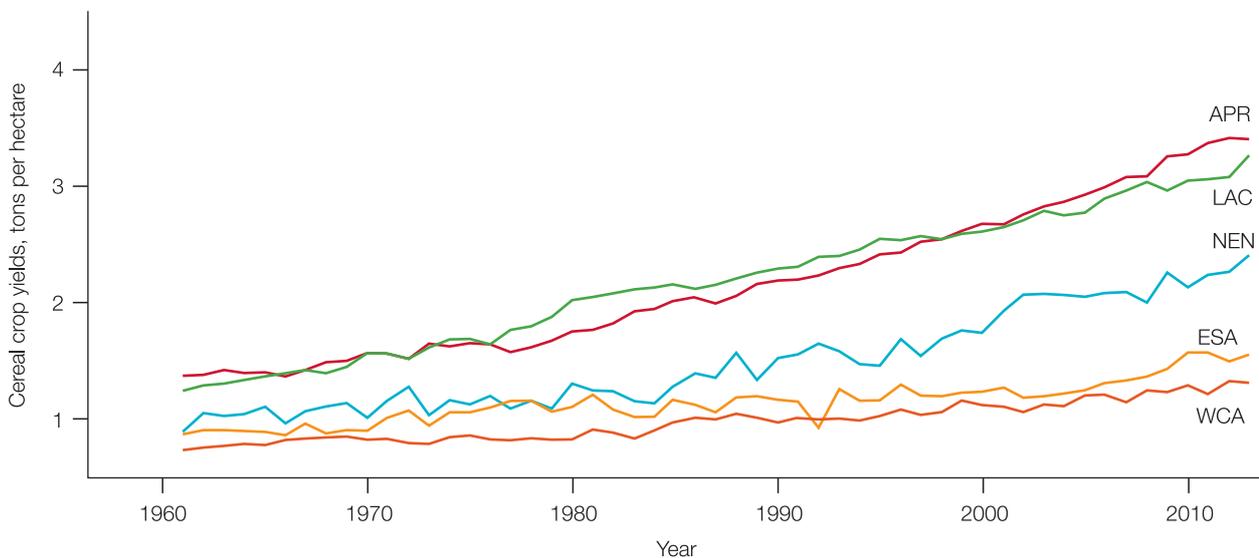
TABLE 8.2 Adoption of modern crop varieties (MV) in Africa and the contribution of CGIAR, circa 2010

	Total area (million ha)	MV area (million ha)	% MV of total area (%)	MV area CGIAR related (%)
Maize	24.67	13.03	53	55
Sorghum	17.97	4.93	27	78
Cassava	11.04	4.38	40	83
Rice	6.79	2.58	38	51
Pearl millet	14.09	2.55	18	87
Groundnut	6.36	1.85	29	86
Yam	4.67	1.41	30	50
Soybean	1.19	1.04	87	63
Wheat	1.45	0.85	59	65
Bean	2.50	0.72	29	81
Other crops <sup>a</sup>	16.99	4.63	27	61
<b>Total</b>	<b>107.72</b>	<b>37.97</b>	<b>35</b>	<b>66</b>

<sup>a</sup> Includes pigeonpea, potato, barley, chickpea, fababean, lentil, sweet potato and field pea, all with less than 0.5 million hectares of MV adoption.

Source: Walker et al. 2015, chapter 19, with selections made by Derek Byerlee for this tabulation.

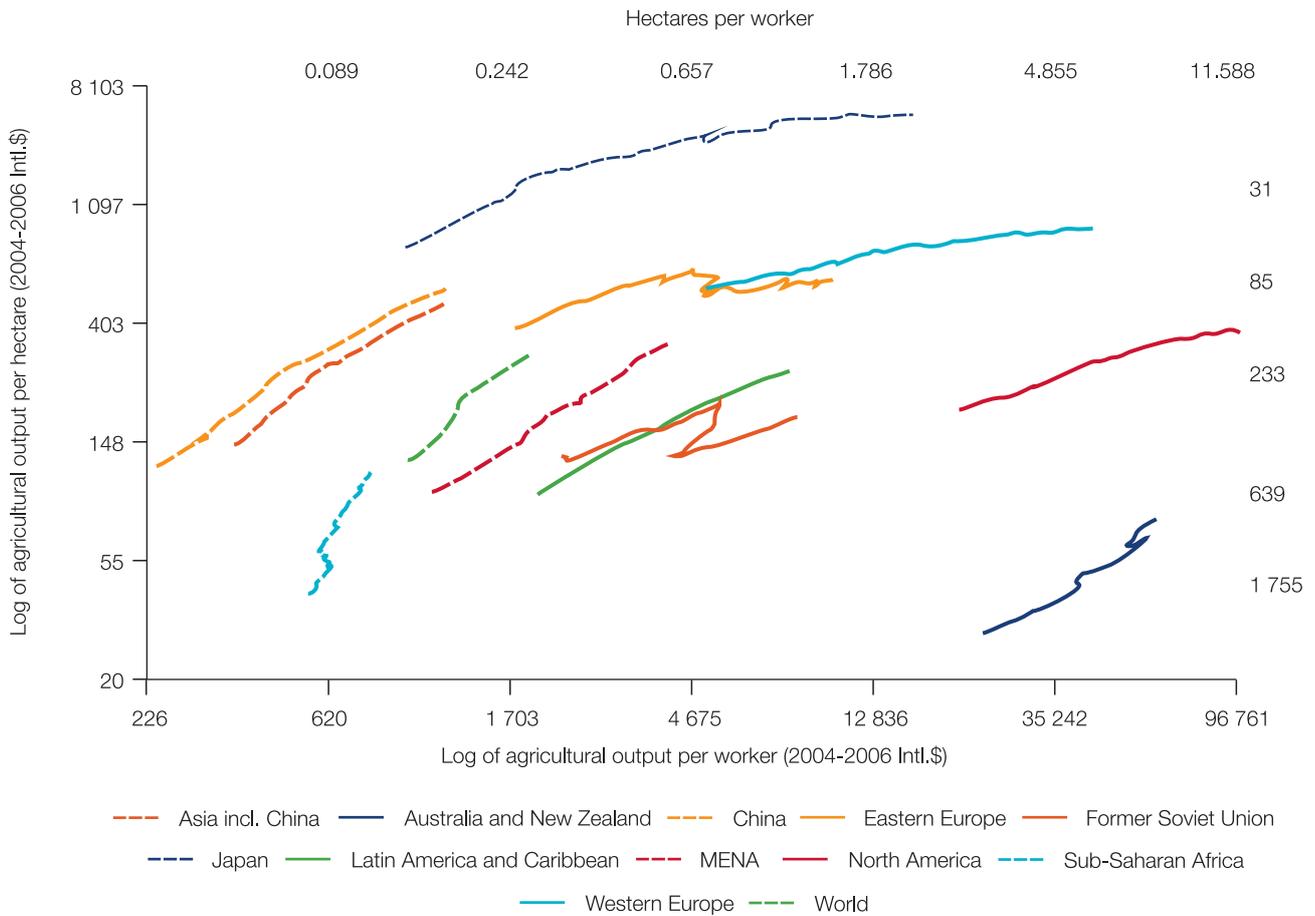
FIGURE 8.3 Trends in cereal crop yields, by region



Note: APR = Asia and the Pacific, ESA = East and Southern Africa, WCA = West and Central Africa, LAC = Latin America and the Caribbean, NEN = Near East, North Africa, Europe and Central Asia.

Source: IFAD, based on FAOSTAT.

FIGURE 8.4 Land and labour productivity by region, 1961-2013



Note: Uses double logarithmic depiction introduced by Hayami and Ruttan 1971, 1985; updated in Pardey 2015.  
Source: Pardey 2015.

productivity and only modest growth in land productivity.

The most informative indicator of technology innovation is TFP, which is a broad measure encompassing an appropriately weighted average of productivity of all inputs: land, labour, capital and materials employed in production. In addition to growth of cereal yields, TFP includes productivity increases in other crops, and from shifts in the cropping patterns towards higher-value products. Despite the global slowdown in growth of cereal yields, there does not seem to be a slowdown in sector-wide global agricultural productivity growth (table 8.3). Indeed, TFP has accelerated largely because of the rapid productivity gains achieved in several large developing countries, notably Brazil and China. At the global level, increases in TFP (indicating more efficient use of resources) have replaced

land expansion and increased use of inputs as major drivers of growth in agricultural output, and so observers may be more relaxed about supply in agriculture meeting the rising demand from worldwide population and income growth.

However, many countries have been unable to sustain productivity growth in agriculture. The largest group of countries in this low-growth category is in SSA, although several are in Latin America and the Caribbean (LAC) and Asia and the Pacific (APR). Fuglie and Rada (2012) document in some detail the rather disappointing growth of TFP in SSA. Nin-Pratt and Yu (2012) found broadly similar results on TFP using different analytical methods. They identified more favourable agricultural policies (Anderson and Masters 2009) and lower political instability over recent decades as factors that contributed to a "remarkable recovery"

in the performance of SSA's agriculture in the mid-1980s and later, after a long period of poor performance and decline. These authors judge the performance of some nine countries to be "good," namely Angola, Cameroon, Ethiopia, Ghana, Guinea, Mali, Mozambique, Nigeria and Zambia, although for Angola and Mozambique, it was largely catch-up of earlier losses during periods of conflict. It is not mere coincidence that, as reported in the chapter on SSA, five of these countries (Cameroon, Ethiopia, Ghana, Mali and Mozambique) have also been most successful in cutting rural poverty in recent decades.

#### **Technologies to promote sustainable productivity growth**

The new Sustainable Development Goal 2.4 envisages, "By 2030 ensure sustainable food production systems and implement resilient agricultural practices that increase productivity

and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality."

Agricultural innovation strategies need to take this sustainability goal into account. As the Green Revolution showed, agricultural intensification has been associated with negative effects, such as overuse of agrochemicals and irrigation water. Areas not affected by that revolution suffer from different types of environmental problems, such as degradation of soil and pasture land, and loss of forests and wetlands due to the expansion of the agricultural frontier (WDR 2011, chapter 8). These experiences have led to increasing investment in developing and promoting environmentally sustainable agricultural production technologies and natural resource management practices.

TABLE 8.3 Average growth in agricultural total factor productivity (TFP) by region

Region	Average TFP growth rate (% per year)				
	1961-1970	1971-1980	1981-1990	1991-2000	2001-2009
All developing countries	0.69	0.93	1.12	2.22	2.21
Sub-Saharan Africa	0.17	-0.05	0.76	0.99	0.51
Latin America and the Caribbean	0.84	1.21	0.99	2.30	2.74
Brazil	0.25	0.60	3.02	2.62	4.03
Asia (except West Asia)	0.91	1.17	1.42	2.73	2.78
China	0.94	0.67	1.71	4.10	3.05
West Asia and North Africa	1.40	1.66	1.63	1.74	1.88
All developed countries	0.99	1.64	1.36	2.23	2.44
United States and Canada	1.25	1.67	1.31	2.18	2.24
West and Central Europe	0.58	1.44	1.43	1.25	1.98
Transition countries (former USSR and Eastern Europe)	0.57	-0.11	0.58	0.78	2.28
World	0.18	0.60	0.62	1.65	1.84

Source: Fuglie and Wang 2012, p. 4, based on Fuglie et al. 2012.

As seen in the chapter on land and natural resources, many initiatives are under way to improve sustainability, some of which are spreading rapidly and widely. Some include developing high-potential varieties for crop and livestock production, such as drought-tolerant maize, varieties of “New Rice for Africa” (NERICA) suited to upland conditions and drought-tolerant Napier grass and Rhodes grass. Other promising moves feature combinations of technical improvements with institutional innovations, often aiming to build robustness into technologies through integrated systems. For example, in pest control, soil management, agroforestry and crop-livestock interactions, novel “management platforms” that bundle together soil improvement, new crop and livestock varieties, intensified input use and farmers’ collective action, are showing strong potential for increased incomes, improved sustainability of farming systems and adaptation to a range of farming systems and agroecologies.

Conservation agriculture, which has permanent soil cover combined with appropriate crop rotation, has been adopted on 125 million hectares of land across the world, opening scope for sustainable growth in agricultural productivity even under the inevitable effects of climate change and variability.

Integrated soil fertility management, featuring combined use of mineral fertilizers and local soil amendments, such as lime and phosphate rock, and organic matter such as crop residues, compost and green manure, improves soil quality and the efficiency of fertilizers and of other improved inputs. It also promotes improved germplasm, agroforestry and the use of crop rotation and intercropping with fertility-enhancing legumes (Place et al. 2003).

Integrated pest management promotes agroecological principles as a basis to reduce use of agrochemicals. Although it requires heavy investment in farmers’ knowledge, adoption is encouraging. The push-pull technology developed by the International Centre of Insect Physiology and Ecology (ICIPE) and partners for managing maize stem borer pests involves selection, placement and sequencing of plants that allow use of behaviour-modifying stimuli to

manipulate the distribution and abundance of stem borers and beneficial insects (Hassanali et al. 2008).

The “farmer field school” approach brings together concepts and methods from agroecology, experiential education and community development to lower the use of pesticides and improve sustainability of crop yields. Its effectiveness in improving farmers’ knowledge of integrated pest management principles has been shown in numerous studies (e.g. Godtland et al. 2004), although questions of cost-effectiveness and scalability remain (e.g. Ricker-Gilbert et al. 2008).

Innovation entails expanded uptake and use of technologies and practices such as these, while opening scope for new ones to take hold.

### **Contested technologies**

Quantitative field-based research has yielded basic tools with which preferred traits can be identified, quantified and exploited for crops (and livestock). However, these conventional field-based approaches to selection and breeding are lengthy and at times inaccurate. Recent advances in biotechnology have opened the way for rapid progress in understanding desirable traits in more direct and precise ways. In particular, marker-assisted selection of target genes within preferred crop varieties (and animal breeds), and marker-assisted introgression of target genes from superior to inferior crop varieties (and animal breeds) are major thrusts in molecular genetics research. In just two or three decades, these methods of modern biotechnology have moved from being theoretical concepts to basic practice – commonplace, uncontroversial and widely embraced.

That cannot be said for genetic engineering that yields genetically modified organisms (GMOs). Information flows on GMOs are often poor, however (IFAD 2011, p. 152). Little space has been given to the voices of small farmers in authorizing GM crops. As IFAD (2011) pointed out, this needs to change for countries to be able to more effectively access the potential benefits of GMOs for increased productivity, reduction of risk faced by smallholders and contribution

to poverty reduction, while being aware of emerging understanding of the potential environmental and health risks that may be associated with their use. It is up to countries to make their own decisions, based on their assessment of potential risks and expected benefits.

Controversies over GMOs revolve around three broad concerns: potential environmental and health hazards, increasing dependence on a small number of multinational companies and potential negative effects on smallholder farmers.

Hazards in the first group vary according to the type of organism being modified and its intended application. The environmental impacts of introduced GMOs can be ecological or genetic, and may include:<sup>123</sup>

- Unintended effects on the dynamics of populations in the receiving environment owing to impacts on non-target species, which may occur directly by predation or competition, or indirectly by changes in land use or farming practices.
- Unintended effects on biogeochemistry, especially through impacts on soil microbial populations that regulate the flow of nitrogen, phosphorus and other essential elements.
- The transfer of inserted genetic material to other domesticated or native populations, generally known as gene flow, through pollination, mixed matings, dispersal or microbial transfer.

These potential effects have been intensively studied over the past decade. A recent review of the literature, which included a thorough review of the evidence on different types of gene flow, concluded that “the scientific research conducted so far has not detected any significant hazards directly connected with the use of GE [genetically engineered] crops” (Nicolia et al. 2014).

There is also evidence of potential positive effects of GMOs on the environment. To the extent that GMO adoption leads to higher yields, the pressure to convert additional land into agricultural use is reduced. Moreover, herbicide-tolerant GM crops have aided the shift to

conservation agriculture practices, which also has positive environmental effects (Carpenter 2011). Less pesticide use is a potential benefit for the environment and for human health, and several studies have found that the adoption of GM crops lowered pesticide use (Hossain et al. 2004; Bennett et al. 2006). There is also, however, evidence from China that the absence of enabling institutions and lack of farmers’ knowledge can limit such benefits of Bt cotton for small farmers, which points to the need for advisory services on crop protection and for quality control to ensure appropriate Bt concentration of the seed material (Pemsl et al. 2005).

For food safety, the potential implications of GM crops have also been thoroughly assessed in recent years, even if a review of this literature by Domingo and Bordonaba (2011) notes that the topic remains subject to controversy. The review by Nicolia et al. (2014, p. 8) examined potential health hazards, such as safety of the inserted transgenic genetic material and safety of the intended and unintended changes of crop compositions, and as with the environmental effects, found no significant health hazards directly connected with the use of GM crops.

On the second broad concern – dependence on a small number of multinational companies – there is clear evidence that concentration in the seed sector, in particular the GM seed sector, is very high and likely to increase further (World Bank 2007; Bonny 2014). This possibility certainly requires regulatory attention.

Regarding the third broad concern, suitability for small farmers, it is noteworthy that GM crops are widely grown by small farmers in countries where they have been authorized – as in the case of Bt cotton, in Burkina Faso, China and India. A recent meta-analysis of the economic impacts of GM crops concluded that the average agronomic and economic benefits of growing GM crops were large and significant. Yield gains and pesticide reductions were larger for insect-resistant crops than for herbicide-tolerant crops. Moreover, yields and farmers’ profit gains were higher in developing than developed countries (Klümper and Quaim 2014).

There is no escaping the conclusion that, beyond the use of biotechnology methods in

molecular genetics research described above, thus far the biotechnology revolution has been a narrow one. GM crops feature the same two traits (herbicide resistance and insect resistance) that were introduced in 1996. Nor is there a clear institutional pathway for filling the delivery gap for GM food crops. Obstacles to multinational corporations' entry to developing countries' food-crop seed markets persist: small market sizes, regulatory expense, inability to protect intellectual property from seed piracy, lack of political incentives for governments and overall public opprobrium for the GM industry. The persistent and widespread weakness of conventional seed-delivery systems reduces prospects for delivery of GMOs outside of the multinational pathway.

### Emerging digital solutions

ICT is a promising set of technologies increasingly used in developing countries. Over the past two decades, ICT use has exploded in virtually every facet of life. The number of people with mobile phones has increased from virtually none in 1980 to around a billion in 2000, and to an estimated 4.5 billion unique subscribers and nearly 7 billion subscriptions in 2013. Internet use has also grown at a torrid pace, via computers and more recently smartphones: in 1995, only 16 million users worldwide accessed the Internet. Today some 2.5 billion do. The past five years has seen a doubling of the Internet population.

With this technological explosion, employing ICT tools for development has become a focus of national and international organizations, governments and corporations (Belden and Birner 2011). The agricultural innovation system offers many opportunities to use ICTs (e.g. in research and extension), as do the various segments of agricultural value chains. A rapidly expanding array of tools attempts to enhance yields, improve quality, reduce post-harvest losses, remove intermediaries and disseminate knowledge about best practices. Through websites, smartphone applications and SMS text messages, farmers can gather information on a huge range of topics, such as plant diagnostics, planting reminders and advice, fertilizer and pesticide application

assistance, weed identification, GPS-enabled field notes and yield improvement.

A major focus of these applications – mostly developed by private companies but often with public support – is to remedy the asymmetry of information between buyers and sellers of agricultural commodities. In particular, ICT gives farmers tools to find out market prices, empowering them in interactions with traders and other service providers. In some places, farmers can use their mobile phones to send SMS text messages to a centralized data centre and receive price information. Older ICT technologies still play a role, too: radio has long been the best way to reach millions of rural residents and remains an important tool. Internet also plays a role, particularly for larger buyers and sellers. Market information is continually posted on websites in countries and regionally, allowing buyers and sellers to match up.

Another focus of digital innovation is agricultural extension. In the Indian state of Madhya Pradesh, Kisan Call Centres, which are run by the Ministry of Agriculture, handled more than 200,000 farmers' queries from 50 districts in their first year of operation. Queries related to topics such as crop diseases or marketing issues (FAO 2013, p. 7). Government commitment is required to make such call centres work, since they rely on a skilled team of motivated experts who need to be on hand to reply to the queries.

International development agencies and networks are also contributing, both in the development and rollout of initiatives, and in assessing their efficacy and impact. IFAD supported the Indigenous Maasai Cultural Centre to establish a radio-based system to collect observations and weather predictions from Maasai herders scattered across thousands of hectares, to document and verify these observations, and to map them with geographic information systems. This information helped the Council of the Maasai Elders make key decisions on communities' and livestock movements, based on where rainfall is expected.<sup>124</sup> An evaluation by the Agricultural Technology Adoption Initiative of a mobile-phone-based agricultural advisory service called

“Avaaj Otalo” in India found that the investment promoted a shift to more effective and less hazardous pesticides in cotton production (Cole and Fernando 2012).

The promise of digital solutions is immense – even though they are helping to disseminate global knowledge, they are not necessarily democratizing it. Benefits from improved access to knowledge disproportionately accrue to the wealthier, the better educated and the well-connected (World Bank 2016).

### **ATI: adoption, inclusion and exclusion**

A technology is inclusive if a broad base of farmers, especially smallholders and women, can adopt it, and if it brings in geographically or culturally disadvantaged groups. This section examines evidence on factors that influence the inclusiveness of agricultural technology adoption. It reviews potential implications for inclusion (or exclusion) under the following four headings.

#### **Properties of technologies**

The properties of the technology (in particular, divisibility and other factors influencing scale effects) and the state’s capacity to protect intellectual property rights largely determine how inclusive ATI can be.

Divisible technologies such as seeds and fertilizer are, in principle, scale neutral and should not cause problems for inclusiveness if they do not require complementary technologies that are not scale neutral. Still, farmers need to purchase such inputs, and market failures in agricultural finance and insurance are pervasive in the early phases of agricultural development (Binswanger and McIntire 1987; Byerlee and Haggblade 2014), so that smallholders may find it hard to access innovations.

Although rural financial services have improved with the microcredit revolution, these types are usually more suitable for non-farm activities, as they are not geared towards agricultural production in their payment structure and risk management (World Bank 2007; see also chapter 7).

Even if farmers can access technology, required inputs and credit, they may face other

constraints, including paucity of complementary technologies. For example, they may be able to buy improved seeds for tomatoes, but if they lack irrigation facilities then they may still be excluded from the technology. Many innovations require clusters of technologies. They may also face similar problems in accessing product markets, eroding their incentive to innovate because of the risk of not being able to turn a profit.

An enduring quandary for policymakers and analysts is persistent low fertilizer use, which restricts agricultural productivity and contributes to soil degradation. Because fertilizer use is scale neutral, it is still a contested question as to why adoption rates among smallholders in Africa especially remain low, whereas smallholders in other countries have adopted this technology on a large scale.

Randomized controlled trials (RCTs) have been conducted on this topic. Based on field experiments in Kenya, Duflo et al. (2008) showed that micro-dosing of fertilizer can have high returns, while conventional application, including official recommendations of the Ministry of Agriculture, were unprofitable for the farmers studied.

A study by Carter et al. (2014) on the use of fertilizer and seed vouchers in Mozambique found that a voucher led to a large, persistent increase in agricultural production and market sales, a result that the authors attribute to “learning.” Other studies have identified low yield response rates to fertilizer as a major problem, which points to the need to invest in complementary inputs and management practices, such as addressing soil acidity problems (Jayne and Rashid 2013; Sheahan et al. 2013). Further, the benefits of “smart” fertilizer subsidy programmes in Kenya, Malawi and Zambia have been affected by diversion of subsidized fertilizers before they even reach the farm and the crowding out, by subsidized fertilizers, of fertilizer purchases on the open market (Jayne and Rashid 2013). Future programmes need to resolve these two problems to make such subsidies an attractive use of state resources.

The inclusiveness of a technology can also be promoted by improving characteristics particularly relevant for disadvantaged farmers. One example is the submergence-tolerant rice variety Swarna-Sub1. A study based on an RCT in Orissa by Dar et al. (2013) found that low-caste groups benefited most from this technology, as their land is predominantly in areas liable to flooding. Another is NERICA rice varieties, which are particularly suitable for disadvantaged upland rice farmers given characteristics such as short growing duration, drought tolerance and weed competitiveness. Kijima et al. (2006) concluded that NERICA varieties had “revolutionary” yield potential and, if supported properly, could lead to a quicker increase in upland rice yields than Asia achieved during the Green Revolution.

The complexity of a technology also influences its inclusiveness, because disadvantaged groups with little education may have problems in acquiring the knowledge needed. For such technologies, learning in social networks can help, though empirical results are mixed (Jack 2013). In an RCT study in Malawi, Beaman et al. (2015) found that for complex technologies, strategic targeting of an intervention within a social network can be critical to reach the threshold of adoption required for a technology to spread. In another RCT study in India, Emerick (2014) found that promoting a new technology through door-to-door sales was more effective than using social networks, given social barriers between farmers belonging to different castes.

The inclusiveness of a technology is further influenced by intellectual property rights. For hybrid seeds, private companies have a good chance of protecting their rights, which has increased private sector investment in R&D in recent years. If credit-market constraints can be overcome, therefore, smallholder farmers are not excluded from adopting the technologies that the private sector provides. However, the increasing market concentration in agricultural input industries could reduce competition, ultimately slowing the rate of innovation and raising the prices at which farmers can access the technologies.

Technologies that are not divisible, such as tractors and other agricultural machinery, are not scale neutral. The same is true for many schemes for product or process certification. However, these innovations do not need to be less inclusive than scale-neutral technologies, because this effect can be mitigated by institutions such as rental markets or forms of collective action that allow for the joint use of machinery (Binswanger 1986) or for group certification (see chapter 6).

Agrarian structure – especially the distribution of farm sizes – is another important aspect of the institutional environment that influences inclusiveness of technology adoption. Concerns are growing that new dualistic farm structures in land-abundant countries – where few large farms using landless hired labourers coexist with multiple smallholder farmers – are being formed by huge foreign and domestic land acquisitions that create large farms (Deininger and Byerlee 2011, 2012).

### **Properties of smallholders’ physical and socioeconomic environments**

Almost 30 years ago, Binswanger and Rosenzweig (1986) wrote powerfully of the “behavioural and material” determinants of production relations in developing countries. They argued that spatial dispersion, high transport costs, seasonality, limited physical infrastructure, and yield and market-price risks for smallholders impose deep challenges not only for smallholders themselves, but also for efforts to create conditions in which large numbers of smallholders have strong incentives to adopt and use improved technologies.

Their insights are still highly relevant, and the literature continues to stress that risk is a major obstacle to technology adoption by smallholder farmers (Dercon and Hurley 2010; Christiaensen 2011; Hardaker et al. 2015). These include the weather, prices (paid and received), health (family members, crops and livestock), social and political turbulence, and corruption of public officials. Most people will try to avoid risk, based on their perceptions of it, especially those on adopting technologies.

Smallholder farming remains a physically dispersed activity facing high transport and other transaction costs, and seasonal weather patterns are increasingly unpredictable with global climate change. Physical infrastructure in areas most in need of productivity boosts currently stand at levels well below those in place in pre-Green Revolution India. The highly diversified, low-input, low-output farming and livelihood systems actually adopted by smallholder farmers reflect these realities (Hazell 2012). These systems generate multiple context-specific benefits for smallholders. Paradoxically, the drivers of these benefits represent the principal barriers to be overcome in promoting inclusive ATI.

### Poverty traps

Poverty traps form one set of mechanisms excluding people from agricultural development, and are tied to risk. They stem from the interactive impacts of household and individual skills, the levels and changes in their asset holdings, and a range of external factors such as the available production technology and the structure and functioning of factor markets. Households change their asset accumulation and production choices in response to risk assessments and to actual shocks, sometimes eliciting disaccumulation of assets along with pursuit of low-risk, but low-return, production practices, which together drive households below poverty thresholds from which there are no natural dynamics supporting escape – hence the term “poverty trap” (Barrett and Carter 2013; Carter and Barrett 2006). Actual outcomes depend on household characteristics, with asset holdings, skills and capabilities, and associated livelihood options being key.

Especially relevant for ATI are poverty traps relating to the size and quality of the land resources controlled by smallholders. For instance, although the average returns to fertilizer use are considerable for small-scale maize farmers in western Kenya, fertilizer application does not pay for the poorest one-third of farmers, who mainly cultivate lower quality soils (Marenja and Barrett 2009; Barrett and Carter 2013). These farmers quite rationally

fail to invest in what otherwise appears an attractive input. Thus long-term soil fertility decline can generate asset thresholds that trap some households in poverty and food insecurity. On the positive side, other farmers in the same region of western Kenya who were offered discounts on fertilizer just after harvesting increased their fertilizer use if they saw a potential profit. This may help them escape the poverty trap (Duflo et al. 2009). Poverty traps are not necessarily permanent.

### Gender relations

Most rural women have less access than men to productive resources and services such as agricultural extension, greatly limiting their ability to adopt ATI. Yet there is ample evidence that productivity could be increased substantially if women’s access to resources were increased, including to land and agricultural services. Closing the gender gap in agriculture would generate hefty gains for the sector and for society. Gender-linked differences in adoption of improved crop varieties were long ago rigorously attributed to parallel differences in access to key inputs and factors (Doss and Morris Doss 1999). If women had the same access to productive resources as men, they could increase yields on their farms by 20-30 per cent, possibly raising agricultural output in developing countries by 2.5-4 per cent (SOFA 2011).

ATI interacts with gender relations in many ways, however, and some innovations worsen gender inequalities by, for example, placing a further labour burden on female household members or by changing the intra-household income distribution (World Bank, FAO and IFAD 2008). However, many are gender neutral, benefitting individual women just as much as individual men.

To the extent that ATI is inclusive, it is driven not just by technological advances but also by the institutional arrangements that allow women to participate and benefit at scale – arrangements which are not, however, always present.

## Investment gaps and governance challenges

Countries differ considerably in effort and success in sustaining inclusive ATI. Why? Two major obstacles are low investment in agriculture (often derived from inadequate political will) and governance weaknesses that undermine investment effectiveness.

### Investment gaps and paucity of political will

The public sector plays a critical role in ATI. Key among the factors contributing to the major differences across regions and countries in ATI are the differences in political will to prioritize investment. Political will is “the extent of committed support among key decision makers for a particular policy solution to a particular problem” (Post et al. 2010, p. 659). A range of indicators can be used to measure the political will to support productivity-increasing investment in agriculture.

A powerful and readily available first measure is the level of investment in agricultural research and extension (hereafter “R&D”), expressed as a share of agricultural GDP (see “Investment in agricultural R&D”). Such investments are typically well below accepted benchmarks (Alston and Pardey 2014).

Another indicator is the share of the national budget dedicated to agriculture, even though composition and effectiveness of such spending matters. Under the Comprehensive Africa Agricultural Development Programme (CAADP), African countries committed themselves in 2003 to a minimum of 10 per cent by this metric. According to official budget data, progress against this target has been slow (Benin 2015).

A third indicator of political will is support to, or discrimination against, agriculture. This indicator reflects the effect of all policies. The number of countries that lack such political will has declined in recent decades, as most developing countries have stopped taxing their agricultural sector and started to subsidize it, although this trend has been less pronounced in Africa than in other continents (Anderson and Masters 2009).

These empirical findings beg the question as to why there are differences (over time and

among countries) in political support for agricultural development.<sup>125</sup> Recent studies indicate that democratization has been important in the shift from taxing to subsidizing agriculture (Olper and Raimondi 2010; Bates and Block 2013). It reduced the “urban bias” that previously dominated agricultural policies in developing countries (Lipton 1977; Bates 1981). However, such quantitative political economy models have generally neglected factors on which few data are available, such as the roles of emerging farmers’ organizations, of the private sector and international development agencies, and of policy tenets (Binswanger and Deininger 1997; Birner and Resnick 2010; Mockshell and Birner 2015).

### Governance challenges

Even if countries develop the political processes to support ATI in smallholder agriculture, they must still overcome governance issues, on which the literature is limited. Again, definitional, measurement and explanatory issues arise. Fulginiti et al. (2004) found that good governance in the form of higher levels of political rights and civil liberties was associated with higher levels of agricultural productivity. Lio and Hu (2009) found that the governance indicators that mattered for agricultural productivity are rule of law and control of corruption.

Conceptually, two types of governance challenges in promoting ATI may be distinguished:

- (1) Choice of appropriate ATI strategies and policy instruments, some of which are contested.
  - (2) A pervasive lack of transparency and accountability, leading to elite capture, corruption and absenteeism of service staff, preventing effective implementation.
- The two problems are linked. The capacity to implement different instruments influences their choice.

On the first, a major controversy has focused on the role that the state should play vis-à-vis the private sector and the “third sector” (e.g. farmers’ associations, cooperatives and non-governmental organizations) in promoting

ATI. Domestic policymakers tend to favour state support for technology adoption by, for example, promoting input subsidies, whereas development partners consider these policies problematic, highlighting governance problems like political capture and poor targeting, and technical challenges (Banful 2011; Jayne and Rashid 2013; Mockshell and Birner 2015). Some efforts seek a middle ground, including the concept of “market-smart subsidies” (Morris et al. 2007). Overall, however, this controversy has hindered collaborative efforts in, among other areas, determining how to sustainably implement input subsidy programmes that avoid leakages and that are targeted to farmers who would not use the inputs otherwise. Likewise, ideological debates about contested technologies, such as GM crops or conservation

agriculture, have not brought about a more pragmatic approach (Sumberg and Thompson 2012). The full potential of many technologies thus remains unseized.

Among the governance problems in implementing policy (table 8.4), promoting irrigation typically requires infrastructural investment, either in large irrigation schemes or in small reservoirs. These investments seem particularly prone to irregular public procurement and broader corruption, which are, however, less prevalent in agricultural extension services if the extension agents do not distribute inputs. Extension services often suffer from absenteeism, a problem linked to the difficulty of supervising large numbers of staff dispersed throughout the country. Addressing this governance challenge is particularly difficult if

TABLE 8.4 **Agricultural technological innovation (ATI) governance challenges**

Government function	Examples	Governance challenges
<b>Policymaking</b>		
Formulating policies and strategies	<ul style="list-style-type: none"> <li>■ Priorities and strategies for ATI</li> </ul>	<ul style="list-style-type: none"> <li>■ Building capacity for innovation policy analysis and priority setting</li> <li>■ Ensuring participation and using evidence</li> <li>■ Overcoming ideological debates on contested technologies</li> </ul>
<b>Policy implementation</b>		
Addressing market failures in ATI	<ul style="list-style-type: none"> <li>■ Public agricultural research (with a focus on non-excludable technologies)</li> <li>■ Publicly funded agricultural extension services for smallholders</li> </ul>	<ul style="list-style-type: none"> <li>■ Retaining highly qualified researchers in national research organizations</li> <li>■ Avoiding staff absenteeism and elite capture in extension services</li> <li>■ Making research, extension and education gender sensitive</li> </ul>
Investing in infrastructure	<ul style="list-style-type: none"> <li>■ Large-scale irrigation systems</li> </ul>	<ul style="list-style-type: none"> <li>■ Avoiding political interference in public procurement and corruption</li> <li>■ Preventing embezzlement of funds</li> </ul>
Providing input subsidies to promote adoption of new technologies	<ul style="list-style-type: none"> <li>■ Price subsidies for agricultural inputs or targeted input voucher programmes</li> </ul>	<ul style="list-style-type: none"> <li>■ Larger farmers capturing benefits</li> <li>■ Politically motivated targeting</li> <li>■ Leakages of subsidized fertilizer to the open market</li> </ul>
Adopting regulations to address externalities in technologies	<ul style="list-style-type: none"> <li>■ Regulation for biosafety, food safety, pesticides, veterinary drugs and seed certification</li> </ul>	<ul style="list-style-type: none"> <li>■ Finding a balance between over- and under-regulation</li> <li>■ Reducing regulatory costs</li> <li>■ Promoting sound implementation</li> </ul>

Source: Authors.

communities are not involved in the evaluation of extension service providers (Birner and Anderson 2007).

Agricultural research involves fewer people than extension. The governance challenge there is to retain highly qualified staff and block any brain drain. Regulation involves its own governance challenges. Approval processes for inputs provided by the private sector, such as seeds or agrochemicals, are often slowed by unnecessary bureaucratic procedures and may involve requests for bribes (AGRA 2014). Regulatory procedures to ensure quality of inputs are often not functional, sometimes because there are too few inspectors.

### Strategies for boosting investments and improving governance

Largely following the distinction between policy choices and policy implementation, this section identifies strategies to overcome the obstacles identified above.

#### Promoting evidence-based policymaking

The past decade or so has seen an increasing focus on participatory and evidence-based policymaking in agriculture (Resnick and Birner 2010). This approach requires the development of capacity in research organizations and planning units of ministries to use appropriate tools and analysis. They need to be able to identify the technology options that are most relevant and beneficial for target groups, depending on the phase of the rural and structural transformations. Examples include the International Food Policy Research Institute (IFPRI) DREAM model (Dynamic Research Evaluation for Management) for priority setting in agricultural research, and decision support systems such as ReSAKSS (Regional Strategic Analysis and Knowledge Support System). Both were central to the evidence-based process led by the African Union Commission and the New Partnership for Africa's Development Agency to develop more than 40 CAADP Compacts and translate the majority of them into comprehensive and coherent national agricultural investment plans (AU/NEPAD 2014). Ethiopia's Agricultural Transformation Agency, and to a lesser extent Kenya's Agricultural Sector

Coordination Unit, are examples of national efforts to design and implement agricultural development strategies with an evidence base. A critical assessment of a country's agricultural innovation system (World Bank 2012) is also extremely useful.

#### Enhancing voice, accountability and delivery capacity

Participation of stakeholders in policymaking can be important in developing buy-in and consensus on ATI policies. However, such participatory policy processes have to be organized carefully to avoid bias and unrealistic expectations among participants (Resnick and Birner 2010). It is important that representatives of farmers' organizations have a voice. Building capacity among these bodies and among rural women's organizations can help to make such participatory policy processes more inclusive. IFAD plays an important role through support to networks of farmers' organizations and multistakeholder policy dialogues at regional and national levels. One example is its support to the Commission on Family Farming in MERCOSUR, which helped to attract attention to policy changes favouring smallholder farmers (IFAD 2014).

To address implementation problems, one can distinguish between demand- and supply-side strategies (World Bank 2007). As shown in figure 8.5, supply-side strategies aim at improving the incentives and capacity of the organizations that supply services in support of ATI, such as agricultural research and extension organizations. For example, public sector management reforms can strengthen incentives and performance of agricultural researchers and extension agents – through merit-based promotion opportunities and appropriate salary scales.

In view of the limited success with supply-side reforms, demand-side approaches have attracted increasing attention in recent years. These strategies strengthen the capacity of farmers to demand better services and hold service providers accountable. Examples in agricultural research include the introduction of participatory technology development

FIGURE 8.5 Demand- and supply-side strategies to improve governance



Source: Authors, adapted from World Bank 2007.

approaches, and inclusion of farmers’ and women’s representatives in the governing bodies of agricultural research organizations, as in the case of Uganda’s National Agricultural Research Organization.

In agricultural extension, a variety of reform approaches have been implemented in recent years. These approaches often combine supply- and demand-side reform elements in different ways (Birner et al. 2009; Feder et al. 2011). There are two major trends: (1) decentralization of agricultural extension by shifting the responsibility for service provision either to decentralized offices of agricultural line ministries, or to locally elected government bodies (a supply-side strategy); and (2) formation of farmers’ groups who are supposed to make the farmers’ voice heard and hold extension providers accountable (a demand-side strategy). Decentralized demand-driven provision of agricultural extension services has been highly successful in China (Hu et al. 2010). Uganda’s National Agricultural Advisory Services (NAADS) programme is an example with both features. Responsibility for extension was decentralized to the sub-county level. In addition, Uganda experimented with the outsourcing of extension services to private service providers. Farmer-based organizations had the right to decide on

the contracts, depending on the performance of the extension agents. Despite a promising start, the reform was ultimately not successful. Reasons included governance problems, such as procurement problems in the contracting of the service providers, and a range of unanticipated political hurdles. Analysis suggests that since the reform effort was driven largely by donor agencies, incentives to overcome these political problems were limited (Rwamigisa et al. 2013).

Nevertheless, the Uganda experience has informed investment elsewhere in Africa and in other regions. For instance, AGRA has invested in national and regional Soil Health Consortia to bring together scientists, industry actors and policymakers to jointly identify and address cross-cutting constraints to expanded adoption of integrated soil fertility management technologies and practices (AGRA 2015). IFAD has supported multistakeholder Country Fora (CF) that provide professional platforms for harmonization and improvement of agricultural advisory services. The CFs have stimulated interest among stakeholders for learning and sharing of knowledge, along with participation in policy formulation (IFAD 2015). These networks and platforms are complex to design and challenging to implement and sustain, but returns in relevance and impact potential appear to justify the costs.

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# Spotlight 7: Environmental sustainability

## **Environmental sustainability is a precondition for inclusive transformation**

Ecologically sensitive forms of transformation preserve the capacity of the natural environment to sustain productivity and living standards. In turn, healthier environments allow further environmentally sensitive and sustainable transformation. This virtuous circle must be integral to inclusive rural transformation, in which the capacity of rural people to promote and pursue sustainable forms of development brings about environmental preservation and regeneration. By any measure, for transformation to be regarded as sustainable, it must encompass safeguarding – ideally renewing – ecosystems and biodiversity.

On the flip side, poverty, exclusion and inequality are linked to environmental degradation. Options to prioritize sustainable environmental practices are extremely limited for small-scale rural producers operating below or near the poverty line. Immediate survival, health and nutrition concerns predominate. Using marginal lands, destroying forests for fuel or production, over-extracting and polluting of water resources, and over-harvesting are commonplace, with predictable long-term consequences (see IFAD 2010 for examples). Natural resources are also under increasing pressure from climate change.

Although the technology and institutions exist to promote sustainable rural and structural transformation, extremely few of these elements have been scaled up. This is due to inappropriate or poorly implemented policies, plus gaps in environmental governance and institutions that create tradeoffs between long- and short-term goals. In many countries, such deficiencies have included insecure land rights, inadequate institutions for natural resource management and a plethora of distortions favouring large farms at the expense of smallholder farmers (Heath and Binswanger 1996; Lutz 1998; FAO 2011). Only transformation that is inclusive and

environmentally sensitive can be sustainable in the long term.

## **Threats arising from rural and structural transformation**

The effects of rural and structural transformation – notably urbanization and intensification of production – engender multiple environmental threats through increasing pressures on natural resources. Transformative processes are often matched by biodiversity loss, air and water pollution, and slum-growth issues (e.g. sanitation and waste management) (Roberts 2004). Each of these poses serious risks to humans and the natural environment, eroding the capital upon which future development depends. Rural and structural transformation and environmental degradation do not go hand-in-hand, however: suitable, policies, investments and innovations – especially in land rights of smallholders (see chapter 9) – can enhance environmental sustainability as production intensity increases (Tiffen et al. 1994).

With increased commercialization of agriculture, the pressure to intensify production rises, frequently degrading the soil – unless incentives and capacities are built – and exacerbating off-site effects such as groundwater depletion, agrochemical pollution and loss of biodiversity.

Further, as land pressures intensify the increased use of marginal land, damage to ecologically fragile systems is likely. Associated urbanization and rural-urban migration trends have worsened environmental vulnerabilities in cities and surrounding areas, as rising demand for urban housing against sluggish supply may force migrants to settle in ecologically sensitive and overcrowded areas (Awumbila et al. 2014).

Other examples of environmental threats from rural and structural transformation include habitat destruction and displacement of human and animal populations linked to hard-infrastructure projects, dietary shifts towards meat and dairy, increased demand from urban populations for environmental services, and

increased waste associated with changing consumption patterns.

Yet transformation may also have positive environmental effects, and some have argued that increases in environmental degradation during transformation are ultimately overcome as an economy reaches a post-industrial phase (Baker 2006). Partnerships between environmental groups and businesses and use of win-win opportunities (where greater resource efficiency lowers operating costs) can drive these changes. Equally, where production intensification processes have been accompanied by investment in conservation technologies and institutions, it has been shown that soil fertility can be restored and enhanced during transformation processes (Boserup 1965; Pingali et al. 1987; Tiffen et al. 1994).

Nonetheless, environmental threats should not be ignored as they show the long-term costs of transformation – degradation, loss of resources and biodiversity – undermining the prospects of future generations to maintain standards of living. In the long term, the costs of unsustainable transformation could outweigh the immediate benefits: annual real economic costs of agricultural soil degradation have been estimated at 2.5-4 per cent of real gross domestic product in Ghana (Fredua 2014). In Uganda, the cost in terms of gross national income of environmental degradation has been conservatively estimated at 4-12 per cent (Moyini et al. 2002). Promoting more sustainable transformations can bring high upfront costs, however, over the long term it is the only viable option.

#### **Lack of environmental sustainability is a major barrier to inclusive transformation**

Environmental degradation is more than a consequence of economic changes – it is a major barrier to inclusive transformation. The loss of resources erodes the natural capital upon which rural people depend, in turn undermining rural and structural transformation. People in rural areas (especially the poor) are particularly reliant upon natural resources for their livelihoods, with most engaged in farming. Environmental damage has particularly important implications

for increases in poverty and lack of inclusion (Cavendish 1999).

Rural people face many interconnected environmental and climatic challenges. They are frequently the most vulnerable to the worst effects of climate change, their access to fertile agricultural land is declining, forest resources are shrinking, water scarcity is rising and declining fish and marine resources threaten nutrition and income generation (IFAD 2012). Up to 100 million people could be pushed back into poverty by 2030 (Hallegatte et al. 2015).

#### **Policies, investments and institutions for inclusive and sustainable transformation**

Implications for policy centre on the following four areas:

##### *Promoting sustainable use of natural resources*

- Smallholders in different regions of the world have adopted multiple, overlapping approaches that preserve biodiversity and protect soils while contributing to agricultural productivity. They include conservation agriculture, agro-forestry, integrated pest management, landscape approaches, integrated plant nutrient management and organic agriculture.
- Such approaches are knowledge-intensive and must be tailored to local circumstances. To be viable at scale, they must rely on decentralized governance structures founded on empowered local groups and clear land access rights (see chapter 9). Local and indigenous knowledge (see Spotlight 8) must be linked to modern science and key institutions involved in natural resource management (CIRAN and UNESCO 1999; Pottier 2003; Kusimi and Yiran 2011). In particular, women are often the holders and conduits of key knowledge of local species, seeds and medicinal plants, and have a strong interest in managing water and marginal household land.

##### *Involving smallholders in national and local natural resource governance mechanisms*

- More specific strategies are needed at national and local levels. These strategies must emphasize and build mechanisms

for involving inclusive local organizations – especially farmers’ organizations and cooperatives – in policy and planning processes in key areas like natural resource management, climate change, spatial planning, agriculture and water. Empowering important rural actors – smallholder farmers, women, youth and indigenous peoples – is essential.

- More broadly, for these local actors to engage meaningfully, equitable relations must be established between decentralized authorities, collaboration built with civil society organizations and capacity of local authorities built to work with vulnerable groups, particularly smallholders (IFAD 2015).
- Links between local strategies and an enabling international governance agenda, where responsible investment safeguards are in place and respected, will be crucial.

#### *Developing global environmental governance mechanisms*

- Issues of environmental and climatic sustainability are global, and so solutions must be global as well. Rural communities in developing countries are particularly vulnerable to climate change and environmental degradation from the displacement of unsustainable environmental practices of multinational companies. In a globalized world, local authorities who try to protect the environment will be disadvantaged in attracting foreign investment.
- At the global level, inability to reach international agreements with binding targets and financing commitments has long undermined environmental sustainability. While these failures are well documented (e.g. Baker 2006; Adams 2009), less attention has been paid to key issues such as biodiversity loss. The Biodiversity Convention has been in force since December 2003 but is seen as having little practical impact (Dresner 2008) in preventing biodiversity decline (UNEP 2012). International agreements, with

associated binding targets recognizing the principle of common but differentiated responsibilities, and specific financing mechanisms will be a precondition for globally addressing environmental sustainability.

#### *Addressing and mitigating environmental threats associated with transformation*

- Integrated rural-urban planning – avoiding development dichotomies between the two sides – must be part of any sustainable rural and structural transformation (Hussein and Suttie 2015). Issues that must be addressed include paying for environmental services, acknowledging the pluralistic nature of natural resource rights and creating partnerships between rural and urban resource users. Also important will be the role of small and intermediate cities in maintaining flows of goods and services between rural and urban people, as well as providing centres to mitigate pressures associated with flows of migration from rural areas to large cities. These cities have often been associated with more inclusive and sustainable patterns of development (Tacoli 2015).

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## CHAPTER 9

# Land and natural resources



## Summary

Land and natural resources (primarily forests and water) play critical roles in economic and rural transformation. As populations and economies grow, the first natural response is to expand cultivation into former forests and rangelands and use the most readily available water sources in agriculture and the urban sectors. At that stage of development, customary and local institutions are usually adequate to allocate resources and manage conflicts between uses and users.

Over time, areas with the densest populations and best access to expanding urban markets are the first to encounter constraints on available land and experience declining yields, degrading water and forests, and rising resource conflicts among competing uses. Innovative farmers in those settings use new technologies and external inputs to intensify production and reverse degradation, if they have secure rights to their land. Markets for land rental or sale and new institutions for water, rangeland and forest management may develop spontaneously or through explicit government action. These processes have the potential to lead to sustainable, resilient and inclusive transformation – or to continued degradation, growing inequality of distribution and procedure, dispossession of the poor and vulnerable, and armed conflict.

Of the three resources, land is most important as an input into agriculture and can be held as individual or group property. Forests produce the widest array of products, from high-value timber for export markets to a wide variety of subsistence products and ecosystem services. Water is important in all sectors and populations, and has the strongest public good characteristics. Agriculture, forestry and livestock grazing are substitute land uses during different stages of transformation: forestry gives way to agriculture in the early stages and forestry becomes more important in the later stages, as forest ecosystem services become more highly valued and as rural populations start to decline. Forests are also natural sources of social protection, particularly for the poorest members of society.

As they unfold, transformation pathways create high risks to inclusion and to sustainable resource use. These risks can lead to scarcity, degradation, conflict, social action and inequalities of access and control over resources. Such outcomes signal the need for more formalized institutions and deliberate policy action.

The chapter focuses on these three resources in developing countries because of their importance to structural and rural transformations and to the livelihoods of rural communities, and smallholder farmers in particular. These resources are all subject to ongoing changes in scarcity, inequality of access and rights, and new governance alliances focused on improving sustainability and inclusiveness. The two transformations require – and by turns induce – deep changes in patterns of land and natural resource use between individuals and groups with different objectives and capacities, including different rights to initial capital, decision-making authority, bargaining power, access to local and national markets, and access to governance systems. These patterns differ across resources, raising distinct challenges, to which individuals, communities, local authorities, national governments and international bodies have responded in different ways. Civil society, too, has been crucial in fostering collective forms of resource governance as well as social movements among members of vulnerable groups.

Large areas of land have seen sustainable intensification of agricultural production based on the introduction or promotion of new species and varieties of crops and livestock, agronomic and rangeland improvement, agroforestry, soil conservation, conservation agriculture, integrated pest management, horticulture, fodder crops and aquaculture. Consequently, farming systems have become more diversified, soils are more productive, chemical inputs are used less, and soil and water pollution has declined.

About half the countries in the world are engaging in some form of land tenure reform, and almost 1 billion farmers have already benefited from those reforms. Many countries have recently adopted tenure reforms that

recognize a continuum of property rights and tenure insecurity, with some specifically strengthening the land rights of women and minority ethnic groups. Underlying all successful programmes have been major investments in the infrastructure of land registration, including cadastral surveys, computerized records, training in legal rights and resolution of land disputes. One of the main responses to the rapid rise of large-scale land investment has been in assessments, guidelines and codes of conduct by multilateral organizations and bilateral development agencies, to guide governments of target countries and investors.

For forests, designation of protected areas, devolution of forest management, and greater use of agroforestry have been the main responses to the challenges of deforestation, forest degradation and increasing scarcity of forest goods and services.

In more detail, the amount of forest area designated for biodiversity conservation increased in all regions in 1990-2015, with the largest areas now found in South America, Asia, Europe, North and Central America, Africa and Oceania (in that order). Thirteen per cent of the world's forest area has now been designated for conservation. Co-management, as well as joint, community and decentralized management of forests, as well as payments for ecosystem services, have been pursued as alternatives for balancing the public benefits of protection with the private benefits of production. The advent of REDD+ (Reduced Emissions from Forest Degradation and Deforestation) under the United Nations Framework Convention on Climate Change has created new international interest in the ecosystem services of tropical forests, particularly their carbon storage, carbon sequestration and climate change adaptation characteristics. Some progress has been made in implementing REDD+, with over 200 REDD+ demonstration projects launched in over 40 countries and government-led REDD+ programmes developed in several countries and regions.

The focus of water resource development has shifted from expanding large infrastructure to water demand management, water use efficiency

and improving water governance. With a few notable exceptions, construction of large-scale dams has slowed, even if concerns about the impacts of carbon-based fuels on climate change are contributing to new interest in dams for hydropower generation. However, new concerns are emerging over the impacts of reservoirs and loss of water for downstream communities.

Ecosystem management is advocated as important for more efficiently and sustainably managing water resources. Increasingly important is integrated water resource management involving managing water at the basin or watershed level, optimizing supply from surface and groundwater supplies, managing demand through cost recovery and decentralized management, providing equitable access through user organizations and involvement of women and marginalized groups, establishing policies such as the 'polluter-pay' policy and water regulations, and intersectoral approaches to decision-making that vest authority with those who have a stake in the process.

On cross-cutting aspects, transformation processes tend to exaggerate initial differences in natural resource access and control between groups. Without attention, these differences can lead to new forms of impoverishment, food insecurity and social conflict.

Reforms of land, water and forest tenure can help to mitigate the differences. Land reforms are undertaken to address social conflicts, growing inequality or persistent biases against women, indigenous peoples or other cultural-defined groups. Governance is thus critical for the sustainability and inclusiveness of transformation pathways: customary and indigenous systems can be effective and inclusive where they are recognized as legitimate, empowered to deal with external threats and held accountable to statutory laws and international principles. Statutory systems need to monitor and respond to internal and external pressures, ensuring that resource users have incentive to invest in and conserve resources, and manage spillover effects.

Markets can promote efficient use and equitable access to resources, but should be transparent and ensure consistency with social

goals and fundamental rights. Collective action and social movements can be important for governing common resources and providing access to public decision-making processes. All three natural resources have been the subject of multistakeholder dialogues to develop new standards, codes of conduct and guidelines for responsible governance. Some of those standards have been codified in international treaties and national laws, but need to be implemented well and enforced strongly. The initiatives lack, however, special consideration for gender equality and women's rights. International agencies and donors can help develop capacity of governments, civil society and the private sector to support enhanced and sustained implementation.

### Procedural and distributional inclusiveness

Crop yields on current cultivated land would need to increase at an annual 2.4 per cent to meet the needs of the roughly 9 billion people who will inhabit our planet in 2050.

Given current annual yield growth of only 0.9-1.6 per cent for the world's major food crops, the world is almost certain to experience increased pressure on land and other natural resources over the next three decades (Ray et al. 2013). Unless addressed, these pressures could lead to greater inequities, conflict, poverty, hunger, reduced resilience and environmental damage.<sup>126</sup>

Since 2007-2012 when food prices rose and became more variable over time, and the impacts of climate change on food supplies became clearer, demand for land and other natural resources has seen dramatic increases, particularly in developing countries. Media headlines of "land grabs," "ocean grabs" and "water wars" reflect heightened global concern over the governance of land and other natural resources. Large-scale foreign investment in developing countries is a particular concern.

Behind the drama is the process of economic structural transformation, which features deep changes in access to and use of natural resources on which most rural livelihoods are based, especially those of smallholder farmers. The

key issues are encapsulated in four questions: what are the major trends in use and access to key natural resources? Which challenges linked to structural and rural transformations are emerging, and why? What are the major responses to these challenges, and what are their impacts? And, which policies and investments can enhance positive impacts and mitigate negative effects?

A core argument used in addressing these questions is that one of the best ways to promote inclusive and sustainable transformations is to include procedural and distributional inclusivity in those changes. Five propositions on land and natural resources in transformation underpin the argument that:

- The use, management and investment in land and natural resources are codetermined with the trajectory and inclusiveness of structural and rural transformations.
- The way that land and natural resources are governed shapes resource use, technologies and the trajectory and inclusiveness of transformation.
- Entrenched social groups may perceive real benefits from current patterns of land and natural resource access and use, and act to deter more inclusive processes.
- Institutions that govern land and natural resources can change due to long-term, evolutionary processes and to radical policy initiatives.
- External agencies can play key roles in inclusive transformation by promoting international best practice and by responding to policy opportunities that open in certain countries.

This chapter discusses impacts of governance processes on marginalized and vulnerable groups, along with how deliberate actions by governments, firms and civil society have created new opportunities for these groups. It looks particularly closely at minority and indigenous ethnic groups, local communities and women. Its focus is on three resources especially important to developing countries' structural transformation, and to smallholder farmers in particular – land, forests and fresh water –

because of their importance to transformation processes and to the livelihoods of rural communities. These resources are all subject to ongoing changes in scarcity, inequality of access and rights, and new governance alliances focused on improving sustainability and inclusiveness.

The three resources are crucial in economic and rural transformation. Land is most important as an input into agriculture and can be held as individual or group property. Forests produce the widest array of products, from high-value timber for export markets to a wide variety of subsistence products and ecosystem services. Water is important in all sectors and populations, and has the strongest public good characteristics.

Agriculture, forestry and livestock grazing are substitute land uses during the different stages of transformation, with forestry giving way to agriculture in the early stages and forestry becoming more important in the later stages as forest ecosystem services become more highly valued and as rural populations start to decline. Forests are also natural sources of social protection, particularly for the poorest members of society.

Inequalities in land and natural resources are important to the processes of transformation for many reasons. As productive assets, natural resource inequalities can mean that agents with endowments of other inputs – labour, skills, capital – cannot be fully productive. Perhaps more important, inequality in resources often translates into inequality in access to political power, which maintains the status quo at the expense of investments in economic diversification and education. Land inequality in particular can translate directly into lack of inclusivity. Also very important and subject to many of the same pressures are genetic resources, rangelands, fisheries and minerals (box 9.1).

The next section considers past and likely future trends and patterns in access to land, forest, and water resources across the globe, with a particular focus on equality (or lack of), followed by a review of responses to them. Impacts of these responses are then considered.

## Trends, patterns and challenges

Structural and rural transformations require – and in turn induce – deep changes in patterns of land and natural resource use between individuals and groups with different objectives and capacities, including different rights to initial capital, decision-making authority, bargaining power and access to local and national markets and to governance systems. These patterns differ across resources, raising distinct challenges.

### Land

One of the most pressing and persistent needs facing developing countries is for institutions and technologies to support sustainable intensification of agriculture – producing more output per unit of land area while reducing negative environmental impacts and maintaining future production capacity (Reardon et al. 1999; Otsuka and Place 2014; and box 9.2). A few Asian countries have already reached, or are soon to reach, the turning point at which their rural population begins to decline, but African countries will continue to have growing rural populations for decades to come. Some parts of Africa have relatively low population densities, but other parts already have extremely high rural population densities, including the East African highlands, most of Nigeria, and the Lake Victoria area (Jayne et al. 2014b). New technologies and institutions are needed to accommodate these growing rural populations without worsening the problems of soil erosion, depletion of soil organic matter and water pollution.

Worldwide during 1960-2000, most high-income countries saw increases in average farm size, while most low- and middle-income countries experienced decreases (table 9.1). With agricultural land area relatively fixed, these changes equated to reductions in rural populations in high-income countries and increases in rural populations in low- and middle-income countries. Average farm sizes vary greatly across regions: 1.0 hectare in East Asia; 1.4-2.4 hectares in South Asia, South-East Asia

### BOX 9.1 Genetic resources, rangelands, fisheries and minerals

*Genetic resources.* Public policy concerns in this area tend to focus on conservation (ex situ and in situ), sustainable use and benefit sharing. Genetic improvement of food crops and domesticated animals has long been a key source of food production increase, although techniques like trans-genetics are still hotly contested (McIntyre et al. 2009). Genetic resources of all kinds are the focus of the United Nations Convention on Biological Diversity (including the Cartagena Protocol on Biosafety and the Nagoya Protocol on Access and Benefit-sharing – table 9.6), while plant genetic resources used for food and agriculture are the focus of the International Treaty on Plant Genetic Resources for Food and Agriculture. More information about plant genetic resources is available in the State of the World's Plant Genetic Resources (FAO Commission on Genetic Resources for Food and Agriculture 2010).

*Rangelands.* It may appear ironic that rangelands in most regions of the world are contracting and degrading at the same time as demand for livestock products continues to increase in response to growth of populations and per capita incomes. Across Africa, North Africa, the Middle East, Central Asia, Central America and the Andes, pastoral production systems are contracting in response to expansion of large-scale commercial crop and mixed-farming systems. Intensive systems that integrate crops, livestock and trees are meeting the increasing demand in most regions, while cattle and sheep ranching are expanding into former forests in the South American lowlands.

Rangeland degradation is a common problem, even though many countries have established “national action plans” to combat desertification, with major emphasis on rangelands. The traditional systems that govern pastoral production are under internal pressure to accommodate more settled agriculture and external pressure to respond to more stringent marketing regulations and to accommodate large-scale agriculture. Conflicts involving pastoral groups are an unfortunate but avoidable consequence of such pressures (Herrera et al. 2014).

*Fisheries.* The world's fisheries are changing fast. At the global level, production from inland and marine capture fisheries has stabilized at about 85–90 million tons a year since 1995. Aquaculture production in contrast increased at an annual 6 per cent between 2002 and 2012, and will soon exceed production from capture fisheries. (Fish consumption per capita is higher in Asia than any other region.) Policies and institutions that govern aquaculture focus on sharing land and water resources, managing spillover effects between aquaculture and other land uses of land and water, managing invasive species and ensuring food safety (FAO Commission on Genetic Resources for Food and Agriculture 2010).

*Minerals.* Over the past decade, high commodity prices have fuelled a global expansion of mining and mineral extraction. Both artisanal and small-scale mining (ASM) and large-scale mining are common in developing countries. The estimated number of ASM miners is 180,000–200,000 in Ghana (50 per cent women), 109,000 in Indonesia (10 per cent women) and 30,000 in Peru (female share unknown). ASM is an important livelihood strategy for over 100 million people globally and is growing faster than large-scale mining (Eftimie et al. 2012; Buxton 2013).

Extractive industries pose inherent challenges for governance. Long investment cycles and high costs of physical infrastructure require secure long-term rights and, because governments usually classify minerals as public resources, mineral rights need to be negotiated between mining companies and governments. Mine operations also require land and water, which may be held under private or group tenure, with governance devolved to local arms of government or to customary institutions.

Sources: McIntyre et al. 2009; FAO Commission on Genetic Resources for Food and Agriculture 2010; Eftimie et al. 2012; Buxton 2013; Herrera et al. 2014.

**BOX 9.2 Structural transformation, natural resource governance and inclusivity – land**

In countries with abundant land and rural labour, increased food demand from population growth is largely accommodated by expanding agricultural production into more remote areas. Investment of labour in land clearing is an investment that creates temporary use rights that are protected by customary authorities. With low pressure from local or external populations and plentiful land supplies, land can often be administered effectively by local or customary authorities.

Over time, there is a gradual reduction in the amount of uncultivated land. With no change in land management, continued rural population growth causes land farm sizes to decrease, fallow periods to decline and soils to degrade. With this land scarcity and threat to sustainability, farmers have an incentive to increase production by intensifying land use through more labour-intensive methods, purchased inputs and land improvements to produce a more diverse set of outputs. Irrigation, tree planting and soil conservation structures can increase both production and conserve resources.

Whether this incentive translates into real investments and intensification, however, depends on land governance institutions, technology to hand and market access. Farmers will seek more secure individual land rights either through institutions or external interventions. The most innovative and commercially oriented farmers will be the first to vie for certificates, titles or other indicators of tenure security. At higher levels of land pressure, farmers will seek still more secure forms of tenure, and formal or informal markets will develop (purchase or rental). Recent reforms have introduced and applied the concept of a continuum of property rights – that is, there may be ways to enhance the security of customary rights and governments may support more or less complete forms of statutory rights.

Sources: Baldwin et al. 2014; IFAD 2015.

and SSA; 4.9 hectares in West Asia and North Africa; 10.7 in Central America; 32.3 hectares in Europe; 111.7 hectares in South America; and 178.4 hectares in the United States (Wegner and Zwart 2011).

Many analysts trace the evolution of use, management, tenure and inequality in land to three historical periods: pre-colonial, colonial and post-colonial (Binswanger et al. 1995; Deininger 1995, 1997). In countries like El Salvador, Guatemala, South Africa, India, the Philippines and Zimbabwe, colonial settlement created massive inequalities in land ownership, especially where large plantations operated with cheap local labour. Dual systems of land administration were put in place in many places, with large-scale commercial agriculture administered through statutory institutions and smallholder subsistence-oriented agriculture by customary authorities (box 9.2). Dual

land tenure is but one of several cases of land inequality (table 9.2).

Countries and regions differ greatly in the degree of inequality of land ownership. Based on land-ownership Gini coefficients in 111 countries, the highest inequality a decade or so ago was in South America (mean Gini coefficient of 79.9), followed by Central America (72.3), Caribbean (68.1), North Africa and Middle East (65.1), Western offshoots (Australia, Canada, New Zealand and the US) (64.5), Western Europe (63.9), South and East Africa (62.7), South Asia (53.7), Scandinavia (51.0), Eastern Europe (49.3), South-East Asia (47.9), West and Central Africa (45.2) and East Asia (38.4) (Frankema 2006).

Empirical studies have identified ways in which land inequality can affect the pace of economic transformation: reduced investment in education, lower efficiency of input markets, less development of industries that rely on

TABLE 9.1 Number of countries exhibiting a decrease or increase in the average size of agricultural holdings, 1960-2000

Country/region	Decrease	Increase	Neither clear increase nor decrease
High-income countries	6	25	4
<b>Low- and middle-income countries by income group</b>			
Low-income countries	12	2	1
Lower-middle-income countries	24	2	0
Upper-middle-income countries	19	5	1
<b>Low- and middle-income countries by regional group</b>			
East Asia and the Pacific	9	1	0
Latin America and the Caribbean	18	7	2
Middle East and North Africa	10	0	0
South Asia	5	0	0
Sub-Saharan Africa	15	3	1

Source: Lowder et al. 2014, p.9.

TABLE 9.2 Causes and implications of land inequality

Cause of inequality/non-inclusiveness	Examples	Implications for inclusiveness of transformation	References
Colonialism created a dual system of large plantations vs. subsistence agriculture	El Salvador, Guatemala, South Africa, Zimbabwe, Malawi, Brazil	Dualistic rural economies reduce provision of public services to smallholders, lowering productivity growth, slowing labour movement to industry and reducing inclusivity.	Binswanger et al. 1993; Banerjee and Iyer 2005; Kourtellos et al. 2013a
Culturally defined groups	Scheduled Castes and Scheduled Tribes of India	Greatest conflict and lowest education in districts with high land inequality, poorest soil and highest share of Scheduled Tribes. Both reduce development and inclusivity.	Gomes 2015
Long-term residents versus recent immigrants	Cocoa area of Côte d'Ivoire	Immigrants have experienced social exclusion and tension, contributing to civil war and a long delay in transformation.	Mitchell 2011
Ethnic groups in remote, international boundary areas	Hill tribes of Thailand (Karen, Hmong)	Hill tribes have been excluded from benefits of Thai citizenship. Community forestry has been promoted and accepted as a way to strengthen their forestry and citizen rights.	Van der Geest 2003
Gender	Women in many parts of the world	Women may be systematically disadvantaged in all elements of transformation, and left in low-return rural employment.	Archambault and Zoomers 2015

external finance, higher tariffs and greater social conflict.<sup>127</sup> Box 9.3 presents two propositions about the links between land inequality, conflict and transformation.

The last decade has seen a rapid increase in foreign investment in land in developing countries. These investments seem to have been driven by many factors, including concerns about future food prices and food security in investor countries, recognition of the growing demands for food in Africa, and biofuel mandates that countries around the world instituted during 2005-2009. As discussed by Deininger and Byerlee (2011), most of the top target countries have relatively low population densities and land governance systems that provide relatively weak tenure security and low recognition of customary tenure.<sup>128</sup> These investments can disrupt existing land use and livelihood systems, particularly where the authority of customary tenure systems are not recognized by statutory law.

Simultaneously, some African countries such as Ghana, Kenya, Malawi and Zambia saw increased investment by urban residents in medium-sized farms. As with many large investments, these medium-scale investors tend to cultivate low shares of their land. In Zambia, Jayne et al. (2014a) found that, on average, farms of 0-2 hectares cultivated 91 per cent of their landholdings, farms of 5-10 hectares 50 per cent and farms of 20-100 hectares only 11 per cent. In Malawi, these farms originated both from growth of smaller farms and absorption of smaller into medium-sized farms (Anseeuw et al. 2016). There is therefore a valid concern that the growth of the cohort of medium-sized farms will occur at the expense of small, subsistence-oriented farms.

These changes in international and national investment in rural land are a double-edged sword. At best, the investments bring in much-needed inputs, infrastructure, technology, markets and extension services to small and large farms in isolated and sparsely populated areas. At worst, the investments displace large numbers of smallholder farmers and diminish both primary and secondary land rights of groups already politically and economically

marginalized, thus deepening vertical inequality and potential for conflict, and diverting investment and policy attention away from smallholder farmers and the value chains on which they rely (De Schutter 2011).

### Forests

Forests perform four main roles in transformation: production of raw materials – timber, fuelwood, gathered foods, medicinal plants and housing materials – used in agriculture, industry and domestic life; clearance for agricultural expansion and soil fertility management during the early periods; production of ecosystem services of value to expanding industrial and service sectors such as biodiversity conservation and regulation of water cycles and the climate; and provision of subsistence food and cash income for people excluded from the benefits of transformation.<sup>129</sup>

Forests provide full-time employment for few people but meaningful livelihood benefits for many. FAO (2014) estimates that the global forest sector employs only 13.2 million people in the formal sector and 41 million informally, forest products make a valuable contribution to sheltering at least 1.3 billion people, 2.4 billion people cook with wood or wood-fuel and 2.8 billion people use traditional medicines, mainly gathered in forests. Men hold most of the full-time jobs, and women are the main gatherers of non-timber forest products.

Forests contribute a larger share of income in poorer countries, primarily in the informal sector and for the most vulnerable (FAO 2014). In a comparative study of environmental income in forest-frontier areas in 24 developing countries, Angelsen et al. (2014) found that forest income accounted for an average of 22 per cent of total household income across all income groups. Relatively wealthy people earned more income from forests than poorer people in absolute terms, while poorer people tended to earn a higher proportion of their income from forests. Schaafsma et al. (2014) found similar findings in a study of the Eastern Arc Mountains of Tanzania.

Long-term trends of conversion of land from forest to agriculture, stabilization of forest cover and reforestation/afforestation

**BOX 9.3 Links between land inequality, conflict and transformation – two propositions**

The first proposition is that, everything else equal, locations with greater inequality in resource benefits tend to be subject to greater social conflict and slower economic transformation. The second is that areas that have suffered conflict over land inequalities often implement land reforms during the post-conflict period. We support the proposition with an appeal to theoretical literature as well as to evidence from Paraguay, Colombia, Brazil and India.

The case of Paraguay, which now has one of the most unequal land distributions in the world, suggests that a dualistic agrarian structure is likely to be reinforced over time by natural processes of land accumulation (Henderson et al. 2014).

Albertus and Kaplan (2013) examine the case of land reform and long-term civil war in Colombia. They find empirical evidence to support “the paradox of partial reform” – land reform can be an effective counter-insurgency policy but may be politically difficult to implement at sufficient scale because it threatens the status quo. Incomplete land reform can generate positive effects outweighed by negative spillovers, leaving matters worse than with no reform. Alston et al. (2000) found a similar effect of incomplete land titling in Brazil.

Gomes (2015) examines district-level data from India to examine factors affecting the severity of the Naxalite-Maoist conflict in India, which started in 1967 as a dispute between tribal farmers and landlords and has since joined with a Maoist movement and spread to nearly 200 districts in 18 states. In a multivariate analysis, he finds that the severity of conflict is positively related to land inequality, the percentage of Scheduled Tribes in the district, low economic growth rates and the presence of landlords.

More widely, Albertus and Kaplan (2013) review the literature and find that scholars have linked land and land reform to rebellion in El Salvador, Nepal, Peru, Philippines, South Africa, Viet Nam and Zimbabwe. The literature suggests several causal relationships. Rebels may gain support by promising to redress inequalities if they take power, while an incumbent or prospective government can attempt to secure votes by promising land reform as an alternative to violent conflict. High land inequality that creates unemployment and low rural incomes reduce the opportunity costs for young people to join rebel groups and make them more likely to do so, while increasing the possible returns from revolutionary change. An abundance of primary commodities with high cash value, such as minerals or timber, can make it easier to finance rebel campaigns.

Sources: Alston et al. 2000; Albertus and Kaplan 2013; Henderson et al. 2014; Gomes 2015.

have been observed in many countries and are characterized as “forest transitions.” Rudel et al. (2005) note two types of forest restoration: economic development restoration, where increases in agricultural productivity – coupled with shifts of population from rural to urban areas – lead to abandonment and reforestation of cultivated land; and forest scarcity transition, where the scarcity of forest products pushes up their value and prompts tree planting on land previously cleared for agriculture. A variant of forest scarcity restoration is that policymakers and the general public increasingly recognize the value of the regulatory and support functions

of forests and allocate resources for forest conversion and tree planting. While most developing countries are still in the deforestation phase, countries such as China, Costa Rica, India, Nepal, Panama and Viet Nam, are in the restoration phase. Table 9.3 summarizes information on three examples of inequality and lack of inclusion in forest management and transitions.

TABLE 9.3 Three cases and implications of forest inequality

Cause of inequality/ non-inclusiveness	Examples	Implications for transformation	References
Eviction of indigenous people from areas designated as state forests for nature conservation or timber concessions	The Krui area of Sumatra, Indonesia where communities have long practised <i>damar</i> agroforestry on land designated as state forest.	Evictions may be justified on the basis of their contribution to rural transformation, but will tend to increase inequality, especially where no compensation is paid.	Kusters et al. 2007
Lands formerly used by smallholders without secure tenure allocated to large ranches or farms	Brazil in the 1980s-1990s when forest clearance was the primary source of expansion for soybean and ranching.	Allocation of sparsely populated forest areas to ranches or farms may be justified on the basis of transformation. However, these changes mean losses to poor people without title.	De Oliveira 2008
Women excluded from forest management institutions	Women in Uganda are largely excluded from forest governance despite their dependence on forests for subsistence, safety nets and income.	The safety net function of forests is undermined by transformation if the main beneficiaries are not involved in management.	Banana 2012

## Water

Water availability is most severely constrained in North Africa and West Asia, where most countries receive less than 500 m<sup>3</sup> of renewable water resources per person a year, compared with the 7,500-50,000 m<sup>3</sup> per person a year in most OECD countries, the Americas and South-East Asia (WWAP 2015, p.12).<sup>130</sup>

Water performs similar roles to land in economic transformation: its management and use contribute to expanding agricultural production in the early stages of transformation, limits to its availability check uncontrolled use but can lead to competition and degradation of water resources, the shift of water from agriculture to industry and to urban areas is necessary for them to expand (including through hydropower production) and later stages of transformation require highly efficient use of water in all sectors and areas. Three differences between water and land in transformation are significant, however: safe water is essential for human life, water has much stronger public good characteristics and markets have not been proven the best way to allocate water among competing uses.<sup>131</sup>

Development trends over the last 50 years have entailed increasingly unsustainable

increases in water use, even in countries with successful and inclusive transformations.

Groundwater irrigation saw near-linear growth during 1950-2005, with irrigation area doubling and water withdrawals tripling. Of the 3,800 km<sup>3</sup> of fresh water withdrawn from rivers, lakes and groundwater sources each year, approximately 71 per cent is used for irrigation, 20 per cent for industry and 9 per cent for municipalities. While agricultural productivity grew faster than human populations over that time, that growth came at the cost of increased pollution, drying of rivers, damage to freshwater fisheries and degradation of land and water resources (CAWMA 2007). Regional patterns of groundwater irrigation are described in table 9.4.

By 2050, global water demand is projected to increase by another 55 per cent, mainly due to increased demand from manufacturing, energy production and domestic use (WWAP 2015, p. 2). Rosegrant (2014) predicts that worldwide by 2050, 52 per cent of the population, 49 per cent of grain production and 45 per cent of gross domestic product will be at risk due to water stress. Climate change will exacerbate that stress. For example, Arnell (2004) projected that climate change and population growth together

TABLE 9.4 Global survey of groundwater irrigation

Region	Groundwater irrigation		Groundwater volume used	
	Million ha	% of total	km <sup>3</sup>	% of total
Global total	112.9	38	545	43
South Asia	48.3	57	262	57
East Asia	19.3	29	57	34
South-East Asia	1.0	5	3	6
Middle East and North Africa	12.9	43	87	44
Latin America	2.5	18	8	19
Sub-Saharan Africa	0.4	6	2	7

Source: Global Water Partnership 2012, derived from Siebert et al. 2010.

will increase the number of people experiencing water stress from 0.4-1.7 billion in the 2020s to 1.0-2.7 billion in the 2050s.

Increased use and competition for water has brought about conflict and increased inequalities within and between social groups, measured in terms of procedure and distribution. The Pacific Institute Water Conflict Chronology Map reported 37 water conflicts in 2012, 20 in 2013 and 16 in 2014. These “water wars” threaten international peace, all levels of government and business development (Balch 2014). Water conflicts often cross sectoral boundaries: for example, artisanal, small-scale and large-scale mining are major sources of water pollution in developing countries (table 9.5). Water conflicts also occur at the micro scale, with women often bearing the brunt of water provision within households and local residents bearing the cost of managing the catchment that provides water to downstream residents (e.g. Crow et al. 2012).

Water problems have gone underground, literally, across the world. It is estimated that 40 per cent of global irrigation uses groundwater (HLPE 2015). The World Bank (2010) estimates that over the last 50 years India has become dependent on groundwater for 60 per cent of its irrigated agriculture and 85 per cent of its drinking water. Millions of private wells have been constructed, partly due to deficiencies in

public water supply systems, improvements in pump technology and subsidies for the electricity used to power water pumps. Aquifer levels are falling across the country, with a 2004 nationwide assessment showing 29 per cent of groundwater blocks to be overexploited. Similar pressures have arisen in much of the rest of South Asia, northern China, Mexico and the Middle East (CAWMA 2007, p. 9). Overexploitation is one of the factors contributing to arsenic pollution of alluvial aquifers that now affects at least 30 per cent of public wells in the heavily populated Brahmaputra River basin of India and Bangladesh (Mahanta et al. 2015).

### Responses

Individuals, communities, local authorities, national governments and international bodies have responded in different ways. Technical, organizational and political requirements for effective response vary greatly across the three resource types.

TABLE 9.5 Causes and implications of water inequality

Cause of inequality/non-inclusiveness	Examples	Implications for transformation	References
Allocation of water between countries in transnational watersheds	Blue Nile river shared between Ethiopia, Sudan and Egypt	Unresolved conflicts with Egypt over use of the waters of the Blue Nile delayed Ethiopia's irrigation and hydropower development for decades	Gebreluel 2014
Private wells replacing collective water tanks	Tamil Nadu, India	Wealthy farmers who invest in wells to extract groundwater remove important support for small reservoirs used by poor farmers. Wells are privately productive but bad for aquifers and surface water	Kajisa 2012
Mining extraction and processing, diverting and polluting water available downstream	Mines in highlands of Peru	Water quantity and quality have become a source of uncertainty and conflict between sectors	Budds and Hinojosa-Valencia 2012
Residents of informal urban settlements paying more for water than those with formal municipal connections	Global	Poor slum-dwellers pay up to 18 times more per litre than those with private connections. Water has become a major cost of slum living	Sima and Elimelech 2011
Women with the biggest role in household water provision, but lacking power and resources to make water investments	Western Kenya	Water collection is a heavy use of women's time that constrains intensification of agriculture	Crow et al. 2012

## Land

Evidence of sustainable intensification of agricultural production has accumulated over the decades, beginning with Boserup (2005) and Ruthenberg (1971) and continuing with Pingali et al. (1987). Pretty et al. (2011) identified and reviewed 40 projects and programmes from 20 African countries where sustainable intensification was promoted or practised in the 2000s. Initiatives included introduction and promotion of new species and varieties of crops and livestock, agronomic and rangeland improvement, agroforestry, soil conservation, conservation agriculture, integrated pest management, horticulture, fodder crops and aquaculture. Results included more diversified farming systems, more productive soils, less use of chemical inputs and less soil and water pollution. Key elements of success across the 40 projects were effective collective action, information exchange, participatory technology development, novel partnerships between

donors and the private sector, a focus on women's particular needs and unique social capital, and enabling policies and public sector support. Heath and Binswanger (1996) found that land degradation in Colombia was mostly caused by distortive policies rather than the natural responses of farmers to population pressure.

About half the countries in the world are engaging in some form of land tenure reform (Alden Wily 2012), and around 1 billion farmers have already benefited from them (Lipton 2009). These reforms may be classified in six general types over the last five decades, with examples in parentheses:

- Redistribution of private rights from large to small and landless agriculturalists, usually without full compensation to the former owners (Ethiopia, India and Sri Lanka).
- Market-assisted reforms that redistribute land on the basis of sales between willing buyers and willing sellers (Argentina, Brazil,

Guatemala, Honduras, Indonesia, Liberia, Malawi, Namibia, Peru, the Philippines and South Africa).

- Distribution of land from collective farms to former farm workers or tenants (former USSR countries in Central and Eastern Europe, China, Cambodia, Lao People's Democratic Republic and Viet Nam).
- Large-scale registration of individual title in national registries (Ethiopia, Rwanda, Madagascar, Viet Nam, Mexico, Thailand, Namibia and Tanzania).
- Statutory recognition of customary land rights institutions (Botswana, Ghana, Mozambique and Tanzania).
- Flexible land tenure arrangements that have more stringent requirements for registering more formalized tenure arrangements (Mali, Namibia, Tanzania and Viet Nam).<sup>132</sup>

Underlying all successful programmes have been major investments in the infrastructure of land registration, including cadastral surveys, computerized records, training in legal rights and resolution of land disputes (Byamugisha 2013). IFAD, the International Land Coalition and the World Bank have provided major support to those initiatives.<sup>133</sup> IFAD (2015) summarizes IFAD support to land policy dialogues in Lao People's Democratic Republic and in East and Southern Africa, and project financing in Haiti, Malawi, Nepal, Niger and Rwanda.

Many countries have recently implemented tenure reforms that recognize a continuum of property rights and tenure insecurity (Brueckner and Lall 2015). In Mali, for example, customary tenure is prevalent in rural and peri-urban areas, and is enforced by village chiefs and councils. An attribution letter recognizes the transfer of public land to an individual and provides a modest amount of tenure security. More formal and secure rights are provided by rural or urban residency permits, which provide temporary use rights, and by title, which provides full property rights. Implementation of this system has resulted in distinct tenure security zones, with the highest security near urban areas and weakest on the rural fringe (Selod and Tobin 2013). Similar gradations of land tenure are found in Viet Nam (Brueckner

and Lall 2015), Tanzania (Deininger 2015) and Namibia (Matthaei and Mandimika 2014).

In many countries, women have legal rights to own land according to statutory law, but customary law does not recognize these rights. Without proper mechanisms to enforce statutory laws – Burundi's Transitional Programme of Post-Conflict Reconstruction is an example of legal clinics supporting rural women in this area – women can be left without access to land or it can be taken away from them by male relatives.

A few land reforms have focused on the land rights of women and minority ethnic groups. Such reforms seek to redress some of the gender inequalities in land rights, with women previously holding only secondary rights to land they gain through others, primarily husbands, other male relatives or local chiefs. Women's rights thus tend to be weaker and vulnerable to loss when their husbands die or they are divorced (Archambault and Zoomers 2015, p. 4). Land registration programmes in Ethiopia, Rwanda and Peru explicitly sought to strengthen women's land rights through the issuance of joint titles. The IFAD-supported Women's Land Rights Project provides legal support to women and works with communities and village groups to secure women's access to land (IFAD 2011).

One of the main responses to the rapid rise of large-scale land investment has been the development and promotion of assessments, guidelines and codes of conduct by multilateral organizations and bilateral development agencies to guide governments of target countries and of investors.<sup>134</sup> The Voluntary Guidelines for Responsible Governance of Tenure for Land, Fisheries and Forests in the Context of National Food Security of the Food and Agriculture Organization of the United Nations (FAO) are perhaps best known. Table 9.6 summarizes some of the main areas covered by the Voluntary Guidelines and compares them with those of other major international initiatives to develop standards for resource use, including the 10 commitments of the International Land Coalition.

## Forests

Designations of protected areas, devolution of forest management and greater use of agroforestry have been the main responses to the challenges of deforestation, forest degradation and increasing scarcity of forest goods and services. The amount of forest area designated for biodiversity conservation increased in all regions during 1990-2015, with the largest areas protected in South America (130 million ha), North and Central America (127 million ha), Africa (92 million ha), Asia (86 million ha), Europe (53 million ha) and Oceania (36 million ha). Thirteen per cent of the world's forest area is now designated for conservation (FAO 2015a).

Co-management, as well as joint, community and decentralized forest management, and payments for ecosystem services, have been implemented as alternatives for balancing the public benefits of protection with the private benefits of production. Progress with forest devolution has been most marked in Latin America, due in part to the strength of the region's indigenous peoples' rights movement, the rise of more accountable governments, international support and recognition of the important environmental functions of forests. In Asia, devolution of forest governance to community and user groups has progressed furthest in India, Indonesia, Nepal and the Philippines, while forest ownership has devolved to individual households in Viet Nam (Lawry et al. 2012). East Asia and Oceania has the highest proportion of forests under private ownership (42 per cent) (FAO 2015a).

In much of Asia and Africa, devolution is still very incomplete, with government forest agencies slow to release authority, as exemplified by Indonesia (Lawry et al. 2012). Payments for the ecosystem service functions of forests are being implemented at national or regional scale in China, Costa Rica, Ecuador, Mexico, South Africa and Viet Nam (Calvet-Mir et al. 2015). IFAD has supported research and pilot programmes on payments for ecosystem services, including the Green Water Credits project in Kenya and Morocco (<http://greenwatercredits.net/>), Rewarding Upland Poor of Asia for the

Environmental Services they Provide (<http://rupes.worldagroforestry.org/>) and Propoor Rewards for Environmental Services in Africa (<http://presa.worldagroforestry.org/>). All these projects focused on the potential for inclusive systems of payment for ecosystem services.

The advent of REDD+ under the United Nations Framework Convention on Climate Change has created new international interest in the ecosystem services of tropical forests, particularly the carbon storage, carbon sequestration and climate change adaptation characteristics of forests. The fifth assessment report of the Intergovernmental Panel on Climate Change in 2014 concludes that deforestation is one of the world's largest sources of greenhouse gas emissions, but that regrowth forest is also one of the world's largest carbon sinks (Smith et al. 2014, p. 827).<sup>135</sup>

Some progress has been made with implementation of REDD+, with over 200 REDD+ demonstration projects initiated in over 40 countries and government-led REDD+ programmes developed in several countries and regions. Concerns that REDD+ will undermine indigenous peoples' rights has led to agreement on the need for host-country governments to monitor compliance with social and environmental safeguards (de Sassi et al. 2015).<sup>136</sup> The REDD+ social and environmental standards are compared with other natural resource standards in table 9.6.

## Water

During the height of the Green Revolution in the 1960s-1980s, many Asian countries regarded national food security to be of high strategic importance and water management a responsibility of centralized public agencies investing in dams and canals to store water and move it to areas well suited for large-scale irrigated agriculture. Development agencies such as the World Bank invested in large water projects and agriculture became the primary user of water in many countries. Opposition to large dams mounted due to concerns over the environmental and human costs of dams and water diversion, leading to the formation of the World Commission on Dams and its report in November 2000 (World Commission on

Dams 2000). With a few notable exceptions, construction of large-scale dams slowed worldwide after the report's release – 46 of India's 50 largest dams were completed before 2000, for instance (Water Resources Information System of India 2015).

Times change: concerns about the impacts of carbon-based fuels on climate change are evoking new interest in dams for hydropower. Brazil, China, Ethiopia and Peru have constructed some of the world's largest new dams in recent years, including China's controversial Three Gorges Dam. They and others are planning to build more. There are new concerns about the impacts of reservoirs and loss of water for downstream communities.

Assessments undertaken at various scales, including globally, show the need to reallocate massive amounts of water from agriculture to industry, hydropower and urban consumers. The focus of water resource development has shifted from expanding large-scale infrastructure to water demand management, water use efficiency and improving water governance (Manghee and van den Berg 2012). IFAD's investment in agricultural water management focuses on smallholder irrigation, water for livestock, aquaculture and inland fisheries, soil and water conservation, wetland rehabilitation and watershed management (IFAD 2009).

Ecosystem management has been advocated as an important approach to more efficient and sustainable management of water resources. For instance, at broad scale, there is recognition that deforestation in the Amazon is reducing the "Amazon Sky Rivers" that cause the flow of moisture from the Amazon to southern Brazil.

Integrated water resource management (IWRM) has been promoted by many organizations, led by the Global Water Partnership. The key elements of IWRM are managing water at the basin or watershed level, optimizing supply from surface and groundwater supplies, managing demand through cost recovery and decentralized management, providing equitable access through user organizations and involvement of women and marginalized groups, establishing policies such as the 'polluter-pay' policy and water regulations, and intersectoral

approaches to decision-making that vest authority with those who have a stake in the process (GWP 2015).<sup>137</sup>

Governments around the world have enacted new water strategies and policies inspired by the IWRM paradigm (Giordano and Shah 2014). A United Nations survey of 134 countries in 2012 showed that 82 per cent of countries had begun IWRM reforms, 65 per cent had developed IWRM plans and 34 per cent were at an advanced stage of implementing IWRM reforms (Kadi 2014). At the international level, some of the principles of IWRM have been incorporated into the United Nations Watercourses Convention, which came into effect in 2014 (see table 9.6).

All resources have been the subject of multistakeholder dialogues to develop new standards, codes of conduct and guidelines for responsible governance. Some of those standards have been codified into international treaties and national legislation (see table 9.6 for major initiatives). It is encouraging to see the strong common themes that emerge. Perhaps the weakest is the lack of special consideration for gender equality and women's rights. The FAO Voluntary Guidelines are most comprehensive in the issues they address, but are also not yet widely adopted in policy at national or international levels. The mining guidelines are from the International Council on Mining and Metals, not national governments or industry associations.

## Impacts

The range and depth of responses to deeply rooted trends, patterns and challenges have yielded concomitantly wide and profound impacts, some anticipated, others not. Again, technical, organizational and political factors loom large.

## Land

Innovations in sustainable land management have helped to sustain agricultural production for millions of farmers across the developing world. Pretty et al. (2011) estimate that more than 10 million African farmers have benefited from the 40 examples of sustainable intensification that they reviewed.

Kassam et al. (2014) estimate that while adoption of conservation agriculture is still nascent in Asia and Africa, where it is used on less than 1 per cent of all cultivated land, the approach has been adopted on 125 million hectares of land across the world, including 57 per cent of all cultivated land in South America.

Land reforms can reduce conflict in cases where there is lingering animosity over extreme inequality in landholdings and increase economic output from the rural sector. Explanations for this productivity effect include the inverse relationship between farm size and productivity, higher local purchasing of labour and services by small farmers or extraction of short-term economic rents by large land owners (Henderson et al. 2014).

Holden et al. (2013) describe “land to the tiller” reforms adopted in India and Sri Lanka in the 1950 and 1960s and in the Philippines in the 1970s. Under these reforms, land was taken from large landlords and given to their tenants, and farmers were allowed to keep self-cultivated farms. Some large landowners simply evicted tenants and hired workers, but there was a reduction in land tenancy from about 20 per cent before the reform to about 12 per cent in the mid-1960s. One disadvantage of these reforms was that no land was distributed to landless people. Looking across Africa and Asia, Holden and Otsuka (2014) conclude that there is strong evidence that land tenure reforms increase land investments and land rental in the short term, and empowered rural residents and sustained rural development in the longer term. Similarly, market-based land reform in Malawi (2004–2009) has had significant positive effects on landholdings, agricultural output and income of beneficiary households that were stable over at least three years after the reform (Mendola and Simtowe 2015).

A study of pilot projects that preceded full rollout of land tenure regularization in Rwanda found that land access improved for legally married women, resulted in better recording of inheritance rights for both men and women, and increased investment in soil conservation, particularly for female-headed households. The authors highlight three potential problems

with scaling up nationally, however: continuing tenure insecurity for unmarried women, legal restrictions on subdivision will limit formal registration of new transactions and subdivisions, and high fees and travel costs have already limited full enrolment of land into the national registry (Ali et al. 2014).

Historical examples in many countries show that institutions that ease registration of land held under customary tenure in new statutory systems has often deprived indigenous groups of their land and relegated them to infertile areas. Several examples after the coffee boom in Central America in the late nineteenth century illustrate this.

Several studies have recently been conducted of the impacts of Ethiopia’s land registration and certification programme that began in 1998, with 20 million parcels registered across the country by 2011. Deininger et al. (2011) used a four-period panel and data and difference-in-differences approach and found that land registration increased tenure security, land-related investment and rental market participation. Holden et al. (2009) and Melesse and Bulte (2015) found that land registration and certification resulted in greater land productivity. De Brauw and Mueller (2012) found that households with secure rights to transfer land were somewhat less likely to be involved in migration.

### Forests

Countries and regions that experience declines in areas of natural forests often later register offsetting increases in planted forests, which may be owned by large firms or be an income source for smallholder farmers. Zomer et al. (2009) show that agroforestry is surprisingly common throughout the tropics: 7 per cent of the global agricultural land base has more than 50 per cent tree cover, while 46 per cent of the global agricultural land base has more than 10 per cent tree cover. Sandewall et al. (2015) examined the livelihood impacts of household plantations in Ethiopia, China and Viet Nam and found a variety of positive impacts. In their review of the literature on Africa, Kiptot and Franzel (2012) found that women’s participation

TABLE 9.6 Principles for inclusive governance of natural resources

Principle	Land, forestry, fisheries (FAO Voluntary Guidelines)	Land (ILC 10 commitments)	Forests (REDD+ social safeguards)
Recognition of resource rights as human rights	Article 4	Principle 1	Yes
Recognition of a diversity of rights (traditional, commons)	Article 8	Principle 3	Yes
Free, prior and informed consent for indigenous peoples	Article 9	Principle 5	Respect for knowledge and rights of indigenous peoples
Consultation and participation for affected communities	Article 7	Principles 6 and 7	Yes
Special focus on gender equality and women's rights	Article 5	Principle 4	No mention
Corporations to respect legitimate resource rights	Article 12	Principle 9	No mention
Consistent with national policy and intl. agreements	Articles 5 and 7		Yes
Consistent with ethical business practice	Article 12	Principle 9	No mention
Transparent resource governance	Articles 8 and 12	Principle 8	Yes
Fairness and equity in benefit sharing	Article 4		Yes
Comprehensive assessment of resource options	Article 20		No mention
Fairness and equity in resource allocation	Article 15	Principle 2	No mention
Transparent disclosure of taxes and payments	Article 19		No mention
Consistent with sustainable development	Article 11		Yes

Note: ILC = International Land Coalition.

Source: Voluntary guidelines – <http://www.fao.org/docrep/016/i2801e/i2801e.pdf>; Action Aid (2014; <http://www.actionaid.org>); REDD+ Cancun safeguards – REDD+ Social and Environmental Safeguards (2014; <http://www.redd-standards.org/key-issues/redd-safeguards>); ICMM Principles and Guidelines; International Decade for Action "Water for Life" 2005-2015 ([http://www.un.org/waterforlifedecade/human\\_right\\_to\\_water.shtml](http://www.un.org/waterforlifedecade/human_right_to_water.shtml)). Dublin Principles: <http://www.wmo.int/pages/prog/hwrrp/documents/english/icwedece.html#p1>; United Nations Watercourses: <http://www.unwatercoursesconvention.org/the-convention/part-ii-general-principles/article-5-equitable-and-reasonable-utilisation-and-participation/5-1-4-equitable-participation/>; <https://www.cbd.int/abs/text/default.shtml>; <http://www.landcoalition.org/>

Mining (International Council on Mining and Metals, principles and position statements)	Freshwater (United Nations Water for Life; Dublin Principles/ IWRM/ United Nations Watercourses Convention)	Genetic resources (Nagoya Protocol) (NP) of the Convention on Biological Diversity (CBD)
Yes	Dublin Principle 4 GA Resolution 64/292 in 2010	CBD does not address ownership of genetic resources
Yes	United Nations Watercourses – limited territorial sovereignty	CBD focuses on enhancing access to genetic resources
Respect for rights, interests and perspectives of indigenous peoples		NP Articles 6 and 7 require prior and informed consent or approval and involvement for use of genetic resources and traditional knowledge of indigenous and local communities
Consent, engagement and consultation	Dublin Principle 2 – United Nations Watercourses for states	
No mention	Dublin Principle 3	No mention
Yes	No mention	NP Article 20 on codes of conduct
Yes	No mention	NP Article 4 on international agreements
Yes	No mention	NP Article 20 on codes of conduct
No mention	Dublin Principle 2	NP Article 14 on benefit-sharing clearing house and information sharing
Yes	United Nations Watercourses – Principle 1	NP Article 5
No mention	Dublin Principle 1	No mention
No. But should contribute to national and local development	United Nations Watercourses – equitable and reasonable utilization	No mention
Yes	No mention	NP Article 14
Yes	Dublin Principle 4	No mention

is generally low in agroforestry enterprises that are considered men's domain, such as timber, but high in enterprises with less commercial value, such as soil fertility, fodder production and woodlots.

Many site-specific studies have been published on the impacts of devolution on forest transitions. A comparative analysis by Edmunds and Wollenberg (2013) concluded that forest cover increased in China, India and the Philippines after enactment of devolution policies, but that this occurred at the cost of decreased access to forest resources by local forest users. Afforestation involved exotic timber species that produce fewer products of value to local forest users and indigenous groups than indigenous species. Where forest devolution increased opportunities to market forest products, well-connected elites tended to dominate trade, excluding minority ethnic groups, women and other vulnerable groups. Forest devolution also led to greater state recognition of local users as legitimate land users, who deserve to be provided with state services.

A recent review of studies on the effects on equity of payments for environmental services suggests that no firm conclusion can be drawn. Many studies have reported positive effects, but these are mostly based on secondary and project management data, while several studies that have reported negative effects are mainly based on extensive fieldwork and primary data collection. The review suggests that programmes involving such payments are most likely to contribute to equitable effects when they fit with locally known management practices and local resource management institutions (Calvet-Mir et al. 2015).

### **Water**

For all the challenges and evidence of unsustainable use of water, the past 20 years have seen many successes. Most regions of the world experienced modest gains in access to improved fresh water sources by urban populations over recent decades. Least-developed countries as a whole experienced an increase in the share of urban dwellers with improved water supplies from 79 per cent in

1990 to 84 per cent in 2012 (WWAP 2015). Investments in irrigation and water supply have generated attractive rates of economic return. Foster and Briceño-Garmendia (2010) estimated that World Bank loans to African countries generated average rates of return of 22.2 per cent for irrigation projects, 18.9 per cent for power generation projects and 23.3 per cent for water supply projects. The World Health Organization (WHO 2012) estimated that investments in water and sanitation services in developing regions generated returns of US\$5-28 per US\$1 invested.

Application of the IWRM approach has produced successes and criticisms. Lenton and Muller (2012) describe several successful applications, including in managing wetlands in Bangladesh, managing irrigation in Mali, allocating water in Chile and South Africa, and countries cooperating in the Mekong River basin. The case of South Africa is particularly instructive: severe water scarcity has been addressed through infrastructure and institutions like rising block tariffs that guarantee water as a right and a "working for water programme" that provides incentives for removing fast-growing invasive tree species (Easter and Liu 2007).

Giordano and Shah (2014) synthesize criticisms along three lines: IWRM became an end in itself rather than a means to solve specific challenges; the IWRM "brand" is sometimes used to camouflage other agendas; and IWRM is shutting out thinking about pragmatic and politically acceptable solutions to given problems. As an example of the kind of pragmatic solution needed, the authors describe the Jyotigram Scheme that helped to resolve the problems of overexploitation of groundwater in the Indian state of Gujarat, associated with lack of property rights to groundwater and free electricity provided to farmers to pump it. Rather than enforcing water pricing or full cost recovery for electricity as ways to rationalize power use, the scheme involved targeted subsidies and quantitative rationing of electricity supplies to domestic users, schools, hospitals, village industries and irrigation farmers. Results included a reduction in overuse of groundwater,

reduction of subsidy costs and more reliable electricity supplies.

### Implications for investment and policy

Periods when land and other natural resources are degraded, stabilized or restored are frequent consequences of structural and rural transformations. Long-term degradation implies that institutional and technical changes are needed to encourage better conservation and investment, some cross-cutting and others specific to the three resources.

### Cross-cutting

Evidence from all three of the resource cases suggests that transformation often leads to a bifurcated distribution in the size of enterprises, most clearly with farmland ownership in Paraguay, but also for small woodlots versus corporate-owned forests – and similarly with treadle pumps versus large-scale irrigation in Africa. When should governments and development agencies embrace this bifurcation, and when resist it? When do small- and large-scale subsectors complement, or compete? Transformation processes tend to exaggerate initial differences in natural resource access and control between groups. Without attention, these differences can lead to new forms of impoverishment, food insecurity and social conflict. Reforms of land, water and forest tenure can help to mitigate those differences. Civil society can play key roles in fostering collective forms of resource governance as well as social movements among members of vulnerable groups.

Multilevel institutional solutions are required. Several of the cases show that scope for institutional solutions at one institutional level (the level at which regulations define marginal conditions) depends on the institutional framework at higher levels.

IFAD and other international agencies have important roles in building the capacity of national agencies to manage land and natural resources in ways that are inclusive and sustainable over the long term. Reforms that redistribute and secure property rights to land and natural resources can be very

good investments if they are completed and maintained, and not sidetracked by strong vested interests.

Greater levels of public investment in research, extension and institutional capacity may be necessary. Sustainable intensification is a long-term goal that may well require project timelines exceeding the norm for agencies such as IFAD. Impact assessment for such agencies may have to focus more on programme than project impact, with stronger emphasis on institutional and political factors that drive, or constrain, effectiveness.

Initiatives such as the FAO Voluntary Guidelines for Responsible Governance of Tenure for Land, Fisheries and Forests in the Context of National Food Security help to set new standards and expectations for national governments and private investors with a stake in natural resources in developing countries. Multistakeholder platforms that bring together varying perspectives from government, industry and civil society can play key roles. The 10 commitments for people-centred land governance of the International Land Coalition provide another framework for judging the effectiveness of land governance institutions and land reforms.

Nevertheless, countries should avoid a race to the bottom in seeking to attract international investment. There is a risk that initiatives such as FAO's Voluntary Guidelines on large-scale land acquisition are so demanding that investors shift their attention to other countries that are less aggressive in implementing the guidelines. Regional approaches to implementing guidelines generally could counter that tendency.

Inclusive management of some resources is limited by lack of accurate and credible data, particularly for groundwater.<sup>138</sup> This lack can also hold back management and promote illegal exploitation of forests and irrigation water. An important role for international and national organizations is to collect and disseminate these data.

## Land

Sustainable intensification requires governments and their donor partners to sustain higher levels of investment in research, extension and land tenure, support collective action and encourage private market development. Land-conserving practices, such as conservation agriculture and agroforestry, are still rare in most of Africa and Asia.

Reforms that strengthen security of property rights in an inclusive and equitable manner have strong potential. The dichotomy between insecure customary systems and secure statutory systems has been disproven and replaced with a more nuanced concept of a continuum of rights. Especially critical is attention to gender equality during enforcement of statutory laws. Depending on the context, there may be good opportunities to enhance security through recognition of customary authorities, recognition of group rights, rapid participatory registration of rights using geographic information systems, and gradations of more or less complete statutory rights.

Land tenure reforms that reduce inequalities of land rights can improve the performance and inclusiveness of transformation. There are many linkages between equality of land rights and transformation, some related to the production advantages of more equal distributions, and others related to the political economy impacts of more equal power relations. The latter tend to translate into more progressive social protection programmes, more equal investments in education, more mobile labour and less state protection for inefficient agricultural systems.

Land reforms that transfer responsibility for land management from customary to statutory institutions can improve efficiency and reduce conflict in some cases, but also have potential to increase elite capture, disempower indigenous groups and increase conflict. Governments should take care of the detail of tenure reforms, where possible prioritizing reforms that promote a greater a continuum of rights, sometimes recognizing group rights and customary authorities in more remote locations with flexible tenure arrangements and statutory registration of individual rights closer to cities.

In the short term, the greatest opportunity for efficient exchange of land rights may be through markets for fixed-term land rental rather than land sale. Smallholder farmers and indigenous groups should be protected from external pressures on land. It is important to distinguish changes in land use, scarcity and management driven from within the local agricultural sector from changes driven from outside it. Internal pressures will tend to be more gradual, and consistent with existing tenure systems. Recent increases in large-scale land acquisition in many regions, as well as the medium-scale farming sector in Africa, are driven by external pressures and thus more likely to be inconsistent with existing tenure systems.

Market-assisted or incomplete reforms have had mixed success on tenure insecurity or inequality. Experiences from Colombia, the Philippines and South Africa suggest that large farmers or customary authorities with entrenched interests in the status quo can hamper reforms with lingering negative effects on inequality and social cohesion. Market-assisted reforms have had more positive impacts where there has been adequate administrative capacity, political will and post-reform support services (Lahiff et al. 2013).

Land rental should be promoted, even if restrictions are put on sales, and can be important for optimizing use of land and labour in agriculture. It can also increase inclusiveness and welfare outcomes by providing land-rich but labour-poor households with a source of income and land-poor but labour-rich households with access to land.

Rural-urban trends may be as important as large foreign investments in increasing the scarcity of land (and water) resources in many countries. Urban residents may see investment in land as a way to maintain a secure source of livelihood, which may be particularly important in economies dependent on boom-bust commodity sectors. Depending on context, these investments may enhance rural market infrastructure, but possibly at the cost of inefficiency and inequity of land (and water) use.

## Forests

Private plantations and planting of trees on private farms should be encouraged as part of intensification. Smallholder farmers can diversify and augment their incomes through household plantations and agroforestry.

Governments should seek pragmatic solutions that are politically acceptable to strong vested interests. Devolution of forest governance to legitimate local user groups should remain a policy priority. Devolution can help to protect user communities and indigenous groups that are vulnerable to external influences, such as large-scale land acquisition and conversion to plantation agriculture or ranching. Recognizing vulnerable populations as legitimate forest custodians can also help to secure citizenship rights for them. Forest agencies should regard local user groups who rely on non-timber forest products as guardians of the forest, not illegal harvesters.

There are contrasting cases of high land inequality in El Salvador and Guatemala and lower land inequality in Colombia and Costa Rica, the cases of rights for forest dwellers in Thailand and India, and the case of artisanal and small-scale mining in Mongolia. These illustrate that public decisions on property rights to land and natural resources translate into human rights, citizenship rights, public investments and ultimately into government policies that affect transformation. An example from India illustrates the role of a forest rights act in protecting indigenous peoples is presented in box 9.4).

Women can benefit from policy reforms that strengthen their rights to resources, especially those reducing their dependence on other primary right holders, such as their husbands. Direct benefits may be limited in the short term by other regulations or customs. Over the long term, however, the explicit attention to women's rights may translate into more general gains for women. Devolution of forest governance should pay close attention to including women and vulnerable groups, and in some cases, much is to be gained from training local forest managers so that they can better benefit from new markets for forest products, including REDD+.

## Water

Markets can be very effective in allocating scarce resources, but often need to be augmented by public debates and decisions on priorities. This is most evident for water, where markets can lead to socially undesirable allocation between basic human needs, agriculture and industry. Good understanding of resource behaviour can feed into innovative solutions, such as graduated block pricing of water in South Africa.

Effective water resource management requires continual improvement and response to new circumstances. Post-apartheid South Africa is a case in which government has made continual change in water institutions as it has tried to improve efficiency and secure water as a right for all.

The IWRM principles have greatly benefited water management and the development of principles and standards for managing other natural resources. However, applying them can still be difficult and require periodic adjustment, especially as it is hard to develop the institutions needed. National governments need to make several decisions, quickly: how to ration water within agriculture and between agriculture and other sectors, how much to centralize or decentralize governance, how much latitude and oversight to provide to local authorities and how to regulate private water suppliers.

Water resource management needs to balance demand management and supply increase. Innovative pricing is one of several solutions for the former, but behavioural change of consumers – reducing waste, changing expectations and increasing efficiency – is often more effective.

Finally, improved information systems on groundwater water quantity and quality are needed. In many places, increased reliance on groundwater has delayed improvements to sound water management, which will be fettered for as long as so little is known about the status and trends of groundwater use, aquifer levels and water quality.

**BOX 9.4 India's Forest Rights Act and indigenous peoples' rights**

Many of India's minority ethnic groups (Scheduled Tribes) are heavily dependent on forests for livelihoods and income, particularly the women. Policy innovation to secure the rights of those 85 million people is important.

Governance of the country's forest resources has undergone fundamental changes over the last 35 years. In 1980, the country passed the Forest Conservation Act, which in effect abolished forest access rights of tribal people and criminalized their traditional subsistence activity. A Joint Forest Management programme began in 1990 with the objective of protecting and regenerating degraded forest with the participation of village communities, but it evicted hundreds of thousands of people from forest lands without compensation.

Led by a coalition of grass-roots organizations and forest dwellers from across the country, a major social movement formed to oppose these evictions – the Campaign for Survival and Dignity. It organized actions over four years, including nationwide protests of around 200,000 forest dwellers (Kumar and Kerr 2012). The Scheduled Tribes and Other Traditional Forest Dweller (Recognition of Rights) Act of 2006 (otherwise known as the Forest Rights Act 2006) recognizes historical injustices, and explicitly the rights of tribal communities “to hold and live in the forestland under the individual or common occupation for habitation or for self-cultivation for livelihood.” It takes an inclusive approach to individual forest rights, recognizing the claims of people who have no documentary proof of their landholding if they are cultivating it for their livelihood. The Act recognizes traditional forest rights for tribal groups for an array of uses, and committees that consider claims for individual rights have one third of their positions reserved for women. Implementation of the Act varies by region and by state.

A case study in the Banswara district of Rajasthan considered how the Forest Rights Act affected the position of women of the Bhil tribal group and concluded that women did not gain additional rights or representation, in part because they had strong traditional rights under Bhil traditions (Bose 2011). In other locations, forest dwellers have used the law to appeal against other laws and changes that threaten their rights, including a mine and a steel plant.

Source: Kumar and Kerr 2012.

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## Spotlight 8: Indigenous peoples

Indigenous peoples have played a crucial role as custodians of the natural world, and their territories are home to 80 per cent of the world's biodiversity. Their traditional knowledge, holistic practices and production systems both provide for sustainable management of resources and ensure that biodiversity is maintained for future generations. Recognizing how indigenous peoples have been able to make social capital, agriculture and the environment work together over centuries is crucial to an understanding of inclusive rural transformation, and offers an opportunity to learn from their sustainable livelihood practices.

### Impoverishment of indigenous peoples

The history of indigenous peoples has been marked by colonization, armed conflict and marginalization. From their first encounter with colonizers, they have faced discrimination, forced displacement and economic exploitation, resulting in decreasing populations, impoverishment and isolation. Occupation and land grabbing have continued for centuries and nation states have favoured private ownership and individual rights over collective ones. More recently, efforts by large corporations to extract natural resources has had negative and often devastating impacts on ecosystems, affecting indigenous peoples and making them even more vulnerable.<sup>139</sup> Development programmes, too, have impoverished them when they failed to build on their distinctiveness and culture (Ramos et al. 2009).

Yet indigenous peoples have shown strong resilience and demonstrated their determination to survive as peoples with their own identities. They have continued to adapt to changing circumstances while maintaining their unity and identity as peoples, and diversifying their livelihood systems, production practices and technologies to cope with new environments. Today, the indigenous population worldwide is more than 370 million, and recent census data have recorded a significant increase in their numbers.<sup>140</sup>

Marginalized and discriminated against, indigenous peoples account for 5 per cent of the world's population but 15 per cent of people living in poverty (IFAD 2009). Their socioeconomic and human development conditions are much worse than those of other population groups, and they fare worse on all human development indicators, despite many developing countries' impressive progress in education and health for both indigenous and non-indigenous groups. In most countries, their poverty rates are far higher than for non-indigenous populations<sup>141</sup> and, even in developed countries, they consistently lag behind the non-indigenous population on most indicators of well-being.<sup>142</sup> Indigenous women are further marginalized and experience multiple forms of discrimination, including within their own communities (UN 2010).

### Indigenous peoples and rural transformation

Overcoming these challenges in partnership with indigenous peoples and their communities is a prerequisite for inclusive and sustainable rural transformation. There is a need for actors at all levels to respect their holistic perspectives, and to acknowledge that their well-being is closely connected to their ancestral lands and territories, sustainable livelihood practices and cultural and spiritual values.

Indigenous peoples' traditions have great potential to contribute to rural transformation, benefitting not only themselves, but also others in the countries where they live. With their deep and varied knowledge of the natural world and traditional land-use practices, they have made invaluable contributions to the conservation and management of ecosystems. Their economies represent sustained interaction with and adaptation to particular locations and ecosystems, and their ability to use biological resources sustainably has historically protected them against crop failure, biodiversity loss, soil infertility and other threats (Kelles-Viitanen 2008). Indigenous food systems generate nutritious food and their

approach to sustainable food production can play an important role in addressing the global food need. Indigenous agricultural practices ensure that natural resources are protected and used in a sustainable way.<sup>143</sup>

Inclusive rural transformation can also bring about potential benefits for indigenous peoples. Improved infrastructure can ease access to services such as education and health care, especially for those who live in remote areas. Improved market access can be a benefit, particularly as their traditional foods are increasingly valued by urban consumers. Increased income-generating and employment opportunities may emerge from eco-tourism, forest management and conservation initiatives. Full and effective participation in decision-making can strengthen the traditional governance institutions of their communities and provide opportunities to affirm their priorities and views.

However, transformation processes also present challenges. The traditional livelihoods of indigenous peoples are potentially at risk as rural areas transform, marked by increased interaction and interdependencies between rural and urban areas, rising demand for and commercialization of food, changes in farm dynamics and practices, and still-rising pressure on natural resources. Unless investments and policies ensure that rural transformation is inclusive, indigenous peoples will be further marginalized and impoverished with less access to their ancestral lands, degradation of natural resources and limited livelihood options.

### Policies and actions for and by indigenous peoples

Indigenous peoples have been struggling to defend their rights throughout history. This struggle has led to a rights framework based on two main pillars: International Labour Organization (ILO) Convention No. 169 on Indigenous and Tribal Peoples (1989),<sup>144</sup> and the United Nations Declaration on the Rights of Indigenous Peoples (2007). The United Nations has consistently addressed the rights of indigenous peoples with the establishment of the Permanent Forum on Indigenous

Issues (2000), the appointment of the Special Rapporteur on the Situation of Human Rights and Fundamental Freedoms of Indigenous Peoples (2001), and the Expert Mechanism on the Rights of Indigenous Peoples (2007). Other international and regional agreements and conferences have also defended the rights of indigenous peoples, and several United Nations organizations have adopted similar policies, including IFAD, which has played a pioneering role in empowering their communities and institutions.<sup>145</sup>

Indigenous peoples' organizations themselves have reached global milestones in the form of the World Conference of Indigenous Women in 2013 and the World Conference on Indigenous Peoples the following year. Indigenous peoples have played an important role in negotiations on climate change, including COP21. The Paris Agreement acknowledges their rights and their traditional knowledge in adaptation action (UNFCCC, 2015). As their organizations' participation becomes more institutionalized, their influence on international organizations and regional bodies is strengthening. Indigenous peoples have also made significant progress in enacting laws and decrees in a number of areas.<sup>146</sup>

However, implementation is not always effective and specific investments and policies are required to ensure that indigenous peoples' needs and rights are recognized:

- *Supporting resilience.* Throughout their history, indigenous peoples have developed a great ability to adapt to natural changes. This resilience is a result of their sustainable use of biological resources and their transmission of knowledge down the generations. However, intensified pressure from resource-extractive industries has displaced people and expropriated lands, impoverishing and marginalizing indigenous peoples, who experience greater food insecurity than non-indigenous groups. Ensuring legal recognition of ancestral territories, protecting natural resources and acknowledging indigenous peoples' rights to their traditional food systems are key actions to support resilience.<sup>147</sup> Support is also needed for bottom-up community

adaptation strategies, rooted in indigenous peoples' knowledge.

- *Ensuring self-determination.* The right to self-determination was established in the United Nations Declaration on the Rights of Indigenous Peoples. It includes the right to freely determine their political system and pursue their economic, social and cultural development, and allows for making decisions related to indigenous land, natural resources, administration of justice, education, language, health and culture. At the same time, indigenous peoples retain the right to participate in the political, economic, social and cultural life of the state. In many regions, community-based structures, ancestral institutions and traditional systems are being revitalized and made part of self-government, and are important in administering sustainable local development. Recognition of indigenous institutions, adequate funding and engaging indigenous peoples, including women and youth, in all forms of public decision-making are important steps to ensure their right to participation at national and international levels.
- *Development strategies and partnerships.* Development strategies should be designed with the full and effective participation of indigenous peoples' communities and with their free, prior and informed consent.<sup>148</sup> Support to indigenous peoples must recognize that their aspirations for development, resources and services may be significantly different from other people. Indigenous peoples have continuously questioned the use and relevance of the mainstream development paradigm to frame the discussion of well-being and the realization of their rights.<sup>149</sup> For indigenous peoples the usual concept of development falls short in areas that they regard as essential. An alternative discourse is the concept of "good living," emerging from indigenous traditions as a way of life that is community-oriented, ecologically balanced and culturally sensitive. Good living is connected to respect for their territories, identity, language, food sovereignty and rights (Ramos et al. 2009). There is a need to build mutually respectful partnerships, recognizing that indigenous peoples must be leading actors in their own development, and ensure that their unique contributions and knowledge systems are not only recognized, but can contribute to all humanity.
- *Supporting and acknowledging the role of indigenous women.* Indigenous women play a fundamental role in food security for themselves and their families, and are important custodians of biodiversity and traditional knowledge, which they transfer from generation to generation. This role needs to be recognized and valued, particularly as the need for nutritious and sustainable food systems increases. However, the role of indigenous women is often ignored and they face discrimination in their access to numerous services, such as health care. Child and maternal mortality rates, unwanted pregnancy and prevalence of sexual abuse are higher among indigenous than non-indigenous groups. There is a need to promote a holistic and intercultural approach informed by indigenous perspectives on health, including traditional medicine and health practices, and to support the empowerment of indigenous women. Indigenous women themselves are a driving force in change processes involving the relationship between indigenous peoples and states. They have been promoting their rights and those of their peoples in international forums and have established national, regional and international alliances to promote and advocate for these rights.<sup>150</sup>
- *Supporting indigenous children and youth.* Indigenous children and youth are particularly vulnerable to structural discrimination and marginalization, resulting in alarmingly high levels of poverty and poor health. Despite significant progress in access to education, ethnic, generational and gender, inequalities also persist. Young indigenous women are especially disadvantaged, affecting their opportunities to enter the job market and their ability to make decisions about their

reproductive lives. In recent years, however, intercultural and bilingual education has been recognized and such programmes have had a positive impact on indigenous peoples' communities. Evaluations show that children who participate in intercultural and bilingual education classes perform better, both in their first and second language (IASG 2014). The use of indigenous languages and the inclusion of indigenous knowledge in the curriculum have increased the interest of families and students in their history, and in their present and future learning and development opportunities.<sup>151</sup> Young indigenous peoples are also increasingly engaged in indigenous youth organizations. The Outcome Document of World Conference on Indigenous Peoples in 2014 also emphasizes the status of indigenous youth.<sup>152</sup>

- **Strengthening data.** Data on indigenous peoples' socioeconomic status are lacking, and indigenous peoples remain invisible in most official statistics. Indicators that capture their perceptions of poverty and well-being, and collection of disaggregated data (including by gender and age) at the national level, are needed (UN 2015). More efforts are also required to ensure that indigenous peoples' rights and priorities are included in all processes of the 2030 Agenda for Sustainable Development. Disaggregation by indigeneity is not proposed under any of the targets, despite the close focus on inclusiveness in the Agenda.

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## CHAPTER 10

# Collective action and empowerment



## Summary

Even as structural and rural transformation opens up new opportunities, it also generates major risks for smallholders, rural small and medium-sized enterprises (SMEs), and other marginalized groups. This chapter considers if, why and how collective action and rural collective organizations can enhance the scope of inclusive rural transformation.

It considers three questions: how does collective action empower rural people and thereby encourage rural transformation? How do rural collective organizations contribute to making this transformation more inclusive? Which strategies, policies and investments can strengthen the inclusiveness of rural collective organizations?

The basic mechanism underpinning the promise of collective action is empowerment – supporting people to gain control over their lives. The conception of power is not as a zero-sum calculation in which there can be winners only if there are losers, but rather as a process that occurs in relationships involving collaboration, sharing and mutuality. Together these relational attributes generate social capital, which enables and encourages mutually advantageous social cooperation. Mutually reinforcing economic, social and political aspects of empowerment allow people to move out of poverty through participating in growth processes on terms that recognize the value of their contributions and enable them to limit discriminatory practices and to negotiate a fairer distribution of the benefits of growth.

These outcomes are not automatic. Coexisting with conflict and competition, collective action is neither costless nor inherently natural. It must be deliberately articulated and meticulously sustained. Both phases are challenging. The developing world is strewn with unsuccessful collective efforts that were overwhelmed by the failure to overcome collective action's innate challenges.

Collective organizations provide structure for collective action. Several categories of impacts can be generated by the activities of these organizations, thereby producing effects that

promote inclusive rural transformation. Some impacts relate to economic interests of these organizations' members and others to public goods, including positive policy environments. Five are considered here: expanded access to markets and finance, enhanced access to and management of natural resources, improved access to infrastructure, greater access to information and knowledge, and strengthened voice and power in policy processes.

There is no blueprint for solving all collective action problems. Rural collective organizations can deliver such benefits as the five just listed – if they are operating in conditions of democratic governance, homogeneous and optimal group size, accessible and transparent leadership, and forward-looking market-awareness. Yet some conditions and trends associated with structural and rural transformation weaken the legitimacy of local norms and institutions, and therefore lower the potential of collective action and collective organizations as forces for inclusion. Evidence of widely differing outcomes of collective action through rural collective organizations suggests not only that context matters, but also that groups and their individual members face unprecedented challenges in largely uncharted waters. Nevertheless, countless farmers' organizations and other rural collective bodies are already in place and are often entry points for myriad development initiatives.

Building robust rural collective organizations that can empower rural communities to participate in, and benefit from, changes from rural transformation can only be gradual – but is nonetheless essential, and support must be consistent and sustained. Policy and investment to enhance the delivery and inclusion-enhancing capacities of these organizations must focus on four areas: governance, operations, financing and strategy and policy engagement. Government and the private sector have important and complementary roles that must be identified, so they can provide enabling conditions for rural collectives to form, operate and contribute to shaping rural transformation pathways in the interests of marginalized groups and individuals.

### Risks of exclusion

Even as structural and rural transformation opens up new opportunities for rural communities, it also generates major risks that smallholders, rural SMEs and other marginalized groups in rural areas may be left behind, excluded from benefits or rendered worse off in absolute terms. Among global regions, in Asia and the Pacific – despite major land reforms in several countries – unequal distribution of land still prevents significant segments of rural populations from benefitting from the region's overall rapid rural transformation. In Latin America and the Caribbean, large numbers of asset-poor smallholder farmers in unfavourable areas face real challenges in accessing the region's fast-changing agrifood markets. In the Near East, North Africa and Eastern Europe, exclusion of rural populations from the benefits of economic growth is linked to widening urban-rural poverty gaps during transformation. In sub-Saharan Africa, major gaps in skills among burgeoning populations of young people render them increasingly at risk of exclusion from the most dynamic segments of rural economies.

Other chapters in this report document some of these risks and opportunities. The chapter on employment shows that the phenomenon of skill-based exclusion is global, posing major threats for such marginalized groups as rural women, indigenous peoples and the elderly. The chapter on land and natural resources illustrates how transformation exaggerates initial differences in endowments, access and control of natural resources, potentially leading to greater inequality, while the chapter on rural finance documents how limited financial intermediation to low-income rural households restricts their ability to respond to increasingly demanding markets. The chapter on technology innovation shows that, as the role of non-divisible technologies – such as farm machinery – grows, many smallholder farmers with little access to assets cannot capture full benefits. The chapter on markets and value chains illustrates how the majority of small farmers, processors, service providers and retailers experience important types and degrees of exclusion, with women and indigenous peoples often especially hard hit.

Given these findings, this chapter considers if, why and how collective action – defined as voluntary action by a group to pursue shared objectives – and rural collective organizations can enhance the scope for inclusive rural transformation. The key recognition is that rural transformation is a complex process with interacting economic, social and political dimensions. Collective action is the most common mechanism for generating and supporting sustained engagement for marginalized groups, aiming to promote their participation at different levels of society (Ostrom 1990; OECD 2012a).

Two related questions: How does collective action empower rural people and ease the process of rural transformation? How do rural collective organizations contribute to making rural transformation more inclusive? Another question springs from evidence that collective organizations are themselves riddled with profound difficulties, suggesting a chance to expand their inclusive capacities and impacts through strategies, policies and investments – but which ones?

The next section examines collective action as a process, so we can understand the factors that drive its substantial promise and challenges under rural transformation. The link from collective action to rural transformation is direct and powerful. Collective action can empower marginalized groups to make decisions and investments that let them adjust to, or keep pace with, changes in agroecosystems, agrifood markets and the wider rural economy. These outcomes are far from automatic. Many collective efforts have been overwhelmed by the failure to overcome inherent challenges. Rural areas present particular obstacles, such as wide spatial dispersion of populations, seasonality of production and marketing, and weather-related risks that lead to problems of asymmetric information and incompatible incentives.

The section after that considers how rural collective organizations can promote inclusive rural transformation. Innovative rural organizations can provide smallholders and other marginalized groups with better management of natural resources, access

to markets and information, and broader participation in policymaking. Their impact is strengthened when backed up by international bodies, including IFAD (box 10.1).

The final section looks at implications for policy and investment. While there is no single “right way” to empower marginalized groups through collective action, group characteristics that ease collective action are increasingly well understood. Critical challenges include weak governance, lack of financial and management capacity, underdeveloped human capital and unfavourable policy environments.

### Collective action and rural transformation

This report defines rural transformation as a process that entails long-lasting economic, social and institutional change. Rural societies diversify their economies to high-value agriculture and to the rural non-farm sector, interact with distant places to trade and to acquire goods and ideas, move from dispersed villages to towns and cities,

and become culturally more similar to urban agglomerations.

At the core of this complex process are individuals, households and firms venturing into new areas, making decisions and taking risks that they hope will make them better off. However, pervasive inequity and power imbalances, as well as unequal control over assets, create significant barriers. Further, core drivers and reflections of structural and rural transformation – especially commercialization and specialization – often affirm these inequities and imbalances in power and opportunity.

True rural transformation requires empowerment of economically, socially and politically marginalized groups. By expanding the range of available occupations, inclusive rural transformation provides opportunities for more rural people – especially the young – to lead rewarding lives in rural areas. Collective action can generate effects that further such outcomes, but not without difficulty (Ostrom 2004; Di Gregorio et al. 2012).

#### BOX 10.1 Investing in organizations for inclusive rural transformations in Guinea

IFAD’s support to smallholder organizations focuses on helping individuals work together as they link their groups, eventually forming larger, more powerful and more effective associations or federations.

In Guinea, IFAD works with farmers in grass-roots organizations that federated into unions, federations and a confederation known as the National Confederation of Farmers’ Organizations of Guinea (CNOP-G). It comprises 15 federations with 191 federal unions and six non-federal unions, bringing together over 500,000 individual farmers involved in commodities, including a subset of women farmers known as the “Collège des Femmes.”

CNOP-G is a key partner for the government and the donor community engaged in agriculture. It is also the entry point for the IFAD-funded National Programme to Support Agricultural Value Chain Actors to reach smallholder farmers in targeted value chains.

The programme is demand driven, providing farmers with the resources they need to increase productivity, improve competitiveness and enhance access to equipment and infrastructure at farm and post-harvest levels.

The programme has also introduced an innovative mechanism to strengthen the capacity and accountability of each organization based on its “maturity level,” defined according to objective criteria. CNOP-G has developed a participatory methodology to evaluate the maturity of its federations and unions and, based on this evaluation, draws up a support plan for each organization.

Source: IFAD 2013.

### The promise

Thousands of publications have established the core motivation for collective action, namely to achieve goals that individuals could not meet in isolation. Collective action thus is not an objective in itself to which individuals devote their time, labour and energy at the expense of their own individual projects. Rather, it is a means to support individual strategies. The basic mechanism is empowerment – helping people to gain control over their lives. The conception of power is not a zero-sum calculation in which there can be winners only if there are losers, but rather as a process that occurs in relationships involving collaboration, sharing and mutuality (Page and Czuba 1999). Together these relational attributes generate social capital – the network of social connections that exist between people, and their shared values and norms of behaviour – which enables and encourages mutually advantageous social cooperation (Thorp et al. 2005; Ostrom and Ahn 2010; IFAD 2015b).

Collective action generates three linked forms of empowerment: economic, social and political. The economic type relates to overcoming inequity and power imbalances that lead to market failures that prevent poor people from raising their productivity. Social empowerment is about taking steps to change society, so that one's own place is respected on one's own terms, not terms dictated by others. Political empowerment speaks to influencing policy, making demands and calling the state to account.

Mutually reinforcing, these three forms allow people to move out of poverty through participating in growth processes (some people contributing, some benefitting) that recognize the value of their contributions and enable them to limit discriminatory practices and negotiate a fairer distribution of benefits (Ostrom 1990; Ostrom and Ahn 2010; OECD 2012a).

Collective action can be self-reinforcing. By bonding in groups, individuals gain self-confidence and trust that enables them to act more effectively (sometimes resulting in major policy changes – box 10.2). Collective action thus opens the way for those without

much capital to influence economic, social and political outcomes. Collective action networks and associations can also help mitigate the effects of shocks that affect households, such as illness (Bernier and Meinzen-Dick 2014).<sup>153</sup>

For smallholders and other marginalized groups in rural areas, collective action can secure more equitable access to labour, land, commodity and financial markets, and stimulate the development of more responsive and accountable state institutions. This can lead to greater access to higher-quality services and changes in social and political status. Collective action at formative moments of policy reform appears to strongly help deliver change and subsequently hold policy actors accountable (Birner and Wittmer 2003; Joshi 2008; OECD 2012a).

In summary, benefits from collectives accrue from operating more efficiently than other market actors, helping members to avoid the effects of unequal power, increasing members' shares of benefits, helping them to meet standards and attenuate pervasive risk, and, in some cases, adding value to products by drawing services into underserved regions. By helping marginalized groups to achieve such outcomes, collective action can help these groups play in the rural transformation game and thereby contribute to rural transformation directly. By enhancing the voice and power of these groups, collective action can also help them to change the rules of the game itself.

### The challenges

Coexisting with conflict and competition, collective action is neither costless nor inherently natural, and it must be deliberately articulated and meticulously sustained.

Prospects for successful collective action are higher when certain preconditions are met. These preconditions can be that the resource or activity is important to local livelihoods, the boundaries for the collectively managed activity or resource are small and clearly defined, the costs of exclusion are high and benefits are tangible, there is wide overlap between location of the collective resource and residences of its users, high demand exists for the activity or

### BOX 10.2 The promise of collective action: people-centred land governance in Belize

The Toledo and Stann Creek districts in the south of Belize are home to more than 40 villages of indigenous Mopan and Q'eqchi' Maya people and one village of Garifuna people. Both groups depend on the land and natural resources for their physical survival and continuation of their unique cultures.

In the Toledo district, the Sarstoon Temash National Park was established in 1994. It covers 42,000 acres, including the ancestral territories of the above two communities. Recognized by the Ramsar Convention, the park is the second-largest in the country and houses its most pristine wetlands and tropical rainforest. The communities had not, however, been consulted on the park's creation, but an agreement was reached in 1997 when the government agreed to recognize the communities' customary practices. They established the Sarstoon Temash National Park Steering Committee – which became the Sarstoon Temash Institute for Indigenous Management (SATIIM) in 1999 – to co-manage the park. In 2004, the communities and the government signed a formal co-management agreement.

Three communities adjacent to the park – Conejo, Midway and Sunday Wood – use the northern portion of the park for farming, hunting, fishing and gathering. In 2004, even though they have little impact on the park's biodiversity, they agreed to scale down their activities inside the park to support the conservation effort.

In 2006, the government granted US Capital Energy a licence to conduct seismic testing in an area known as Block 19, which includes the national park. According to SATIIM, the government violated the right to free, prior and informed consent of the Maya and Garifuna communities, the customary owners of the land in question.

SATIIM started legal action and public awareness raising. In 2006, a judicial review found that the permit to start oil exploration in the park was illegal because an environmental impact assessment was lacking, and the licence was quashed. In two separate rulings in 2007 and 2010, the Supreme Court of Belize recognized the Maya communities' property rights to the land they had traditionally occupied and the resources they had traditionally used. SATIIM, working with other non-governmental organizations, collected 3,000 signatures asking the government and the company to stop oil exploration.

In April 2014, the Supreme Court ruled that the government's decision to allow oil drilling and road construction was unlawful, as the permissions were given without the free, prior and informed consent of the indigenous Maya communities. In June 2014, the court ordered the parties to enter into mediation.

Source: ILC 2014.

resource, the resource is vital for survival, users know what yields are sustainable, the action boundaries of the group are clearly defined, those who benefit from it are more powerful than those who benefit from private property and there are effective arrangements for dispute settlement (Ostrom 1990; Baland and Platteau 1996). This is a daunting set of preconditions, and how many of them can be met depends on circumstances. Not all have to be met simultaneously.

Property rights, for example, are decisive and cross-cutting in their influence on outcomes. The literature identifies three kinds of property rights-related problems that impede collective action:

*Free-riding* – external common-resource problems that arise when property rights are non-tradable, insecure or unassigned; and internal common-property problems that arise when new members obtain the same patronage and residual rights as existing members and are

entitled to the same payment per unit of patronage.

*Horizon problems* – disincentives to invest in long-term projects or contribute to growth opportunities because members expect net benefits generated by group assets to arrive sooner than the productive lives of those assets.

*Portfolio issues* – lack of transferability, liquidity and appreciation mechanisms for exchange of residual claims can prevent members from adjusting the group's asset portfolio to match their personal risk preferences (Meinzen-Dick and Di Gregorio 2004).

A lack of clarity on property rights may cause extensive conflict within groups, leading to breakdowns in trust and cooperation. However, formalizing property rights can lead to a concentration of rights and benefits among certain group members over others. So while collective action has the potential to reduce poverty, it is often biased against the poor (Thorp et al. 2005).

Although collective action offers advantages, the incremental benefits from collective (rather than individual) action may not be enough to offset the transaction costs of organizing. Free-rider problems are especially damaging. They may lead to underinvestment (or underuse) because individuals who bear the costs of collective action know that they share the benefits with non-payers. They may also cause overconsumption (or overuse) and consequent depletion (or deterioration) of the resource or asset because an individual receives all the benefit from consumption but bears only a portion of the cost of its overuse.

Identifying factors that can stop free-riding is more than an academic exercise. It is vital for all group-based efforts, ranging from management of natural resources to marketing of produce to microfinance. Indeed, a failure to minimize free-riding or overcome its effects through cohesion, solidarity and enforcement of rules explains many cases of failed collective action (Thorp et al. 2005; Doss and Meinzen-Dick 2015).

Some features of rural transformation such as roads and connectivity reduce the barriers to collective action. Conditions of democratic

governance, homogeneous group size and forward-looking market-awareness enable rural collective organizations to deliver benefits like increased investment in rural infrastructure, new skills, increased access to finance and enabling regulatory and legal frameworks. The trends associated with structural and rural transformation can also weaken the legitimacy of local norms and institutions and therefore lower the potential of collective action and collective organizations as forces for inclusion. Some of these conditions are population pressures, mounting competition for key resources and altered incentives created by expanding markets. National and regional policies and laws, on the one hand, and local rules and norms, on the other, may also diverge (Di Gregorio et al. 2012).

Despite their ubiquity, farmers' organizations and other rural collective organizations are often viewed negatively, especially in Africa (Ortmann and King 2007; box 10.3), partly due to the use of top-down agricultural cooperatives by some governments as tools to extract resources from rural areas. Rural collective organizations may also be maligned if they routinely pay too little regard to the probity of their leadership, to tradeoffs between equity and efficiency, to the raw mechanics of managing heterogeneous members with divergent interests and to the compromises and loss of vision that can result from reliance on outside support.

### **Rural collective organizations and inclusive rural transformation**

Collective organizations provide a structure for collective action,<sup>154</sup> and in their rural embodiment, have many forms and functions (operating at several levels and generating a range of significant outcomes – box 10.4).<sup>155</sup> Adopting terminology used by IFAD and other agencies, the focus here is on smallholder organizations defined as autonomous organizations of smallholders, family farmers and rural producers (including pastoralists, artisanal fishers, landless people and indigenous people), who are structured beyond the grass-roots or community level, either on a commodity or territorial basis.<sup>156</sup> They include all forms of producers' associations, cooperatives

**BOX 10.3 Failures (and success) of participative collective action in the Kafue Flats, Zambia**

Fisheries and wildlife are under tremendous pressure in the Kafue Flats, a wetland that is one of the largest floodplains in Southern and Central Africa. This ecosystem once harboured abundant common-pool resources and was managed by local common-property regimes, but is now threatened with overexploitation. The last 30 years have witnessed severe overuse of these commons.

Overuse of the fisheries and mismanagement of the wildlife goes back to the erosion of traditional institutions by state governance. Institutional weakness resulting from economic decline in the country is of major concern, as the institutions can no longer effectively enforce regulations in the area, leading to a de facto open-access constellation for the common-pool resources.

Two cases illustrate this point. The first is the Wetland Project of the World Wide Fund for Nature and the Administrative Management Design initiative designed to deal with management of Lochinvar and Blue Lagoon National Parks and the adjacent game management area through involving local chiefs and communities. The second is the Partners for Wetlands Project, which included local people via their chiefs as well as the public and private sectors from large agricultural enterprises to the eastern side of the Kafue Flats (Mwanachinwala Conservation Area project in Mazabuka). However, both cases yielded poor results owing to misconceptions of traditional representation of local communities and misinterpretation of local economic and political incentives. Although the Administrative Management Design initiative appears to be escalating, implementation receives staunch resistance from chiefs and other local leaders.

A third case, however, is more promising. The constitutional process for fisheries started in 2004 for creating by-laws based on initiatives of local staff of the Department of Fisheries, local interest groups and researchers. Broad local debate on how to manage the fisheries sustainably and develop local by-laws for their joint management appears promising for the future of fisheries in the Kafue Flats. Despite many difficulties, it is an example of local collective action for scaling up governance of common-pool resources.

Among the reasons past projects have had poor outcomes are misconceptions about local power processes and the inability of those involved to use traditionally developed institutional settings or to transform them in a participatory way to create local ownership of the process and its outcomes. Making traditional chiefs the main representatives of divergent local stakeholders has presented a real challenge to successful co-management, undermined by elite capture and the perception of local and immigrant people that they are only partly represented. Institutions were established during colonial times and after independence for managing natural resources in the Kafue Flats. However, while legal instruments and good policies are available, particularly for the management of wildlife resources, there are still no community-based natural resource management structures in the Kafue Flats, which is a serious deficiency for the better management of both common-pool resources and the communities.

Source: Chabwela and Haller 2010.

**BOX 10.4 Cooperatives and farmers' organizations globally**

Over the last 20 years, new and independent cooperatives and farmers' organizations have emerged in many developing countries with growing recognition as representatives of farming communities at national, regional and international levels.

National farmers' organizations of all continents have been structured into regional and global networks. In Africa, five regional networks (EAFF, PROPAC, ROPPA, SACAU and UMNAGRI) have emerged, shaping their respective regional contexts. In 2010, they created a continental platform, the Pan-African Farmers' Organization, to project farmers' interests in Africa's continental agriculture development initiatives – such as the Comprehensive African Agricultural Development Programme (CAADP). In South America, the Coordinadora de Organizaciones de Productores Familiares del Mercosur brings together 20 farmers' organizations from seven countries. In Asia, many regional groups are emerging, such as the Asian Farmers Association for Sustainable Rural Development and the Pacific Island Farmers Organization Network.

Many of these farmers' organizations (at all levels) are members of global movements, such as La Via Campesina (164 from 79 countries, with a membership of 200 million farmers), the World Farmers' Organization (57 from 57 countries) and the Intercontinental Network of Organic Farmers Organizations. The top 300 global cooperatives have a combined turnover of over US\$1.1 trillion. They employ more than 100 million people (more than multinational corporations) and contribute to increased agricultural productivity, expanded access to financial services and critical utilities such as electricity. In Europe, agricultural cooperatives have a market share of about 60 per cent of the processing and marketing of agricultural commodities and about 50 per cent of the supply of inputs.

In India, the Kaira District Co-operative Milk Producers' Union, popularly known as AMUL, is the country's largest food-product marketing organization. Managed by the Gujarat Cooperative Milk Marketing Federation, it has an annual turnover of US\$3.4 billion. Its daily milk procurement is almost 15 million litres from 18,500 village milk cooperative societies, 17 member unions covering 31 districts and 3.4 million milk-producer members.

Over 3 million people in Kenya – over 10 per cent of the country's population – derive a significant part of their income from the activities and services of cooperatives, and in Ethiopia about 900,000 people in agriculture are estimated to generate part of their income through them. In Morocco, the Coopérative Agricole et Agroalimentaire holds a 25 per cent market share in milk and derived products, generates a turnover of around US\$310 million (2011/12) and creates employment for 5,600.

In Brazil, 37 per cent of agricultural gross domestic product (GDP) is produced through cooperatives. In Uruguay, cooperatives are responsible for 3 per cent of GDP and produce 90 per cent of the milk, 34 per cent of honey and 30 per cent of wheat. Sixty per cent of cooperative production is exported to over 40 countries worldwide.

Sources: IFAD 2015b.

and their unions and federations (Anyonge and Messer 2014). The continuing importance of smallholder farms in rural transformation justifies this focus.

Discrimination based on economic class, gender, place of residence, sexual orientation, disability, age or ethnic identity often reduces opportunities and motivations for welfare-enhancing investment, contributing to rural poverty and impeding inclusive rural transformation. Some of these processes occur within the household, which is why IFAD has developed its “household methodologies” (box 10.5). Not only do marginalized groups enter markets and other rural forums with poorer human capital, they also receive lower returns for equal effort because of discrimination (OECD 2012a). Despite being equally productive and entrepreneurial, women farmers often receive lower prices for their crops than do men farmers. They also face systemic exclusion that can deny them access to productive assets such as land or to financial services (FAO 2011; Vargas-Hill and Vigneri 2011).

The literature and IFAD’s extensive portfolio of investments in rural collective organizations suggest five broad categories of impacts that can be generated by these organizations. Some relate to economic interests of members, others to public goods including expanded access to markets and finance, enhanced access to and management of natural resources, improved access to infrastructure, greater access to information and knowledge, and strengthened voice and power in policy processes. These five areas are now considered in turn.

### **Expanding access to markets and finance**

Smallholder farmers and other marginalized groups still face pervasive obstacles when seeking access to markets and finance. Such access becomes more important as rural transformation intensifies, with strong pressures towards concentration and thus growing imbalances in ownership, control and power in value chains.

Smallholder agriculture features large numbers of spatially dispersed producers facing high risks, lacking on-farm storage capacity and trading bulky and relatively low-value

products in small quantities. These hurdles lead to significant market coordination failures because potential service suppliers face uncertain demand for their services and thus refrain from the investments that would improve farmers’ ability to intensify production. If one element of the set is missing, investments in all the others may be lost (or heavily curtailed). In well-developed value chains, sophisticated market actors – including large agribusinesses – coordinate and integrate all these services; however, in poorly developed value chains that serve smallholders this is unlikely, as private investors stay away and markets become trapped in low-output equilibria (Hazell 2012).

Where costs of accessing markets are high – owing either to poor infrastructure, inadequate technology or information barriers – collective action can help to render smallholders more competitive, as their low costs in accessing family labour and intensive local knowledge confer important competitive advantages over larger producers. Yet their high unit transaction costs (in almost all non-labour transactions) are a disadvantage (Poulton et al. 2005). Collective organizations can reduce these barriers to market entry, boosting the inclusivity of rural transformation (Anyonge et al. 2013).

By acting collectively in organizations and their networks, smallholders can realize economies of scale and scope that reduce unit transaction costs of accessing certified seed, fertilizer and other inputs, and of disposing of outputs (box 10.6). They can better assemble and synthesize dispersed market information, secure access to new post-harvest technologies, certify their outputs, and thus tap into high-value markets, allowing them to better compete with larger farmers and agribusinesses (Markelova et al. 2009). These organizations also help smallholders by improving their bargaining power with buyers and intermediaries (Devaux et al. 2009). When linked to other private and public actors, successful arrangements vary from contract farming and fair trade schemes to multistakeholder coordination along the value chain through interprofessional associations and multistakeholder platforms. However, not all commodities and markets lend themselves to

**BOX 10.5 Household methodologies increase gender equality and social inclusion**

In recent years, IFAD has embraced new and innovative approaches to engage all family and household members in gender equality. To this end, IFAD has found household methodologies useful when working with families to understand intra-household dynamics. Developed and then adapted by IFAD and partners, they shift the focus from assets, resources and infrastructure to people, their relationships and visions for the future. Being participatory, they enable family members to work together to improve relations and decision-making, and to achieve more equitable workloads. Their purpose is to strengthen the overall well-being of the household and empower all its members to realize their development potential and create stronger, more resilient, productive and sustainable smallholder farming and rural livelihood systems.

IFAD has piloted integration of these methodologies in Malawi, Nigeria, Rwanda, Sierra Leone and Uganda with about 50,000 participants. Encouraging results include greater resilience, increased happiness, more girls and boys in school, and increased productivity, incomes and food security – leading IFAD to consider ways of replicating and scaling them up in countries across sub-Saharan Africa and in Asia.

The methodologies may be pursued through groups (such as the Gender Action Learning System) or individually with the support of a household mentor. When linked to other project activities, such as developing financial services, value chains and infrastructure, the methodologies help improve economic productivity.

Source: IFAD 2014.

collective organization, and only about 10 per cent of farmers in developing countries are likely to get involved.

Nevertheless, through these arrangements, farmers are better able to pool financial and labour resources, acquire key commercial assets (e.g. storage and handling capacity, transportation equipment and related facilities, and processing machinery), reach quality standards and operate on a larger scale. This enables them to sell to domestic or international markets that would otherwise be out of reach (Poulton et al. 2005; Narrod et al. 2009; WFP 2015).

Finance and financial services are fundamental to rural transformation, but their provision to poor rural households involves many challenges, many stemming from low population density and weak infrastructure. Limited reach and capacity of financial service providers in these areas, along with low levels of education and financial literacy among potential clients, distort rural financial markets. The demand side is further constrained by the seasonality and risk inherent in smallholder

farming, and by a preponderance of potential clients – particularly women – who lack property rights or secure land tenure, and therefore cannot offer typical loan collateral (Miller and Jones 2010; Kumar et al. 2013; Miller 2015). Unsurprisingly, use of collateral is very rare in rural finance, and repayment incentives are mainly ensured by joint liability or the threat of barring future loans (Huppi and Feder 1990). Short-term credit to cover farm-operating expenses and medium-term credit to acquire farm machinery are especially important in achieving the agricultural productivity growth that underpins rural transformation, but smallholders face immense challenges in accessing such credit (see box 10.6). Group-based microfinance and microcredit schemes, solidarity lending by banks, inventory-credit schemes and warehouse-receipt systems are possible ways to overcome these constraints.<sup>157</sup>

Collective action encourages rather than replaces competitive behaviour. In theory, negotiation power translates into more favourable transaction conditions and greater influence over other actors. In practice, however,

**BOX 10.6 Faso Jigi, Mali: increasing smallholder access to markets and finance**

In the early 1990s, the Government of Mali began deregulating the cereal market, moving away from a state monopoly and allowing the private sector and farmers' organizations to become more involved. It was a positive turning point for many producers, but not everyone could benefit, as many farmers lacked the power to capture the new market opportunities. For example, their produce was not of high enough quality, they lacked information on market demand and they had problems securing pre-harvest financing on good terms. Moreover, they were weakly organized (if at all) and therefore had little bargaining power.

Faso Jigi, a farmers' collective, was formed in 1996 to redress the inability of poor cereal farmers to obtain credit without falling into debt and to negotiate fair prices for their produce.

Unlike their peers elsewhere in the country, Faso Jigi members had to make a commitment to marketing their cereals through the group. In return, they received access to credit through guarantees provided by it. They were also guaranteed a negotiated transfer price for their produce, which was typically higher than the price that individual farmers could fetch on the market. Membership grew steadily.

Faso Jigi encountered difficulties, however: an assessment in 2001 revealed that it had weak accountability and poor management, the transfer price had been increased even while producers' arrears were rising and the marketing fund was shrinking, forcing the collective to place a moratorium on financial agencies providing credit to its members.

In 2002, its board proposed measures to modify the rules governing its collective marketing system, including a price ceiling policy, tighter quality standards and new mechanisms to strengthen the collective accountability of local groups for individual farmers' performance, including delivery commitments. The new measures bore fruit in the 2002/03 season, allowing Faso Jigi to pay its members a net CFAF 200 per kg, compared with a gross price of CFAF 195 fetched by individual producers on the market.

However, in 2006 not all producers fulfilled their delivery commitments when the cereals were harvested. All member rebates were cancelled, penalizing producers who had met their commitments. Even so, the board set a high transfer price for the next season, but again several producers delivered low-quality cereal, just as market prices were falling owing to a surge in rice imports. All these factors pushed Faso Jigi into a large loss in 2007.

This time it responded by giving members more responsibility for its smooth functioning. As an entity, Faso Jigi also had to pay for its members' failures to live up to their cereal commitments, depleting its security reserve to honour its financial commitments. Its ability to display a sense of discipline, as well as to respond to the crisis through a democratic, transparent process, helped the collective maintain its credibility and the trust of its counterparts and partners.

In 2008, armed with a sound credit history, institutional credibility and self-assurance, Faso Jigi negotiated very favourable credit terms for its members, arranging a line of credit through Niesiguiso and the National Bank for Agricultural Development. The group became one of the National Bank's biggest customers. This breakthrough was part not only of economic empowerment, but also of growing recognition of its standing as a major actor in Mali's socioeconomic circles.

Source: OECD 2012b.

the record is mixed. Many farmers' organizations fail to help their members participate in new markets or access new sources of finance. These failures are due to low capacities to enforce adequate systems of rules to direct relations among the members, to establish effective networks with public and market agents, and to become competitive in the market in which they operate (Johnson and Berdegue 2004).

### **Enhancing natural resource access and management**

Structural and rural transformation puts many common properties under new pressure, whether stemming from population expansion, increased competition for resources or breakdowns in management institutions arising from market forces, policy interventions or outsiders' challenges to local rights. A large body of research in natural resource management conducted over several decades has demonstrated how collective action helps rural communities address these forces (Meinzen-Dick et al. 2002; Mwangi et al. 2012).

Individual farmers can adopt most agricultural technologies on their own farms in a given season. To generate the full benefits, farmers working together over wide areas and over prolonged periods must take up typical natural resource management technologies and practices. Yet without secure rights to the underlying natural resources, individual farmers have few incentives to adopt them because they are not assured of the benefits. Collective action normally has to put boundaries on eligibility to benefit from the resource, so that it is not overexploited.

Most natural resources are complex, interdependent ecological and social systems that require integrated management approaches. Private ownership is costly and inequitable. Direct state control has high information, technical, coordination and monitoring requirements. Local community control may be skewed towards influential members. Devolved management arrangements that combine state, private and community control over natural resources can offer more efficient, equitable and sustainable management (Ahmed et al.

2004). However, such devolution is generally unsuccessful without collective action. Most cases of successful natural resource management thus feature some form of co-management between the state and communities as represented by collective organizations (Mwangi et al. 2012).

By promoting longer-term decision-making, collective organizations can encourage environmentally sustainable management practices, which in turn boost inclusive rural transformation. Because agriculture, the non-farm rural economy, and agro-industry are all dependent on the natural resource base, collective organizations have direct and indirect impacts on the inclusiveness of rural transformation.

These collective organizations vary by type of resource system. How much the outputs can be forecast, moved and stored matters, as do the technologies and practices available. Examples include local user associations for surface and groundwater, fishing cooperatives, local wood harvesting groups, wildlife hunting groups, pastoral cooperatives and communities (including those supported by IFAD among others – box 10.7), local seed exchange networks and local groups for coordinated pest management. Federations of user groups may be created to manage larger resources (Meinzen-Dick and Di Gregorio 2004).

These organizations are particularly important where vertical coordination and cooperation among communities, government and the private sector are required for equitable access and use of natural resources (Prato and Longo 2012). They also need to be able to exclude non-members from the resource. Their wide-ranging activities can include setting and implementing and enforcing rules to exploit a resource, representing local communities to outsiders, sharing information and jointly building or maintaining local infrastructure and technologies.

Rural collective organizations can ensure access to the natural assets that are essential to these groups' beneficial participation in rural transformation. Where management of natural resources, such as forests, fisheries, surface water,

**BOX 10.7 Empowering pastoral communities in Ethiopia**

The Pastoral Community Development Project supported by IFAD, the government of Ethiopia, the World Bank and the International Development Association was conceived as a long-term intervention over 15 years, to reach 4.7 million people. A key aspect was to decentralize *woreda* (district) processes and empower pastoral communities, local administrations and regional governments to better manage local development in their pastoral areas.

In Ethiopia, the pastoral population of 12-15 million live in pastoral and agropastoral *woredas* in remote arid and semi-arid areas. Key development challenges include limited access to public and social services, little participation in local decision-making, poor infrastructure, vulnerability to drought, environmental degradation, restrictions on movements and conflicts related to natural resource management.

The project adopted a bottom-up community-driven development (CDD) approach to promote community participation and demand-driven development processes. Through this approach, the project created genuine participation of pastoral communities, grass-roots institutions and local governments. Communities engaged in a dialogue to ensure that the available resources were applied to their development priorities. They identified education, health, water supply and animal health care services as investment priorities.

The multi-phase project design allowed lessons to be applied in preparing the subsequent phases, particularly in institutionalizing the CDD approach through capacity-building of communities and local implementing bodies, and in enhancing inclusiveness and accountability of planning processes. This long-term approach provided for geographical expansion, greater outreach and consolidated reform processes and institutional measures, enabling tighter integration of pastoral communities into the national policy agenda.

CDD fostered local partnerships among the public sector, private enterprise and civil society, and emphasized the importance of decentralization and community empowerment. Policy dialogue in developing pastoral areas is now established practice in Ethiopia, and the Pastoral Standing Committee in Parliament has become a strong proponent of pastoral institutions.

Source: IFAD 2012.

groundwater and rangelands is devolved, these groups permit community-driven institutional arrangements to emerge by providing platforms for transferring devolved authority to communities.

**Improving access to infrastructure**

Infrastructure – roads and footpaths, bridges, schools and other buildings, irrigation and drainage, water supply and sanitation, energy and telecommunications – catalyses the impacts of other assets and services such as land and finance (Foster and Briceño-Garmendia 2010; Dorosh et al. 2012). The implications for rural transformation are clear. For instance, smallholder farmers often lack roads that link them to markets where they can buy agricultural

inputs and sell their agricultural products. Seemingly inefficient overproduction of low-value crops by smallholders can be explained as rational food import substitution by households facing high farm-to-market transport costs (Omamo 1998). Such costly outcomes are inimical to inclusive rural transformation.

Rural communities have become involved in provision of long-term infrastructure largely because of failures by national and regional governments. They thus choose self-provision through collective organizations, sometimes accounting for more investment than the government (Akinola 2007).<sup>158</sup>

Community-driven approaches are widely used – not only in least-developed countries and fragile and post-conflict contexts, but also in

middle-income countries – to reach the poorest or most marginalized populations (Binswanger-Mkhize et al. 2010). Most development agencies encourage these approaches to build rural infrastructure. For instance, over the previous 10-15 years, such projects and components had constituted 5-10 per cent of World Bank lending, with approximately 400 projects in 94 countries valued at almost US\$30 billion (Wong 2012). Unlike many other community-based approaches that focus on consultation and co-finance, these projects emphasized community control of decision-making and investment resources. These approaches have significantly increased access to community infrastructure and services such as roads, irrigation, water and sanitation, electricity, basic education and health.<sup>159</sup>

Collective action for small-scale water harvesting irrigation is especially important to marginalized groups, often generating major benefits (Scott and Silva-Ochoa 2001; Chun 2014; box 10.8). Irrigation to supplement rainfall for crop production requires considerable collective action at watershed level to make decisions, mobilize labour and other resources, and distribute benefits. It also has to overcome changing property rights over land and water, the growing importance of alternative sources of livelihoods and increasing scarcity and competition for water within river basins.

Collective organizations also help expand commercial infrastructure in rural areas. Efficient marketing infrastructure helps to minimize post-harvest losses and to reduce health risks. Farmers' organizations routinely invest in such infrastructure, often with governments, development partners and philanthropic bodies, including matching grants, operation and maintenance support, and user fees (WFP 2015).

### **Widening access to information and knowledge**

Rural transformation leads to higher demand for information, which requires providers to offer advice and promote technology innovations. The need for such pluralistic systems has been

recognized for some time, but progress has been patchy, in part owing to the need for changes in roles and responsibilities of actors (Alex et al. 2004; Feder and Anderson 2004). Collective organizations must be able to express and respond to a raft of demand-side needs, with those of underserved smallholder farmers paramount.

Participation of farmers and other local stakeholders in agricultural research and development has been shown to spur local innovation by speeding up the rate of technology adoption. Farmer-led approaches that combine technical innovation with collective action are especially effective for landscape-level resources and technologies. (Examples include farmer field schools, local agriculture research committees, farmer research groups and farmer innovation methods promoting indigenous knowledge.) Common to these approaches is mutual reinforcement of participatory research and collective action, where the aim is to motivate participation, coordinate actions of multiple resource users, spread risk, manage environmental spillovers and scale up benefits (Knox and Lilja 2004).

Partnerships are critical. IFAD's experience indicates that when linked to NGOs and public and private actors, producer organizations help small operators build their skills to access and use appropriate information and knowledge to innovate and adapt to changing markets (often employing cutting-edge technology – box 10.9). Some of these bodies enable farmers to build capacity to analyse their production systems, test solutions to problems and adopt the practices and technologies best suited (Anyonge et al. 2013).

The distribution of technologies and information is often tied to property rights. At community level, extension services frequently favour landowners, imparting greater access to men and the wealthy. Collective organizations can strengthen the bargaining power of disadvantaged groups and improve technology-adoption efforts (Meinzen-Dick and Di Gregorio 2004).

### BOX 10.8 Building resilience through community-driven public works: the MERET initiative in Ethiopia

The long-standing Managing Environmental Resources to Enable Transition to More Sustainable Livelihoods programme (MERET) is supported by the UN World Food Programme (WFP) in partnership with the Ministry of Agriculture and Rural Development.

MERET aims to address root causes of vulnerability and chronic food insecurity by rehabilitating natural resources and enhancing land productivity. It is implemented in over 450 watersheds in 72 *woredas* of five regions and one of the country's two chartered cities (Dire Dawa), with the Ministry and the Bureau of Agriculture and Rural Development. The programme provides food assistance through food-for-work as a short-term means of enabling longer-term progress in agriculture. The main activities are physical and biological conservation, reforestation, small-scale irrigation, road construction and maintenance, income generation, livelihood diversification and soil fertility improvements.

MERET applies a community-based participatory watershed development approach to sustainable land management, community-based participatory planning and a commitment to community capacity-building. A core element is that the community defines and prioritizes problems and identifies best solutions for the area. The community implements watershed activities through its own labour and management, with external support as needed or available. This promotes a high level of community awareness and ownership of environmental rehabilitation within the watershed, which is good for maintenance and sustainability.

MERET prioritizes and implements a range of physical soil and water conservation measures, including soil and stone bunds, terraces, gully rehabilitation, check dams and area closures. An impact evaluation completed in 2012 – covering 1,800 households in communities served by MERET and 1,800 households in “control” communities – found that MERET-served communities erected soil bunds, cutoff drains and check dams far more than control communities. MERET farmers also adopted significantly more biological soil and water conservation practices than control-site farmers.

These investments improved livelihoods and incomes. Although both control-site and MERET households increased their incomes and productive assets, MERET households saw the greater (statistically significant) gains on most of the livelihood and income indicators across regions. In all regions, MERET participants were diversifying and undertaking income-generating activities, such as livestock fattening, plant nurseries, bee keeping and fish production. Farmers were using small-scale irrigation and shallow wells in increasing numbers, although land shortages and lack of water limited production and reduced the positive effects in relatively lowland areas.

The qualitative findings generally supported the quantitative results that MERET households had more diverse and successful livelihood opportunities. Although a majority of households did not save or take a loan, savings rates for MERET households exceeded those of control-site households by statistically significant margins (29 versus 19 per cent). MERET households that saved money were also more likely to have made formal arrangements with a financial institution than control-site households.

Source: Tango/IDS/EEA 2012.

### BOX 10.9 Community organizations at the cutting edge of rural information systems in Uganda

In 2010, the Grameen Foundation, a global nonprofit organization, initiated an innovative project to deliver extension and marketing information to smallholder farmers in rural villages in Uganda. In carefully organized meetings, villagers were asked to choose someone living in the community for many years that they felt suitable to take up the role of community knowledge worker (CKW). This person was then screened by Grameen, provided with an Android smartphone preloaded with an in-house mobile application called CKW Search and trained in using it. CKWs can use this application to search for up-to-date and location-specific information on farming and commodity marketing. In this way, the Grameen Foundation aimed to build a scalable network of resident rural information providers who use smartphones to help close critical information gaps faced by smallholder farmers in extension and marketing information.

Having extension available within remote areas is one advantage over a system in which an externally based extension worker is allocated to serve a village. That the information is delivered through a CKW is important. Not only might this result in lower costs and better access to agricultural information and extension services, but a resident CKW knows the local context and is better able to contextualize the information obtained through the phone. CKWs are assumed to employ a more holistic approach to agricultural extension, factoring in things such as the farmer's ability to deal with risk. Again, the idea is to increase the chances that farmers will act upon the information obtained.

That was the theory. How did it work in practice?

To find out, Van Campenhout (2013), using a difference-in-differences approach, examined the causal impact of the CKW intervention on the crop mix grown by farmers, on maize productivity, on the share of maize marketed and on the price received for maize. He found that the CKW initiative led to a change in the crops that farmers reported growing. In particular, the intervention induced farmers to cultivate fewer food-security crops, such as cassava and sweet potatoes. (These crops are associated with lower risks of adverse impact of drought or disease, but also have less nutritional content and lower value as a source of income.) It motivated farmers to replace these crops by more commercially oriented commodities. For maize specifically, it induced farmers to sell less of their output as a share of the total quantity produced. Most strikingly, his estimates suggest that the presence of a CKW is associated with an average increase in the price at which farmers sell maize of about 12 per cent.

Source: Van Campenhout 2013.

### Strengthening voice and power in policy processes

There is growing recognition among development analysts and practitioners of the benefits that can be derived from transferring control over design and implementation of rural development initiatives to local bodies. With increasing appreciation that local citizens have the greatest stake in local development outcomes, principles of decentralization, subsidiarity and local participation are endorsed and written into policies for water resources

management – for instance, in Haiti, Rwanda and the United States (Stoa 2014).

As national governments respond to growing pressures to devolve decision-making, rural power dynamics become increasingly decisive, increasing commensurately the potential impact of rural collective organizations.

Almost by definition, inclusive rural transformation occurs across wide geographical areas, contrasting socioeconomic and cultural contexts, and distinct institutional and political regimes. It requires participation from a broad

spectrum of stakeholders, all of whom must devote resources to ensure that their interests are represented. Despite social and economic marginalization, smallholder farmers and other neglected groups physically dominate rural landscapes. Thus, whether by design or by default, these groups are often strongly affected by public policies and investments that deliberately or inadvertently affect conditions in rural areas. However, these groups typically lack direct channels to express their interests to policymakers, which is where collective organizations come into play (Prato and Longo 2012).

The logic underlying these efforts is that social capital built up in collective organizations is translated into political capital, which is then used to further the interests of members by influencing political regimes (Birner and Wittmer 2003).

While consensus has yet to emerge on the precise mechanisms through which such translation occurs in different contexts, numerous examples of successful policy engagement by farmers' organizations and other rural collectives appear in the literature. One common factor is transparent dialogue among stakeholders from public, private and civil society, based on trust and shared values.

Collective organizations representing smallholders and other marginal groups add to these consultation forums by voicing practical concerns (including at regional level – box 10.10). They also often seek to alter power relationships in the governance processes through which decisions are made on allocation of public assets and finances. Organizations representing marginalized groups can ensure that underlying inequalities and imbalances in assets, incomes, and capabilities are not deliberately or inadvertently reproduced (Birner and Wittmer 2003; Court et al. 2006; Prato and Longo 2012).

### **Implications for policy and investment – be formal, but flexible and adaptive**

No blueprint or "one-size-fits-all" solution can be used to seize all collective opportunities and solve all collective action problems (Ostrom 2004). In many ways, collective action goes

against the grain of many powerful institutional, cultural and economic norms: moving from competing for resources to sharing them, shifting from outputs to outcomes with heightened accountability, going from technical approaches to adaptive and evolving ones, and funding processes with several interacting thrusts rather than individual programmes (FRB-SFO 2014). Evidence of widely differing outcomes suggests not only that context matters, but also that groups and their individual members face unprecedented challenges in largely uncharted waters. There is likely to be underinvestment in collective action, which implies the necessity for support by NGOs, the private sector and governments.

Despite these difficulties, countless farmers' organizations and other rural collective bodies are already in place and tend to be entry points for multiple development initiatives. Effective approaches cater to diverse contexts, taking into account the different stages of development of organizations (IFAD 2015a). However, effective policies must generally focus on governance, operations, financing, strategy and policy engagement.

*Governance requirements* include transparency and legitimacy, aiming to strengthen bonds of solidarity and foster democratic principles that will expand membership over the long term. Support for rural collective organizations must build on existing social capital. Local social capital is often not enough to overcome local barriers built on norms and customs. For collective action to endure and spread, it needs to connect with external agents who channel new ideas, innovation and material incentives that support and promote initiatives. Sustainable access to finance is crucial.

*Operational imperatives* relate to how collective action can provide services to members. They include the structures and processes for assigning decision-making authority, for evaluating performance, for rewarding performance and thus organizational efficiency and effectiveness (Brickley et al. 1996). The establishment of property rights over collective goods and services is a very important issue. Leaders of rural collective organizations require strong

#### BOX 10.10 Supporting hearings on the Cooperative Societies Bill of the East African Community

The East African Community (EAC) is the regional intergovernmental organization of Burundi, Kenya, Rwanda, Tanzania and Uganda. The East African Legislative Assembly (EALA) is its legislative sub-entity, with nine elected members from each country and seven ex-officio members elected by the legislature of each country. The core functions of the EALA are legislation, oversight and representation.

Cooperatives play a significant role in the economies of the five countries of EAC. There are more than 30,000 registered cooperatives in the region and they employ, directly and indirectly, more than 15 million people. About half of these cooperatives are related to agriculture. Savings and credit cooperatives are also becoming increasingly common. There are considerable differences in the legal frameworks for cooperatives in the different countries, and some national frameworks constrain development of the cooperative movement. A regionally based legal framework would incorporate good practices from the different laws across the region to create a common enabling environment for cooperative development. It would also enable the formation of regional cooperative societies and unions, and expand business opportunities.

The East African Farmers' Federation (EAFF) is an apex organization whose role is to voice the concerns and interests of farmers in the region. Its membership comprises 20 farmer and pastoralist organizations from nine countries: Burundi, Djibouti, the Democratic Republic of the Congo, Eritrea, Ethiopia, Kenya, Rwanda, Tanzania and Uganda.

Since 2009, in response to concern from its member organizations on the challenges facing the cooperative movement in the region, EAFF has been lobbying for EAC-wide legislation for cooperatives. In 2009, EAFF commissioned a comparative study of the cooperative laws in the region to generate findings to inform its advocacy for a regional law. Between 2010 and 2013, it convened meetings with experts in cooperatives and stakeholders to discuss the contents of the proposed legislation. In April 2013, an EAFF team met the Speaker of the EALA and the EALA Committee on Agriculture, Tourism and Natural Resources (the Committee), one of whose members agreed to move the bill as a private member's bill in the assembly.

In January 2014, the EAC Cooperative Societies Bill 2014 was read for the first time in the EALA. The Speaker then forwarded the bill to the Committee for further consultations. In January 2015, the EALA passed the East African Community Cooperative Societies Act 2014. As an act of the EALA, it now awaits assent by the Heads of State of the five EAC countries. Once ratified, it will become law and take precedence over existing national laws. This means that national laws will have to be amended wherever necessary to conform to the EALA act. Following national ratification, EAFF intends to collaborate with its member organizations on awareness-raising efforts in all EAC partner countries. The act establishes the East African Cooperative Agency, which will develop the rules and regulations of the act as one of its first tasks.

Source: IFAD 2015c.

support to develop and implement contractual arrangements that maintain the economies of scale that these organizations can generate.

*Financial needs* centre on selecting appropriate equity and fee structures, along with suitable patronage rights, for there is no empowerment without financial autonomy. Such autonomy stems from raising adequate funds from members and external sources and from managing those resources. Priorities are building functional literacy and numeracy, boosting financial literacy, choosing relevant business models, designing profitable business lines, and strengthening financial management. Participatory planning of activities and transparency in activities at all levels should be supported.

*Strategy and policy engagement priorities* spring from the frequent need for co-management of collective resources with public and private actors. Leaders of rural organizations need support to build market intelligence, and to understand the operating mechanisms and strategies of government and external funders, including platforms and processes used for policy design and formulation at local, regional, national and international levels. These platforms and processes, such as the REAF MERCOSUR initiative in Latin America,<sup>160</sup> can be effective in overcoming laws and regulations that limit the spheres of operation of rural collectives, including those that prohibit these groups from benefitting from public funding (IFAD 2015b).

Inclusive rural transformation requires the coordination of a variety of funding sources and programmes, and the cooperation of many agricultural, natural resource, public works and community development and financial providers. As rural communities, markets and local authorities are constantly changing, it is nearly impossible to fully plan for success without a flexible and adaptive approach. This is the rationale for so-called “territorial development approaches” and other spatially defined initiatives that embrace and operationalize the diversity of rural and urban actors in rural areas, aiming to develop a common agenda that spans the range of interests.

At the core of these approaches – well established across Latin America and becoming increasingly important in other parts of the world – are rural collective organizations seeking to link smallholder farmers to external economic and policy actors such as private businesses and governments. Marginalized groups can then gain access to the markets on which their livelihoods increasingly depend as rural transformation unfolds. For all these links to end in a positive-sum game in which all partners cooperate to advance their common interests, make and then increase profits, and share benefits and risks, policies must support local rules and authority, sanction local organizing and encourage the participation of civil society.

Building robust rural collective organizations – which can empower rural communities to participate in, and benefit from, current and expected changes from rural transformation – can only be a gradual process. However, it is essential, and support must be consistent and sustained. Government and the private sector have important and complementary roles in enabling collective organizations to deal with the many constraints they face. These roles must be identified and embraced, to provide incentives and enabling conditions for rural collectives to form, operate and contribute to shaping rural transformation pathways in the interests of marginalized groups and individuals.

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# Annex: Data on trends in structural transformation, rural transformation and rural poverty

Region/country	Structural transformation Share of non-agriculture in GDP (%)						Rural transformation Agriculture value added per worker (constant 2005 US\$)					
	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change
<b>ASIA AND THE PACIFIC (APR)</b>												
Bangladesh	71.1	75.4	78.1	81.3	83.0	▲	276	304	358	443	563	▲
Cambodia	52.9	53.6	65.7	66.7	65.6	▲	363	383	371	455	516	▲
China	77.8	81.9	86.5	89.4	90.6	▲	336	404	464	576	722	▲
India	71.2	74.1	78.7	81.8	81.5	▲	465	512	537	607	697	▲
Indonesia	81.7	82.5	84.8	86.1	86.5	▲	631	663	704	820	992	▲
Lao PDR	40.7	46.2	57.6	64.5	71.1	▲	349	392	442	468	489	▲
Pakistan	74.3	73.5	76.2	77.1	75.1	▲	889	1 030	1 020	1 051	1 065	▲
Philippines	78.3	81.8	86.7	87.2	88.1	▲	822	825	918	1 064	1 120	▲
Viet Nam	65.9	73.6	78.7	80.8	81.0	▲	277	316	367	420	468	▲
<b>LATIN AMERICA AND THE CARIBBEAN (LAC)</b>												
Bolivia	83.3	83.9	84.8	86.3	87.1	▲	622	630	617	639	644	▲
Brazil	91.8	94.6	93.7	94.7	94.7	▲	1 750	2 168	2 873	3 751	4 943	▲
Chile	90.6	93.3	94.7	96.1	96.6	▲	3 303	3 615	4 718	5 697	6 371	▲
Colombia	84.0	85.8	91.0	92.1	93.5	▲	3 510	2 960	2 889	3 308	3 657	▲
Costa Rica	86.9	87.4	91.2	91.8	93.7	▲	3 499	4 154	4 575	5 568	6 383	▲
Dominican Republic	87.6	91.0	92.9	93.0	93.7	▲	2 757	3 206	4 074	5 225	7 389	▲
Ecuador	78.0	79.7	87.1	90.1	90.5	▲	2 087	2 406	2 792	3 399	4 000	▲
El Salvador	84.1	86.6	90.4	88.4	88.1	▲	2 141	2 246	2 416	3 037	3 444	▲
Guatemala			85.3	87.5	88.5	▲	1 557	1 859	1 842	1 823	1 930	▲
Honduras	77.9	79.6	86.0	87.1	86.1	▲	1 274	1 368	1 591	1 969	2 406	▲
Mexico	93.8	95.7	96.4	96.7	96.7	▲	2 713	2 889	3 284	3 629	4 064	▲
Nicaragua	78.7	77.8	81.3	82.3	80.2	▲	1 623	1 907	2 402	3 072	3 718	▲
Panama	91.3	92.6	92.3	94.3	96.5	▲	2 396	2 662	3 490	4 081	3 868	▲
Paraguay	82.4	81.8	83.2	79.5	79.0	▼	1 678	1 846	1 911	2 207	2 807	▲
Peru	90.7	90.6	91.6	92.4	92.6	▲	1 029	1 230	1 401	1 626	1 848	▲
Uruguay	91.6	92.2	90.8	90.0	91.0	▼	5 690	7 108	7 003	8 283	9 612	▲

**Social inclusion (rural poverty)**

Rural poverty headcount at country  
poverty line (%)

Extreme rural poverty headcount rate  
at US\$1.25/person/day (%)

1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change
		52.3	43.8	35.2	▼		70.1	65.1	56.0	48.9	▼
		54.2	39.1	23.2	▼	48.0		30.6	28.8	7.7	▼
				7.9		72.3	50.2	43.7	24.2	13.5	▼
50.1		41.8	33.8	25.7	▼	52.5			43.8	29.4	▼
	22.9	20.5	19.7	15.2	▼	57.6	50.1	33.9	25.1	14.6	▼
	42.5	37.6	31.7	28.6	▼		63.4	48.0	30.6	32.1	▼
	34.7	33.7	27.0		▼		17.7		19.5	8.5	▼
							33.5	34.8	29.7	25.1	▼
				22.5			37.0	35.3	21.5	3.2	▼
1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change
	84.0	80.3	74.3	60.8	▼		49.2		35.0	18.6	▼
		70.6		31.1	▼		10.3		7.8	5.6	▼
			47.7	32.8	▼		1.2	1.2	0.8	0.8	▼
		58.9	55.6	45.4	▼			23.6	12.9	11.4	▼
		26.3		27.9	▲		4.7		3.5	1.5	▼
		51.5	53.8	48.7	▼		5.8	8.0	6.3	3.2	▼
		73.7	60.7	46.1	▼		23.1		12.8	7.3	▼
			43.5	42.1	▼		20.2		5.7	1.6	▼
		74.5	70.5	71.4	▼			16.8	19.2	22.3	▲
		71.8	65.8	66.7	▼		29.3		34.1	25.2	▼
		66.5		62.4	▼		14.4	9.5	3.5	4.0	▼
		70.3	66.8	50.1	▼		25.5	24.6	15.4		▼
		64.4	61.4	51.0	▼		23.0		13.7	8.3	▼
		50.7	50.0	40.3	▼		12.2		8.1	5.7	▼
		78.5	74.3	52.8	▼		23.9		18.4	7.1	▼
		20.7	14.4	4.4	▼				0.3	0.2	▼

Region/country	Structural transformation Share of non-agriculture in GDP (%)						Rural transformation Agriculture value added per worker (constant 2005 US\$)					
	1990- 1994	1995- 1999	2000- 2004	2005- 2009	2010- 2014	Change	1990- 1994	1995- 1999	2000- 2004	2005- 2009	2010- 2014	Change
<b>EAST AND SOUTHERN AFRICA (ESA)</b>												
Botswana	95.2	96.1	97.2	97.4	97.3	▲	854	801	642	734	777	▼
Burundi	47.4	50.2	53.6	58.5	59.9	▲	226	193	170	129	126	▼
Ethiopia	40.5	46.4	56.5	53.4	55.2	▲	175	176	164	208	258	▲
Kenya	69.8	68.7	70.0	75.1	70.8	▲	374	349	364	370	384	▲
Lesotho	80.6	82.1	89.1	91.9	93.8	▲	372	370	355	304	347	▼
Madagascar	72.0	70.8	70.6	72.9	72.5	▲	239	228	219	207	188	▼
Malawi	59.7	65.8	63.0	68.6	68.5	▲	120	180	207	201	233	▲
Mozambique	64.9	67.9	75.6	72.4	72.5	▲	155	186	201	262	301	▲
Namibia	90.5	90.0	89.2	90.4	91.9	▲	2 049	2 375	2 687	2 557	2 370	▲
Rwanda	63.7	56.0	62.7	64.1	67.0	▲	208	228	248	268	301	▲
South Africa	95.7	96.1	96.6	97.1	97.5	▲	3 172	3 341	4 072	5 036	6 461	▲
Swaziland	89.1	86.8	89.8	91.9	93.3	▲	1 065	1 066	1 160	1 279	1 405	▲
Tanzania	53.0	58.0	67.1	69.3	67.8	▲	254	263	291	332	353	▲
Uganda	47.6	56.6	73.4	74.6	72.5	▲	205	220	234	226	220	▲
Zambia	78.1	82.9	82.4	86.3	89.8	▲	429	492	454	388	357	▼
<b>WEST AND CENTRAL AFRICA (WCA)</b>												
Benin	66.0	66.5	73.7	72.5	75.2	▲	522	614	745	846	911	▲
Burkina Faso	68.5	63.2	64.0	63.2	65.3	▼	229	269	310	327	326	▲
Cabo Verde	87.5	87.5	89.1	91.6	91.9	▲	1 060	1 795	2 558	3 243	4 291	▲
Cameroon	75.8	75.7	78.3	77.7	77.0	▲	564	681	810	967	1 181	▲
Central African Republic	53.3	47.9	45.7	45.1	44.2	▼	432	480	561	598	563	▲
Congo	88.6	90.4	94.2	95.8	95.9	▲	451	415	466	586	731	▲
Guinea	80.3	79.4	76.7	75.2	79.0	▼	145	149	176	192	212	▲
Mali	59.9	61.0	63.1	62.1	60.0	▲	601	637	659	747	870	▲
Mauritania	64.1	64.9	64.6	74.5	78.9	▲	1 169	1 137	956	975	1 046	▼
Nigeria	67.5	65.7	63.0	66.5	78.1	▲	1 103	1 314	2 157	3 401	4 406	▲
Senegal	80.3	80.2	82.8	84.3	83.7	▲	396	393	367	360	367	▼
Sierra Leone	58.8	45.4	48.4	45.1	45.3	▼	619	597	607	752	896	▲
Togo	63.8	61.5	63.4	63.1	63.4	▼	580	668	643	658	600	▲
<b>NEAR EAST, NORTH AFRICA, EUROPE AND CENTRAL ASIA (NEN)</b>												
Armenia	66.1	65.1	74.4	80.2	79.3	▲	2 293	3 021	4 265	6 626	8 258	▲
Egypt	82.6	82.9	83.7	86.0	85.6	▲	1 310	1 536	1 774	2 030	2 392	▲
Jordan	93.0	96.6	97.4	97.1	96.6	▲	2 641	2 060	2 395	3 584	4 627	▲
Kazakhstan	80.1	88.6	91.5	93.8	95.1	▲	3 013	1 954	2 518	3 316	3 821	▲
Kyrgyzstan	61.7	56.9	63.6	71.2	81.7	▲	837	952	1 278	1 284	1 370	▲
Morocco	80.4	80.9	83.7	85.7	86.1	▲	2 010	1 896	2 248	2 957	4 228	▲
Tajikistan	71.1	66.5	74.6	77.2	74.2	▲	536	452	600	773	1 026	▲
Tunisia	82.6	86.9	89.5	90.6	91.1	▲	3 205	3 217	3 609	4 061	4 356	▲
Turkey	83.7	85.3	88.9	90.8	91.3	▲	3 649	3 961	4 547	5 337	6 493	▲

Source: IFAD, based on World Bank.

Social inclusion (rural poverty)											
Rural poverty headcount at country poverty line (%)						Extreme rural poverty headcount rate at US\$1.25/person/day (%)					
1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change
40.4		44.8	24.3		▼	20.9		34.2		14.9	▼
			68.9				87.3		82.0		▼
	46.5	39.3		30.4	▼			50.8	35.3	28.5	▼
			49.1				32.9		48.5		▲
68.9		60.5		61.2	▼	40.9	58.6			58.4	▲
		78.2	80.6	81.5	▲				87.6	92.4	▲
	66.5	55.9		56.6	▼		97.5		79.0	77.9	▼
	71.3	55.3	56.9		▼		81.6	78.4	61.0		▼
81.6		48.7	37.4		▼			34.1		23.7	▼
			61.9	48.7	▼			82.0	73.3	62.1	▼
			87.6	77.0	▼		38.3	42.1	34.1	8.3	▼
		79.7	73.1		▼			52.5		47.4	▼
				33.3		71.8		88.0	54.1	48.2	▼
60.3	43.1	42.7	30.7	22.4	▼		53.8		55.0	34.0	▼
				77.9			71.6		83.9	89.2	▲
1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change
			37.8	39.7	▲			49.0		43.5	▼
		65.8	52.8		▼		81.6	61.6	46.0		▼
			44.3					33.4	23.2		▼
	59.6	52.1	55.0		▼		57.2	31.1	38.5		▼
			69.4					65.5	71.7		▲
		65.2		74.8	▲				67.3	81.2	▲
82.1		59.9	63.0	64.7	▼						
		64.8	53.8		▼			65.6	55.5		▼
		62.6	59.4		▼	91.2	25.0	20.8	14.3		▼
		56.6	52.8		▼		69.9	67.6		67.2	▼
		65.1	58.8	57.1	▼			45.9	34.2	33.8	▼
		78.7		66.1	▼			71.8		70.8	▼
			75.1	73.4	▼				61.5	63.6	▲
1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	Change
		47.9	31.2	33.6	▼						
		24.5	28.9	32.3	▲			2.0	3.4		▲
				16.8				1.1	0.3	0.3	▼
		54.5	23.2	7.5	▼		6.6	9.6	0.2	0.1	▼
			40.8	38.7	▼		29.2	42.7	27.3	11.1	▼
	24.2	25.1	14.4		▼			7.4	3.9		▼
		73.8	49.2	25.7	▼		61.5	18.5	6.1	31.6	▼
							4.8	1.8	1.2	0.8	▼
		34.5	19.4	7.4	▼			1.4	1.8	0.0	▼

# Endnotes

- 1 SDGs affected directly and indirectly by rural development and transformation include: Goal 1 – End poverty in all its forms everywhere; Goal 2 – End hunger, achieve food security and improved nutrition and promote sustainable agriculture; Goal 3 – Ensure healthy lives and promote well-being for all at all ages; Goal 4 – Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; Goal 5 – Achieve gender equality and empower all women and girls; Goal 6 – Ensure availability and sustainable management of water and sanitation for all; Goal 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; Goal 10 – Reduce inequality within and among countries; Goal 12 – Ensure sustainable consumption and production patterns; Goal 13 – Take urgent action to combat climate change and its impacts; and Goal 15 – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
- 2 The reliability of this widely used measure of agricultural productivity is often questioned due to large cross-country disparities in levels. Gollin et al. (2014) find that these large disparities are real and not merely an artifact of mis-measurement or poor data quality.
- 3 This focus on the income poverty dimension of inclusion does not negate or minimize the importance of other aspects of inclusion. There is far more to inclusion than income. Other dimensions of inclusion are considered in the regional and thematic chapters, and in the Spotlights (described in the next section). But because data on income poverty exist for most countries, such a focus allows for rigorous comparing and contrasting of alternative pathways and patterns of rural transformation through one important lens.
- 4 IFAD has launched an analytical programme with that aim.
- 5 The eight countries are Peru, Brazil, Mexico and Uruguay (LAC), Jordan (NEN), and Botswana, Namibia, and South Africa (ESA).
- 6 The two countries are Turkey (NEN) and Uruguay (LAC).
- 7 Due to lack of relevant data for Jordan and Tunisia on rural poverty at country lines, this analysis was completed for only 60 of the 62 countries in the dataset.
- 8 This representation of the relative importance of agriculture under structural transformation is similar in spirit to that in the World Development Report 2008: Agriculture for Development (World Bank 2008). But here the focus is on the political economy of different rural development approaches, with the changing importance of agriculture under structural transformation a defining feature.
- 9 Measures classified here as “institutional innovations” may be considered “policy reforms” elsewhere, and “investments” here may be “institutional innovations” elsewhere. The issue is not which measure fits in what category (the table’s rows), but rather which measure is most relevant in a given context (the columns).
- 10 Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela (Bolivarian Republic of).
- 11 Small and medium-sized cities and their rural hinterlands that are mutually dependent owing to linkages such as labour and product markets and social networks.
- 12 Data are from the World Bank’s World Development Indicators 2015; all comparisons are in constant 2005 US dollars.
- 13 As reported by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), based on official poverty lines for each country.
- 14 Data from World Development Indicators (WDI), The World Bank; all comparisons in constant 2005 United States dollars.
- 15 Brazil, Chile, Colombia, Ecuador, El Salvador, Guatemala, Mexico and Nicaragua, which together account for about 90 per cent of all family farms in the region.
- 16 The origin of modern corporate farms is varied. In northwest Mexico, for example, they emerged from the consolidation of smaller farms following agrarian reform. In the Southern Cone, they are a result of early colonization. In the Cerrados of Brazil, they stem from a policy-driven, late-colonization process. In Chile, they emerged from the breakdown of large *haciendas* after the agrarian reform.
- 17 In Chile, for example, we estimate that 21 per cent of farms belong to the corporate sector and are responsible for about 80 per cent of agricultural GDP.
- 18 Alain de Janvry coined the term.
- 19 Some of this is due to the reclassification of formerly rural villages that have grown to the population size where they start being called “urban.”
- 20 Jose Eli da Veiga (2002) wrote a ground-breaking book on this issue, entitled *Imaginary Cities*. Most developing countries have this problem. The most common thresholds for what constitutes an “urban” locality are populations of as low as 1,000–5,000 (McGranahan and Satterthwaite 2014).
- 21 Defined as the share of the urban population in the largest city in each country.
- 22 Based on data from the statistical annex of ECLAC (2014b).
- 23 ECLAC (2014). The poverty femininity index is measured as:
 

$\frac{\text{Female population in poor households/}}{\text{Male population in poor households}}$
<hr style="width: 100%;"/>
$\frac{\text{Female population in total households/}}{\text{Male population in total households}}$
- 24 Data from CEPALSTAT database, ECLAC.
- 25 We use this index because it is constructed by a think tank that supports a rather extreme view of economic freedom; hence, its measurements should reflect strict standards of free-market economic policies.
- 26 Each of the several international indices of institutional quality has pros and cons. We use this one because it offers a consistent set of indicators with standardized data for a large number of countries.
- 27 Except for the regulatory quality index in the case of structural transformation, and of voice and accountability on rural transformation, which are statistically correlated at a 5 per cent confidence interval.
- 28 Several countries have made much progress in poverty reduction driven by fast economic growth, while showing growing levels of economic inequality. They also would rank low in any analysis of political inclusiveness.
- 29 Collective action involving a range of actors with varying degrees of agency (Chapter 101 discusses this in more detail).
- 30 Unfortunately, we lack studies that compare the same country, product and value chain, and the changes in productivity between corporate and family farms. However, based on the authors’ own field observations, we would tend to say that smallholders increase their productivity in the countries and value chains with an overall productivity improvement. Whether the rates are similar (or not) between these two large categories of farms is an empirical question waiting for an answer.

- 31 With exceptions such as Mexico, which had annual GDP growth of 5–8 per cent over four continuous decades after 1940.
- 32 Although, at the time of writing, LAC countries are showing far slower economic growth.
- 33 Paraguay, with 21 per cent, has the largest agricultural sector in GDP.
- 34 Argentina, Brazil, Colombia, Mexico, Peru and Venezuela. Together, they have 67 per cent of the rural people, 80 per cent of the smallholders and the bulk of the rural poor in LAC.
- 35 Protective interventions activate the demand of public services and enhance human capital for the next generation; preventive interventions consolidate resilience mechanisms to cope with risk and promote access to multifunctional tools; and promotional interventions connect the population with opportunities and transform people from passive receivers to actively productive citizens.
- 36 Ethiopia, Ghana, Honduras, India, Pakistan and Peru.
- 37 This chapter does not cover the Middle East and Central Asia.
- 38 High rates of urbanization in the Pacific are driven mainly by Australia and New Zealand.
- 39 All growth rates in this section are estimated based on the regression method. Data are from the World Bank's World Development Indicators (WDI 2015).
- 40 Developing countries only, from 3 per cent to 14 per cent.
- 41 Data for Viet Nam and India are not available for before the mid-1990s.
- 42 Scores of 9.9 or lower denote low hunger; scores between 35.0 and 49.9 denote alarming hunger.
- 43 The WDI on vulnerable employment defines this as unpaid family work and own-account work.
- 44 Geographical designations used in this chapter are for research purposes only and do not necessarily reflect the entire IFAD/NEN geographical coverage. The NEN region of IFAD has the particularity of having current operations straddling three continents (Africa, Europe and Asia) clustered in two subregions – the Near East and North Africa (NENA) and the transition countries of the western Balkans and the newly independent states that came into being after the collapse of the Soviet Union. As of 30 June 2015, 37 member countries fall under NEN coverage, including three central Asian countries – Kazakhstan, Kyrgyzstan and Tajikistan – which were previously part of the Asia and the Pacific Region (APR).
- 45 The NENA subregion features the highest rate of youth unemployment in the world, ranging from 27.9 per cent in Near East countries to 29.5 per cent in North African economies (ILO 2014).
- 46 The unemployment rate among the youth in the region far exceeds the global average of 13.2 per cent reported by ILO in 2014. The region is grappling with youth unemployment rates ranging from 27.9 per cent in Middle Eastern countries to 29.5 per cent in North Africa. The average youth unemployment rate in CIS countries, while smaller than those prevailing in the NENA subregion, stands at 18.1 per cent, well in excess of the global average.
- 47 Arab countries are home to an estimated 100 million rural, opportunity-bereft youth, 15–29 years of age, accounting for about one third of the region's population. This blight is straining the rural social fabric and fueling unrest, including conflict and terrorism.
- 48 Empirical research (Laursen and Mahajan 2005) indicates that volatility has a significant negative effect on poverty reduction.
- 49 Based on FAO Aquastat data.
- 50 IPCC working group II on impacts, adaptation, and vulnerability, Fifth Assessment Report.
- 51 A kolkhoz (plural kolkhozes) designated a collective farm resulting from combining individual landholdings into a cooperative structure. A sovkhos (plural sovkhoszes) referred to state-owned farm. Both types of farms co-existed in the rural areas of the former Soviet Union.
- 52 Emerging Asia comprises China, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam. MENA comprises Egypt, Morocco, Syria, Tunisia and Turkey.
- 53 According to Pantulioana et al. (2011), until the 1970s, Sudan's urbanization was driven mainly by pull factors as the country's economy expanded. The second, more rapid urbanization phase since the 1970s (captured by our analysis) was driven by push factors, particularly natural disasters and armed conflict. The country saw periodic influxes of displaced people into cities. For instance, more than 2 million people fled to Khartoum during the second civil war of 1983–2005.
- 54 Each review is structured on the analytical framework previously described – exploring the transmission channels between the four key drivers and the four key outcomes.
- 55 Lerman and Sedik (2009) used the standard Solow accounting methodology to show that the recovery stemmed from extensive rather than intensive sources of productivity enhancement.
- 56 The midwest includes the Sidi Bouzid area, home to the informal fruit seller who set himself ablaze and provided the spark to the Tunisian revolution.
- 57 Turkey is the world's seventh-largest agricultural producer and its third-largest exporter of fruit and vegetables.
- 58 Using the Social Accounting Matrix (SAM-based model), the World Bank concluded that oil-based growth in Yemen did not benefit the rural areas much.
- 59 Based on FAO Aquastat data, the average renewable water share per capita per year in the MENA region amounts to an estimated 430 cubic metres, well below the water poverty line of 1,000 cubic metres, thus indicating an absolute scarcity.
- 60 Yemen Poverty Assessment (Government of Yemen et al. 2007)
- 61 Growth elasticity of overall poverty in Yemen is estimated to be relatively low, at 1.8. This elasticity is an increasing function of the level of development and a decreasing function of prevailing inequality (World Bank 2007).
- 62 The State of Food Insecurity in the World (FAO et al. 2015).
- 63 See, for example, OECD 2015 and the Committee on World Food Security's (CFS's) (2015) Framework for Action for Food Security and Nutrition in Protracted Crises (CFS-FFA) at ([http://www.fao.org/fileadmin/templates/cfs/Docs1415/FFA/CFS\\_FFA\\_Final\\_Draft\\_Ver2\\_EN.pdf](http://www.fao.org/fileadmin/templates/cfs/Docs1415/FFA/CFS_FFA_Final_Draft_Ver2_EN.pdf)).
- 64 See, for example, World Bank 2011.
- 65 Of those 50 fragile states, 28 are African countries, and 17 of the 36 countries in the AfDB/ADB/World Bank harmonized list of worldwide fragile situations are in Africa.
- 66 See the OECD definition of a 'fragile situation' here: <http://www.oecd.org/dac/governance-peace/conflictandfragility/rf.htm>. The World Bank, AfDB and ADB define fragile situations as having either: a) a harmonized average Country Policy and Institutional Assessment (CPIA) rating of 3.2 or less, or b) the presence of a UN and/or regional peacekeeping mission during the past 3 years defines fragile situations.
- 67 The full background Rural Development Report (RDR) paper "Fostering inclusive rural transformation in fragile states and situations", from which this spotlight was extracted, also reviewed agriculture and rural development programmes in the four countries.
- 68 This need has been increasingly acknowledged. See, for example, Chandry 2011; C/CID 2007; Grävingsholt et al. 2012; OECD 2015.
- 69 See Hussein et al. 1999 (on farmer-herder competition and conflict) and the chapter on 'Land and Natural Resources: Access, Tenure Security, and Control' in this publication.
- 70 The United Nations defines Southern Africa as Botswana, Lesotho, Swaziland, Namibia and South Africa.
- 71 See annex figures A1 and A2 for classification of South-East Asia (SEA) and LAC into "lagging" and "other."

- The “lagging” category is region specific, capturing the notion that over the period under consideration, a given country’s per capita GDP was low relative to others in that region. It does not represent an assessment of future prospects, nor of its likely future success in cutting poverty, particularly so for Viet Nam in Asia and for Honduras in Latin America.
- 72 The youth bulge is measured as the number of youth entering the labour market expressed as a share of the existing labour force.
- 73 The figure assumes that the share of 15-year-olds entering the job market in each country is equal to the labour force participation rate of the 15-24-year-old age group in that country.
- 74 As shown by Haggblade et al. (2007; Table 1.6), the importance of this negative effect on rural employment will vary across countries. Overall, the figures suggest that manufacturing is a small share (less than one quarter) of RNFE, especially in SSA, so that the competition effect from urban areas is not likely to have major impacts in rural areas.
- 75 The point at which surplus rural labour is exhausted and wages start to rise.
- 76 Figure calculated from Groningen Growth and Development Centre (GGDC) database.
- 77 As originally conceived, Moore’s Law depends on the shrinking of transistor size. Many observers expect the physical limit of current technologies – sizes of 5-7 nanometres – to be reached by 2020 or 2022 (Mayberry, 2010; Colwell, 2013; Lyke 2015). Whether this stops the advance in the computing speed of individual machines depends on whether alternative materials and approaches prove feasible. Lyke (2015) speculates that moving to three-dimensional integrated circuitry (3DIC) could allow another 50 years of progress similar to that of the past 50 (Moore’s Law reached 50 years old in 2015). More broadly, the emergence of powerful mobile devices, the fibre optic cloud, and the integration of the two, may provide a platform for massive increases in computing power even if gains in individual processing speed slow substantially (Swanson, 2015).
- 78 As happened in textiles in Japan as rural areas industrialized based on cheap rural female labour in the 1930s, to its movement to the Republic of Korea, and then more recently to China, Bangladesh and possibly Myanmar.
- 79 This classification scheme is distinct from that used in the discussion of demographic trends. Here, “lagging” is not specific to region, but rather defined the same across all countries. While the classification does not necessarily represent an assessment of future prospects, it does condition the possibilities the countries face and the strategies they may need to use to advance.
- 80 Ethiopia would probably show a meaningfully larger rise in its manufacturing share if data were from 2014, given the heavy investments (and employment creation) since 2011 in labour-intensive production of clothing, leather goods and other areas.
- 81 Nicaragua is perhaps a surprising entry, but has similar GDP per capita and manufacturing share of GDP as Viet Nam, and in 2011 received about 40 per cent more foreign direct investment per capita than Viet Nam.
- 82 Annex Table A1 lists results for all countries.
- 83 The cut-off in the second approach is the median percentage rise in real manufacturing value added. Annex Table A2 lists results for only the “core” countries – the 30 (out of 38 total) countries that maintain their category in the two approaches.
- 84 Exported services, such as call centres, are an exception. More generally, services that can be digitized – growing now to include legal services and, in nascent, but growing form, high-end activities such as medical diagnostics – can grow without local formal manufacturing. It is unclear, however, how much global employment such activities can provide.
- 85 The Lao People’s Democratic Republic and Myanmar might fit in this group, but lack of data prevents our confirming this.
- 86 Criticisms have related primarily to the possible strategic intent of the Chinese government in these investments, and on the projects’ often worrying practices, from a Western developed-country perspective, on the environment, labour practices and human rights. Brautigam (2011) and Brautigam and Xiaoyang (2011) review these criticisms.
- 87 Nigeria, Botswana and Zambia and emerging in, for example, Ghana, Mozambique and Tanzania.
- 88 Especially educational quality in science and mathematics, and in technically driven public-private partnerships.
- 89 The disparities in women’s access to and productivity of resources are some of the fundamental reasons for the productivity gap between women and men. Even when women have access to the same amount of inputs as men, equal access does not necessarily achieve the same effect for agricultural productivity.
- 90 In Tanzania, for example, an estimated 97 per cent of the agricultural gender gap is related to unequal access to male family labour.
- 91 IFAD Social Reporting Blog: Now the launch is over... what will the SDGs mean for IFAD’s work with rural women? Oct. 2015. <http://ifad-un.blogspot.it/2015/10/now-launch-is-over-what-will-sdgs-mean.html>
- 92 Greater control by women over household resources translates into better outcomes for their children in education, health care, and nutrition.
- 93 Most countries already have policies to address discrimination against women and girls. Further, the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) has been ratified by 189 State Parties.
- 94 About 80 per cent of the certified organic farmers in the developing world are in only five countries – India, Uganda, Mexico, Tanzania and Ethiopia.
- 95 This number likely overestimates the total, as many small-scale farmers are certified for both the organic and the fair trade markets.
- 96 <http://www.fn.de.gov.br/programas/alimentacao-escolar/alimentacao-escolar-apresentacao>
- 97 <http://www.mds.gov.br/segurancaalimentar/aquisicao-e-comercializacao-da-agricultura-familiar>
- 98 For Walmart: <http://corporate.walmart.com/global-responsibility/environment-sustainability/sustainable-agriculture>. For Unilever: <http://www.unilever.com/sustainable-living-2014/enhancing-livelihoods/inclusive-business/livelihoods-for-small-farmer-farmers/>. For Nestle: [http://www.nestle.com/asset-library/Documents/Library/Documents/Corporate\\_Social\\_Responsibility/2011-CSV\\_rural-development.pdf](http://www.nestle.com/asset-library/Documents/Library/Documents/Corporate_Social_Responsibility/2011-CSV_rural-development.pdf)
- 99 For the certified organic sector: Willer and Lernoud, 2014, and for certified Fairtrade: Fairtrade International, 2014.
- 100 The phrasing “food and nutrition security” differs from the related term, “food security and nutrition,” which appears in most official IFAD documents. This former term is used here because it better highlights the integral linkages between food security, on one hand, and nutrition security, on the other. It is also more widely used, including by other UN agencies (FAO and UNICEF), the International Food Policy Research Institute, and others.
- 101 To promote understanding of the core argument, the cross-cutting dimension of food stability is not addressed directly.
- 102 Such groups include low-income households, women, indigenous, or under-represented peoples, cooperatives, or certain producer groups. See for example Feder 1985, Binswanger and Sillers 1983, Carter and Olinto 1996, Petrick 2005, Foltz 2004, Bernhardt and Bacuks 1990, and Eswaran and Kotwal 1990.
- 103 See for example Bechtel and Zander (1994), where the concept of customized and demand-led financial services takes centre stage; and Von Pischke (1991), on a subjectively felt “need” and an objectively testable

- "requirement" for the same.
- 104 Other definitions exist: Sarma and Pais (2011), Beck et al. (2000, 2007a, b), and Chakravarty and Pal (2013) argue that it is a process that ensures ease of access, availability and use of the formal financial system for all members of an economy at reasonable cost, and that they are provided as fair and safe financial services.
- 105 The triangular dimensions in the schematic should not be seen as suggesting three separated elements of financial inclusion. There are important dynamics between accessibility of financial services, the appropriateness of financial products, and the financial capability and engagement of the targeted users. The World Bank, for example, considers a rather sequential interaction (World Bank 2014).
- 106 This reflects the findings in the employment chapter that men systematically are more involved in the rural non-farm sector than women.
- 107 A total of 5,000 households in rural and peri-urban areas in Benin, Burundi, Egypt, Ethiopia, Ghana, Kenya, Madagascar, Senegal, Uganda, Zambia and Zimbabwe. (Baseline survey on the use of rural post offices for remittances in Africa, IFAD 2015).
- 108 Indeed, sub-Saharan Africa is the global epicentre of mobile money accounts, followed by South Asia. East Africa – where 20 per cent of adults have a mobile money and a financial institution account, and 10 per cent have a mobile money account only (no bank account) – leads the continent, with Kenya having the world's highest share (58 per cent of adults).
- 109 The effects of migration on children's education are mixed. An income effect is countered by other effects related to household separation.
- 110 There is, nonetheless, some evidence that formal financial services can effectively replace informal finance in rural areas. A sequence of empirical surveys on banking density from the Reserve Bank of India shows the relative increase in banking density in rural areas and the corresponding decline of informal and often usurious moneylenders. The business of moneylenders can often be quite effectively curtailed by competing and less expensive sources of loans, because moneylenders are not a provider of choice, but usually the last resort.
- 111 For the specific area of agricultural value chain finance and its implications for low-income rural producers, see Zander 2015b; KIT and IIRR 2010; and Miller and Jones 2010.
- 112 Most of the district data for India had been assembled by the International Crops Research Institute for the Semi-Arid Topics in Hyderabad, and the credit and rural bank branch data were obtained from the National Bank for Agricultural and Rural Development.
- 113 Credit advanced by formal lending institutions is the outcome of both decisions of the farmer on how much to borrow, and decisions of the bank of how much to give him. The resulting statistical problem is the joint dependence of credit demand and credit supply on other variables, such as the weather, prices or technology that also influence the demand and supply of credit. To solve this endogeneity problem, the fixed effect and instrumental variables techniques were used, with the number of rural commercial bank branches as an instrument for credit supply.
- 114 In an earlier paper (Binswanger et al. 1993), however, commercial bank branches did have a significant impact on output.
- 115 In the same earlier paper (Binswanger et al. 1993) rural bank branches had a significant impact on tractors and three other investments.
- 116 These meetings, quite aside from their role in the financial service, are often a source of empowerment for women.
- 117 See Rutten (2006) for a summary of the overlaps between structured and value chain financing on the one hand, and Islamic financing modalities on the other.
- 118 Leadership, diversity (of policy approaches), innovation, (consumer) protection, empowerment, cooperation, knowledge, proportionality (of the policy and regulatory framework with the risks and benefits) and the existence of a suitable regulatory framework for reflecting international standards.
- 119 The G20 also formed the Small and Medium Enterprises Finance Forum, given that small firms in rural and agricultural areas remain excluded from formal finance, especially in their early phases. The Global SME Finance Forum of the G20 group in November 2015 was the first annual gathering of this G20 initiative.
- 120 <http://www.atai-research.org/about-atai>.
- 121 The chapters on markets and value chains, rural finance, land and natural resources, and collective action in this report examine other aspects of innovation in agrifood value chains.
- 122 Levels and trends in national public investments in agricultural research are regularly compiled by the Agricultural Science and Technology Indicators (ASTI) initiative ([www.asti.cgiar.org](http://www.asti.cgiar.org)).
- 123 <http://www.fao.org/docrep/003/x9602e/x9602e07.htm>, accessed 2 August 2015.
- 124 <http://www.ifad.org/climate/regions/esa/maasai.htm>, accessed 2 August 2015.
- 125 Anderson et al. (2013) present a review of the substantial political-economy literature on this topic.
- 126 Food analysts and activists also point out the potential to reduce future food needs through reductions of food waste. This would require more research on post-harvest innovations, greater consumer awareness and improved labelling (Parfitt et al. 2010).
- 127 Galor et al. (2009) argue that large land owners have an incentive to maintain cheap rural labour supplies, so oppose education that would raise the productivity of labour in the industrial sector. Kourtellos et al. (2013b) uses cross-country data to show that countries with higher land inequality have lower primary school enrolment. Unal (2008) analyses regional data from Turkey and shows that land inequality reduces the efficiency of input markets, while Casseli (2013) suggests that land inequality reduces the start-up of businesses in industries that have high reliance on external finance. Comparing the transformation processes of Argentina and Canada, Adamopoulos (2008) argues that more inequitable land ownership in Argentina led to higher tariffs that dampened industrial growth.
- 128 IFAD maintains a land-rights and access indicator (on a scale of 0-1, with 0 indicating least secure and 1 most secure) for low- and middle-income countries, which it updates each year on the basis of five components, namely the extent to which: the law guarantees secure land rights for the poor; the law guarantees secure land rights for women and other vulnerable groups; land is titled and registered; land markets function; and government policies contribute to the sustainable management of common property resources. The 10 developing countries with the highest and largest increases in this indicator during 2005-2014 had indices of 0.8-0.9, the 10 with the lowest and/or decreasing index levels had indices of 0.1-0.5, while the 10 with the greatest amounts of land investment had indices during 2010-2014 of 0.5-0.7.
- 129 Mullan (2014) classifies the human benefits of forests into benefits for health (fresh water quality, disease transmission and air quality), human safety (moderating storm surges, floods and landslides), energy security (fuelwood and hydropower), food security (gathered foods, pollination and fertility in slash-and-burn) and income generation (timber, land clearance, ecotourism and ecosystem services).
- 130 Variations by country in dam storage capacity are huge. Some of the world's poorest countries have tiny capacity, including (per person) the Democratic Republic of the Congo with 1 m<sup>3</sup>; Congo, Jamaica and Benin with 2 m<sup>3</sup>; Malawi and Nepal with 3 m<sup>3</sup>; and Niger with 4 m<sup>3</sup>. Other developing countries have capacity several orders of magnitude higher, including Ghana with 5,854 m<sup>3</sup>, Zambia

- with 7,183 m<sup>3</sup> and Zimbabwe with 7,246 m<sup>3</sup> (United Nations Water 2015).
- 131 Thompson (2014) provides a detailed discussion of the sequences of irrigation development and institutional change that often occur in developing country contexts.
- 132 Mullan (2014) classifies the human benefits of forests into benefits for health (fresh water quality, disease transmission, and air quality), human safety (moderating storm surges, floods, and landslides), energy security (fuelwood and hydropower), food security (gathered foods, pollination, and fertility in slash-and-burn), and income generation (timber, land clearance, ecotourism, and ecosystem services).
- 133 IFAD is a founding member of the International Land Coalition and thus has a special interest in its 10 commitments to “jointly realize people-centred land governance.”
- 134 FAO, the World Bank, IFAD, the G8 New Alliance for Food Security and Nutrition, the African Union and USAID are among the agencies that have developed such guidelines.
- 135 REDD+ is a mechanism to reduce deforestation and increase afforestation, channelling funds from industrialized countries to tropical countries that reduce deforestation. If successful, REDD+ would reduce deforestation and forest degradation during the expansionary phase of the forest transition, and increase afforestation during the intensification phase (Minang et al. 2012).
- 136 Carbon Trade Watch ([www.carbontradewatch.org](http://www.carbontradewatch.org)) and REDD Monitor ([www.redd-monitor.org](http://www.redd-monitor.org)) report on the considerable opposition to REDD+ by indigenous people’s groups and civil society. For example, the Durban Declaration of September 2015 states: “We are united to oppose and reject the commodification, privatization and plunder of Nature, which include REDD+ and other market-based mechanisms including biodiversity and conservation offset that put profit above the wellbeing of humanity and the planet” (<http://www.redd-monitor.org/2015/09/10/durban-declaration-on-redd-stop-the-disastrous-redd-experiment/#more-20615>).
- 137 Integrated water resource management can be made more effective and sustainable if based on existing systems of water management that have proven to be well-adapted to their environment. Examples include the Qanats of Iran, Western China and the Mediterranean (Hamidian et al. 2015) and the Kuhl systems in the Hindu-Kush Himalayan region (Vaidya 2015).
- 138 It is also relevant for mineral extraction.
- 139 Report of the Special Rapporteur on the Rights of Indigenous Peoples, James Anaya: Extractive Industries and Indigenous Peoples; A/HRC/24/41, July 2013. Much of what remains of these natural resources is situated on indigenous people’s land.
- 140 In Latin America, the indigenous population increased by 49.3 per cent during 2000-2010, and the non-indigenous population by 13.1 per cent. Part of the increase can be explained by improved census processes and the inclusion of self-identification. ECLAC (2014): *Guaranteeing indigenous people’s rights in Latin America. Progress in the past decade and remaining challenges.*
- 141 In Latin America, gaps in poverty rates between indigenous and non-indigenous population groups are still wide. Poverty rates among the former are more than twice that among the latter, and levels of extreme poverty are more than three times as high. ECLAC (2015) *Inclusive social development. The next generation of policies for overcoming poverty and reducing inequality in Latin America and the Caribbean.*
- 142 In Australia for example, life expectancy for Aboriginals is 20 years less than for the non-Aboriginal population. UNDESA (2009): *State of the World’s Indigenous Peoples.*
- 143 One example is agro-ecology, which is gaining momentum as a scientific discipline, sustainable farming approach and social movement. Silici, L. (2014): *Agroecology. What it is and what it has to offer.* IIED.
- 144 ILO was the first multilateral body that adopted a Convention addressing indigenous peoples in 1957. Convention No. 169 on Indigenous and Tribal Peoples from 1989 recognizes indigenous people’s right to define their own priorities for development. The principles of consultation and participation constitute the cornerstone of the Convention.
- 145 IFAD’s Policy on Engagement with Indigenous Peoples was adopted in 2009. IFAD has established the Indigenous Peoples’ Forum, a process of institutionalized consultation and dialogue with indigenous peoples. IFAD is also managing the Indigenous Peoples Assistance Facility, which finances development initiatives by indigenous peoples.
- 146 One of the most advanced national laws is the Indigenous Peoples’ Rights Act of 1997 in the Philippines. <http://www.iwgia.org/regions/asia/philippines>
- 147 UN General Assembly resolution (A/RES/66/142). While efforts to safeguard indigenous peoples’ land rights have been made through mapping, demarcation, and titling of their territories, especially in Latin America, indigenous communities are still far from having real control over their land. UNDESA (2009): *Op cit.*
- 148 Free, prior and informed consent is the right of local communities and indigenous peoples’ communities to give or withhold their consent to proposed investment and development programmes that may affect their rights to lands, territories and resources. The Declaration on the Rights of Indigenous Peoples requires states to consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them. For a practical guide, see IFAD (2015): *How to do note on seeking free, prior and informed consent in IFAD investment projects.*
- 149 Ramos, A.R., Osório, R.G. and Pimenta, J. (2009): *Op cit.*
- 150 An example is the Continental Network of Indigenous Women of the Americas. *Ibid.*
- 151 See for example the experience of the Indigenous Intercultural University in Latin America, funded by GIZ: <https://www.giz.de/en/worldwide/22779.html>
- 152 States made the following commitment: “We support the empowerment and capacity-building of indigenous youth, including their full and effective participation in decision-making processes in matters that affect them. We commit ourselves to developing, in consultation with indigenous peoples, policies, programmes and resources, where relevant, that target the well-being of indigenous youth, in particular in the areas of health, education, employment and the transmission of traditional knowledge, languages and practices, and to taking measures to promote awareness and understanding of their rights.” <http://www.wcip2014.org/wp-content/uploads/2014/09/N1453491-WCIP-FINAL-DOCUMENT-EN.pdf>
- 153 They are less effective, however, against covariate shocks such as drought, which affect all households in a community (Bernier and Meinzen-Dick 2014).
- 154 Meinzen-Dick et al. (2002) note that, as an activity, collective action may or may not happen through collective organizations. Collective action may also form around informal social groups or even spontaneously in response to critical events. However, most collective action occurs within the context of organizations or networks of organizations.
- 155 Including membership-based organizations, social movements, non-governmental organizations, trusts, traditional institutions, village councils, mediation committees for conflict resolution, women’s groups, community-based enterprises for generating income activities and many others.
- 156 Social movements are an important form of collective action. Even though many failed to achieve their objectives, historically they have been a major force to

- make agricultural and rural development more inclusive, by giving many more rights to former slaves. A well-known recent example is the Movimento dos Trabalhadores Rurais Sem Terra, the landless labour movement in Brazil.
- 157 The chapter on rural finance examines these mechanisms in detail, noting that systems for inventory credit and warehouse receipts are generally more important to large farmers.
- 158 Through self-organized arrangements, rural communities in south-western Nigeria provided rural facilities at the cost of N26,204,000.00 (US\$1,546,071.7, 98.3 per cent) of the total figure thus constituting the prime mover for rural facilities development, while local governments contributed N450,000.00 (US\$20,452, 1.7 per cent) to the same facilities (Akinola 2007).
- 159 An impact evaluation of 17 World Bank community-driven development programmes in South and East Asia, Africa, Latin America and Central Asia found that nine projects reported on income poverty impacts, and that seven of these had statistically significant positive impacts on household living standards and welfare. At the household level, most of the programmes invested in public goods – such as roads, bridges, schools and health centres – that benefited the broader poor and non-poor community. However, these elements of the programmes were generally found to benefit more poor than non-poor households and individuals (Wong 2012).
- 160 La Reunión Especializada de Agricultura Familiar (REAF) del MERCOSUR is a forum of family farmers, rural organizations and institutions in the MERCOSUR region of Latin America, operating since 2004 with the aim of creating a framework for regional public policies for family farming. Recognized as one of the most dynamic areas of the regional integration process, it has become a forum for discussion and development of policies, solidarity and participatory integration, aiming to help rural people to overcome asymmetries from the political dialogue between representative governments and civil society (REAF-MERCOSUR 2015).

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