Contribution of agricultural growth to reduction of poverty, hunger and malnutrition

The role of agricultural growth in economic growth, and poverty and hunger reduction

Key message
Agricultural growth is particularly effective in reducing hunger and malnutrition. Most of the extreme poor depend on agriculture and related activities for a significant part of their livelihoods. Agricultural growth involving smallholders, especially women, will be most effective in reducing extreme poverty and hunger when it increases returns to labour and generates employment for the poor.

The importance of agriculture in national economies varies widely, but relatively predictably—the relative importance of agriculture declines as GDP per capita increases and the economy undergoes a structural transformation. In some of the world’s poorest countries, agriculture accounts for more than 30 percent of economic activity, and in the least-developed countries as a group, it accounts for 27 percent of GDP (2009 figures). By contrast, in OECD economies, agriculture accounts for less than 1.5 percent of overall economic output. Thus, the role of agriculture in driving overall economic growth will vary from country to country, and it is generally more important in poorer countries.

Growth in agriculture over the past few decades has largely been driven by growth in labour productivity and, perhaps surprisingly, labour productivity in agriculture has on average been growing faster than labour productivity outside agriculture since the 1960s. This rapid growth in labour productivity has been driven by labour movements out of agriculture, in response to both “industrial pull” and “agricultural push” dynamics. In addition, annual growth of total factor productivity (TFP) in agriculture has been up to 1.5 percentage points higher than in non-agriculture, countering the notion of agriculture as a backward sector where investments and policies are automatically less effective in generating growth than other sectors.

Overall, the role of agricultural growth in reducing poverty is likely to be greater than its role in driving economic growth. This is likely to be the case because the share of the labour force that works in the agriculture sector is much larger than the share of economic output that comes from agriculture. For the least-developed countries, the share of the total economically active population in agriculture was 66 percent in 2009, more than double the share of agriculture in GDP. The implication is that the people who work in agriculture tend to have lower incomes, which is consistent with the fact that poverty is concentrated in rural areas. Because so many of the poor work in agriculture, agricultural growth is more likely to involve and benefit the poor than is non-agricultural growth.

A recent detailed analysis of data on cross-country growth experience has shown that, provided income inequality is not excessive, agricultural growth reduces poverty among the poorest of the poor. In resource-poor low-income countries (excluding sub-Saharan Africa), a given rate of GDP growth due to agricultural growth reduces poverty five times more than does an identical dose of GDP growth due to non-agricultural growth. In sub-Saharan Africa, agricultural growth is 11 times more effective. Thus, raising agricultural production and productivity remains crucial for reducing poverty in a cost-effective manner, especially in low-income countries.

The ability of agriculture to generate overall GDP growth and its comparative advantage in reducing poverty will vary from country to country. In this regard, a typology introduced in the World Development Report 2008 (see Table 1) stresses that in agriculture-based economies (most of them in sub-Saharan Africa), agriculture contributes significantly to economic growth, and, because the poor are concentrated in rural areas, it will also contribute significantly to poverty reduction. The key policy agenda in these countries is to enable agriculture to work as an engine of growth and poverty reduction. In transforming economies (mainly in
Asia, North Africa and the Near East) agriculture contributes less to economic growth, but since poverty remains overwhelmingly rural, agricultural growth, as well as growth in the rural non-farm economy, has strong poverty reduction effects. In urbanized economies (mainly in Eastern Europe and Latin America), where poverty is primarily urban, a more productive agriculture sector can help to cap food price increases and improve the purchasing power of the urban poor, who spend a large portion of their income on food.

In addition to the type of economy the agriculture sector is embedded in, policy for agriculture to contribute to poverty reduction is also a function of the structure of the sector, especially with regards to the distribution of land. For example, in a smallholder-based and labour-intensive agriculture sector, higher land and labour productivity lead to rapid reductions in poverty (e.g., in South-Eastern Asia). China cut poverty extremely rapidly during the 1980s to mid-1990s during a period of strong agricultural growth, as it started from a situation of relatively equal access to farmland and human capital. As inequality increased over time, poverty reduction slowed. In parts of Latin America, however, because of an unequal distribution of land and the dominance of mechanized farming, the relationship between productivity and poverty reduction is much weaker. Yields have grown rapidly but rural poverty has changed little.

In order for agricultural growth to include the poor, it should utilize the assets typically owned by the poor. In all cases, the poor own their own labour, and in some cases this is all they own. Thus, growth that generates employment, increases wages and upgrades the quality of jobs (see Box 2), especially for unskilled labour, is of crucial importance for reducing poverty and increasing access to adequate food in terms of both quantity and quality. Poor access to food can cause low labour productivity, which in turn hampers economic growth, especially in agrarian-based contexts.

According to the ILO’s definition, “decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.”

Rural labour markets are highly informal, with a prevalence of casual work arrangements and information asymmetries, as well as gender and age-based inequalities. Rural working conditions are often poor, access to social protection is limited, and labour legislation is often not enforced; rural workers are the least organized and least protected by legislative frameworks.

Policies and programmes should aim not only at more but also at better employment in the farm and non-farm sector. For instance, integrated production and pest management (IPPM) helps reduce the overall use of pesticides and selection of less hazardous products when pesticide use is necessary. Equipped with knowledge of IPPM techniques, agricultural workers can better negotiate clauses requiring the use of IPPM in collective bargaining agreements with employers. Likewise, providing support to formal trade unions (e.g., the General Agricultural Workers Union of Ghana) to facilitate the inclusion of self-employed farmers and agricultural workers, including seasonal workers, can give such workers a stronger voice in social dialogue and bargaining processes. As a final example of improving the condition of employment in the agriculture sector, the Ministry of Agriculture in Thailand is designing a scheme to provide rice farmers with pensions and disability compensation.

**TABLE 1**

<table>
<thead>
<tr>
<th>Role of agriculture in economic growth and poverty reduction, by type of economy</th>
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<tbody>
<tr>
<td>Agriculture-based economies</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Total population (millions)</td>
</tr>
<tr>
<td>Total poor population (millions)</td>
</tr>
<tr>
<td>US$1.08/day</td>
</tr>
<tr>
<td>Agricultural labour force as share of total (%)</td>
</tr>
<tr>
<td>GDP growth (annual, 1993–2005, %)</td>
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<tr>
<td>Agricultural GDP as share of total (%)</td>
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<td>Agricultural GDP growth (annual, 1993–2005, %)</td>
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<tr>
<td>Agriculture’s contribution to GDP growth (1993–2005, %)</td>
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</table>


**BOX 2**

**Promoting decent employment in agriculture and rural areas for achieving food security**

According to the ILO’s definition, “decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.”

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Sources: Please see notes on page 61.
Employment-enhancing growth is widely recognized as a necessary condition for achieving sustainable economic development. Countries that have been successful in reducing poverty in relatively short periods of time went through employment-centred structural transformations, in which industrial and agricultural policies as well as active social policies were used in synergy. Employment-enhancing policies include tackling constraints to entrepreneurship development, improving literacy and education, as well as skills development to increase the employability of the workforce, especially the youth.

In countries with a relatively equal distribution of land, many of the poor also have access to some land, which allows them to benefit from growth that increases its value (e.g. through higher yields). Thus, for example, yield growth and poverty reduction have gone hand in hand in China, where the distribution of land is relatively equal. By contrast, in India, land distribution is more unequal, and yield growth has not sparked as much reduction in poverty and undernourishment. In situations where a large share of production growth occurs on large farms, the poor can still participate in growth if crop production is labour-intensive and serves to increase rural wages – however, the benefits to the poor will still be less than if the poor owned the land. If the growth occurs on large mechanized farms, there will be little scope for participation of the poor.

Smallholders’ contribution to increasing agricultural production and productivity

The global demand for food is expected to increase by 60 percent by 2050. Given climate change, natural resource constraints and competing demands, especially for the production of biofuels, among other factors, this presents a considerable challenge for the agriculture and food systems worldwide. Smallholders will need to play a key role in meeting these requirements, if for no reason other than the sheer magnitude of their production in developing countries.

Historically, smallholders have proved to be key players in meeting food demand. In Asia during the Green Revolution, smallholder farmers adopted new technical innovations, increased productivity, and produced enough food to lower the real prices of staple foods for consumers. The demand for labour in rural areas increased, generating jobs for the rural poor and increasing wages for unskilled workers. This combination of factors helped to improve food security for all. Many of the development success stories of the past 20–40 years were based on smallholder production (e.g. China, Indonesia, and Viet Nam; see Box 3). During this time, smallholders were also typically more efficient than large-scale farmers. Looking ahead, smallholder production is likely to be more efficient for labour-intensive products such as vegetables.

Despite these past successes, smallholders will need to overcome considerable constraints if they are to compete in many modern markets. Within developing countries, changes in the agricultural and food-marketing, processing and retail sectors have resulted in increased private-sector investments, both domestic and foreign, in agro-food industries.

Sales through more sophisticated channels, such as supermarkets, require greater managerial and logistics skills from farmers and an ability to provide continuity of supply and to meet demanding food safety and quality requirements. Agricultural research and extension are becoming increasingly private and globalized, focusing on technologies that are knowledge-intensive and require management skills and effective learning. This could limit small farms’ access to innovative inputs. Small farms face difficulties in accessing credit, as financial institutions are often reluctant to lend due to poor collateral and lack of information on the creditworthiness of the potential borrower. Small women farmers face even greater disadvantages than their male counterparts as they typically have even less access to financial and social capital, market information and productive resources such as land.

Smallholders are capable of meeting these challenges, but they need an appropriate “enabling environment” in order to do so. Provision of better rural infrastructure, such as roads, physical markets, storage facilities and communication services, will reduce transaction costs and enable farmers to reach markets. Interventions to ensure land tenure and property rights security will encourage smallholders to invest in land improvements. Provision of education in rural areas is essential if smallholders are to participate in markets, as small farmers cannot trade in sophisticated chains if they are neither literate nor numerate and/or lack the ability to organize supplies and the confidence to partner with buyers. It is also imperative that policies redress gender and other inequalities regarding access to assets and resources in order to bring long-term benefits to women and their families.
Viet Nam has experienced rapid economic growth overall (5.8 percent per capita per year from 1990 to 2010), and rapid growth in agriculture also. Between 1990 and 2010, agricultural growth averaged 4.0 percent per year, one of the best performances in the world during that period. Total factor productivity growth in agriculture was also quite rapid at 3.1 percent per year from 1991 to 2000 and 2.4 percent per year from 2001 to 2009.1

Most of the production growth derived from increased yields. Yields of rice, the most important crop, increased by 50 percent, but yields of maize, rubber, cashews and cassava all more than doubled. However, area harvested also increased: areas under maize and rubber cultivation more than doubled, that for cashews more than tripled, and the area under coffee cultivation increased by a factor of eight (from about 60,000 hectares in 1990 to more than half a million by 2008). Aquaculture production has also grown extremely rapidly, by about 12 percent per year since 1990.

Because land distribution in Viet Nam is relatively equal compared with most countries, the growth in yields has benefited many small landowners. The growth in area harvested has also increased demand for labour, one of the key assets of the poor. This growth pattern has contributed to rapid reductions in poverty, undernourishment, stunting and underweight (the latter two referring to children under the age of five). Indeed, Viet Nam has already achieved several of the Millennium Development Goals.

Market-oriented agricultural households benefited the most during the mid-1990s, with the poverty rate for these households falling by more than 40 percent in just five years. But subsistence-oriented agricultural households also benefited – their poverty rate fell by 28 percent over five years. For households that were initially subsistence-oriented but strongly increased their participation in markets during the 1990s, the poverty decline was 35 percent. All these household types experienced an increase in non-agricultural income, thus underlining the importance of a dynamic non-farm economy.2


Contribution of agricultural growth to reduction of poverty, hunger and malnutrition

The United Republic of Tanzania’s agriculture sector grew at an annual average rate of 3.8 percent per year between 1990 and 2010, placing it among the top 15 performers worldwide during that period. The prevalence of undernourishment, however, first increased and then stagnated during the past 20 years, and progress in reducing stunting and poverty has been very slow. Thus, rapid agricultural growth in and of itself is not sufficient to improve nutrition.

Production growth in agriculture during the past 20 years was accounted for primarily by increased area harvested, with relatively little deriving from higher yields. Four-fifths of the increased area harvested has come from eight crops: maize, dry beans, groundnuts, rice, bananas, coconuts, sorghum and cassava. But yields for maize, coconuts, sorghum and cassava have declined during the past two decades and those for rice have increased only slightly. The declining yields possibly reflect expansion into marginal lands with lower soil fertility and yield potential. Reflecting the reliance on land expansion, growth of total factor productivity in agriculture, while positive, was not especially noteworthy during this time – it averaged 0.4 percent per year from 1991 to 2000, and 1.0 percent per year from 2001 to 2009.1

A growth pattern based on land expansion raises questions of sustainability. In addition, the extent to which the benefits are captured by the poor depends on the extent to which the additional land brought under cultivation is fertile and is owned by the poor.

There has been some rapid export growth of cotton and tobacco in recent years, both of which are crops grown by smallholders. But these are non-food crops, and their production is concentrated in relatively small parts of the country. A growth strategy focusing on maize, root crops, pulses and oilseeds would be more effective in reducing poverty and undernourishment, because these crops are more widely grown by poor farmers and account for a larger share of poor people’s budgets.2 Increased spending on agricultural research and extension focused on these crops will be needed if such a growth strategy is to be pursued.


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**Agricultural growth in the United Republic of Tanzania**

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**Indicators of agricultural GDP, poverty and malnutrition in the United Republic of Tanzania, 1990–2011**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Constant 2000 US$ (billions)</th>
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<tbody>
<tr>
<td>100</td>
<td>5.0</td>
</tr>
<tr>
<td>90</td>
<td>4.5</td>
</tr>
<tr>
<td>80</td>
<td>4.0</td>
</tr>
<tr>
<td>70</td>
<td>3.5</td>
</tr>
<tr>
<td>60</td>
<td>3.0</td>
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<tr>
<td>50</td>
<td>2.5</td>
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<tr>
<td>40</td>
<td>2.0</td>
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<tr>
<td>30</td>
<td>1.5</td>
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<td>20</td>
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<tr>
<td>10</td>
<td>0.5</td>
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<tr>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Note:** Data on prevalence of stunting, underweight and wasting refer to children under five years of age.

Source of raw data: FAO and World Bank.
Governments can provide further significant support to smallholder development by, for example, ensuring high-quality agricultural research is clearly targeted towards smallholder and consumer needs, where possible in partnership with the private sector. Government extension services will need to focus more on production, but also on marketing and food safety.

A greater focus on integrating smallholders into markets will provide several benefits. Not only will it help meet future food demand; it will also contribute to improving food security and nutrition in rural and urban areas. In addition, it will open up increased opportunities for linkages with the rural non-farm economy, as smallholders are likely to use most of their additional income to purchase locally produced goods and services.

Hunger, agriculture and sustainable development

If the world is to succeed in overcoming hunger and malnutrition and meeting the demand of today's and future generations, fundamental changes in the agricultural and food systems are needed. At the recent Rio+20 Summit, world leaders reconfirmed that “poverty eradication, changing unsustainable and promoting sustainable patterns of consumption and production and protecting and managing the natural resource base of economic and social development are the overarching objectives of and essential requirements for sustainable development.”

Success in achieving these objectives is literally vital for food security and adequate nutrition for all.

This is particularly relevant for the way countries seek to enable their agricultural and food systems to meet the needs of today’s and future generations. Sustainable development and the Rio vision cannot be achieved unless hunger and malnutrition are eradicated. It is essential that national governments and all stakeholders promote the gradual realization of the right to adequate food, establish and protect rights to resources, especially for the most vulnerable; incorporate incentives for sustainable consumption and production into food systems; promote fair and well-functioning agricultural and food markets; reduce risk and increase the resilience of the most vulnerable; and invest public resources in essential public goods, including innovation and infrastructure.

On the consumption side, there is a need to contribute to sustainable use of resources by reducing over-consumption, shifting to nutritious diets with a lower environmental footprint and reducing food losses and waste throughout the food chain. Regarding food and agricultural production, there is great potential for sustainable intensification. Adequate and stable agricultural productivity growth depends critically on the health of agro-ecosystems and their capacity to provide services such as soil fertility, resistance to pests and diseases and overall resilience of the production system. Healthy ecosystems can also provide important benefits beyond the farm, reducing agricultural pollution that has high costs, and contributing to climate change mitigation, biodiversity conservation and watershed protection. Often, farmers, fishermen and forest dwellers lack the capacity and incentives to adopt the practices needed to achieve sustainable and healthy agro-ecosystems.

Thus governments, the private sector and non-governmental organizations are increasingly interested and engaged in building the needed technical, policy and financing frameworks to support more sustainable forms of production. There are a range of possible approaches to incorporating environmental values in agricultural policy-making to explicitly recognize and reduce the costs of agricultural pollution and increase the external environmental benefits the agriculture sector can provide. It is critical to evaluate such approaches in terms of their equity impacts as much as their efficiency, as they involve transfers of costs and benefits amongst groups in society.

Some successes with approaches that combine poverty reduction and environmental sustainability have been achieved and these need to be built upon and expanded.

In view of this vision, the four Rome-based organizations – FAO, IFAD, WFP and Bioversity International – have identified ten key priorities and calls for action, which formed their contribution to the outcome document of the Rio+20 Summit (see Box 5).
Contribution of agricultural growth to reduction of poverty, hunger and malnutrition

• Current development pathways have left 1.4 billion in extreme poverty, 925 million hungry and many more malnourished and food insecure.
• Unsustainable models of development are degrading the natural environment, threatening the ecosystems and biodiversity on which livelihoods and food and nutrition security depend.
• Globally, risks are increasing – erratic weather patterns, natural disasters, price volatility and market risks are all increasing uncertainty for global food and nutrition security.
• An unsustainable agriculture and food system has contributed to these social and environmental failures but agriculture also offers many solutions for sustainable development and a green economy. There cannot be a green economy without sustainable agriculture.
• A profound change of our agriculture and food system is urgently needed to achieve global food security, improve people's lives and manage the environment more sustainably.
• Including and empowering hundreds of millions of smallholder households and landless farmers – many of them women – is critical to this reform.
• Sustainability requires a reform of the overall agriculture and food system, from production to consumption.
• Social protection and safety nets are essential to support resilient livelihoods, protect the most vulnerable and include them in sustainable development pathways.
• Better and more coherent global, national and local policies are needed for sustainable development and to support the reform of agriculture and food systems at scale.
• The Rome-based organizations will work together to advance the objectives and outcomes of Rio + 20 by supporting countries’ efforts to build more sustainable agriculture and food systems.

1 Note that FAO's latest estimate of global undernourishment is now 868 million.

The importance of the rural non-farm economy and its links with agriculture

In spite of its importance, agriculture will not be a way out of poverty for all rural people. On the one hand, some smallholder farmers – particularly those with adequate levels of assets and access to transforming agricultural markets – will be able to develop sustainable, commercialized production systems. These systems will allow them to move up and work their way out of poverty. Acquiring new land that enables them to expand their production and marketed surplus will, in many cases, be part of that process. On the other hand, many poor rural people have extremely limited, or no, access to land and markets; they will not be able to rely on farming alone to exit poverty. In addition, in countries where the supply of land is limited, not all farmers can expand their landholdings. Instead, some will need to seek opportunities in the rural non-farm economy, either through wage employment or self-employment, which can provide them with their main route out of poverty. For youth, many of whom aspire to move beyond agriculture, the rural non-farm economy will be of particular importance.

As an economy grows and GDP per capita increases, the non-farm economy also grows in importance within the rural economy as a whole. In agriculture-based economies, the share of rural income derived from non-agricultural sources may be only 20 to 30 per cent, but in urbanizing economies it can be as high as 60 or 70 per cent (see Figure 17). An analysis of RIGA (Rural Income Generating Activities) data show that a majority of households participate in rural non-farm income generating activities in Asia and Latin America, typically between 50 and 60 percent and in sub-Saharan Africa, between 25 and 50 percent. However, only 20–25 percent of rural households in Asia and Latin America, and 10–20 percent of households in sub-Saharan Africa derive more than three-quarters of their income from the non-farm economy. For a majority of households, then, participation in the non-farm economy is either part-time or seasonal, and it serves to manage risk and diversify income sources. Essentially, most rural households have one foot in farming and the other in the non-farm economy.
Agricultural development has long been recognized as playing an important role in fostering development in the rest of the economy through a series of linkages between it and other sectors. Agriculture also generally plays a predominant role in influencing the size and structure of the rural non-farm economy, by supplying raw materials for agro-processing, providing a market for agricultural inputs and consumer goods and services, releasing labour into other sectors of the economy and supplying — and reducing the price of — food to the non-farm economy.

In regions where agriculture has grown robustly, the rural non-farm economy has also typically enjoyed rapid growth. The literature suggests that each dollar of additional value added in agriculture generates another 30–80 cents in second-round income gains elsewhere in the economy, depending on factors such as population densities and surplus labour availability. The relationship between agriculture and other sectors evolves through different levels of development: at low levels of development it encourages growth elsewhere in the economy; as countries grow, there is a more mutually beneficial relationship; and eventually, agriculture is of little importance as a motor of economic growth. Conversely, slow income growth in agriculture leads to weak consumer demand, limited agricultural input requirements, limited growth in agro-processing and stagnant wages. Under these circumstances, little dynamism can be expected in the non-farm economy, and poor rural households will be pushed towards survival strategies that will include low-return, non-farm activities and migration. All this suggests that, particularly in agriculture-based countries, where there is growth in the agriculture sector there are likely to be opportunities to catalyse the growth of the non-farm economy and create a virtuous cycle of rural growth and employment generation.

In addition to agriculture, however, other factors may influence the shape and development of the rural non-farm economy. These include urbanization and improved transport and communication linkages between rural and urban areas. Migration out of agriculture into the rural non-farm economy and secondary towns is strongly associated with rural poverty reduction. For example, Indian villages close to towns and cities have a better record of reducing poverty than others, and this is common in other countries too. Improved transport and communication linkages between rural and urban areas offer new opportunities for rural households, particularly in transforming and urbanizing economies. In China and South-Eastern Asia, high population densities and low transport costs have led to labour-intensive manufacturing for export markets being subcontracted to rural industries.

**Conclusion: promoting poverty reduction through agricultural growth while preparing rural populations for structural transformation of the rural economy**

Ultimately, the role of agriculture in reducing poverty and undernourishment will depend on the specific context. In many cases, especially in poorer ones, it can serve as an engine of economic growth. As was shown, governments, interacting with all stakeholders, can support and enhance this role in many ways. Strengthening the chances of smallholders to take part in the sustainable development of agriculture and rural areas is vital in this regard.

However, as GDP per capita increases, agriculture becomes less important both to the economy overall and to the poor, and non-agricultural growth becomes a more powerful engine of poverty alleviation for people who are poor but not very poor. Thus, growth in the non-agriculture sector is also crucial for food security. For example, it can provide a source of employment, particularly for youth, that facilitates employment transitions from the agriculture sector to higher-productivity jobs in industry and services, whether those higher-productivity jobs are in urban or rural areas. Governments of the countries concerned need to envisage this structural transformation and take early steps, especially through investments in infrastructure, education and training, to ensure that the rural poor are well prepared to participate in the transformation process and enabled to take advantage of emerging income-earning opportunities. Country-owned and inclusive agricultural development strategies, such as the Comprehensive Africa Agricultural Development Programme, should meet the challenge of designing, implementing and evaluating such a coherent policy framework, in order to achieve productivity growth and sustainability, while paying due attention to the role of smallholders and rural poor in the transformation process.