

## PART III

*How can agriculture-for-development agendas best be implemented?*

# chapter 10

## Emerging national agendas for agriculture's three worlds

If agricultural growth has such unique abilities to reduce poverty, then why hasn't it been more consistently realized across developing countries? Poverty plummeted in China, India, Vietnam, and other countries when they went through major spurts of agricultural growth, just as industrial take-offs and rising incomes followed in the wake of major spurts of agricultural growth in Japan and the Republic of Korea. Yet agriculture has been used too little for growth and food security in today's agriculture-based countries, with high social costs. Its full abilities to reduce rural poverty have also been used too little in the transforming and urbanized developing countries, which have large populations of rural poor.

Chapters 4 through 8 suggest some of the reasons for the underuse of agriculture for development, including (1) incomplete and uneven reforms of the international trade regime (particularly in member countries of the Organisation for Economic Co-operation and Development [OECD]); (2) reduced but continuing policy biases against agriculture in many developing countries; (3) underinvestment and poor investment of public resources in agriculture and donors turning their backs on agriculture too early; (4) incomplete institutional development (especially for smallholders) following descaling of the state in agriculture; (5) lags in the release and adoption of new waves of technological innovations; and (6) the depletion of natural resources and rising climate change, undermining productivity gains. Each cause has remedies elaborated in those chapters.

But lessons from the past may not always apply to the future, especially in a context marked by major new opportunities. And new challenges may invalidate old models. In addition, agriculture-for-development

agendas need to be context specific, reflecting both the broad country type and local conditions. This chapter recaps some of these opportunities and challenges and proposes an agriculture-for-development approach for agriculture's three worlds. Implementation aspects of these agendas are addressed in chapter 11.

### **New opportunities and challenges**

#### *New opportunities*

Reforms in macroeconomic policies, trade regimes, and marketing policies in many of the poorest countries in the 1990s have led to better incentives for farmers to invest, more active private traders and agroprocessors, and higher returns to public and private investment in agriculture and rural areas (chapter 4). The number of armed conflicts has declined, and many countries have adopted more democratic and decentralized forms of governance. Globalization opens new export opportunities and increases the flows of foreign capital and technology. Powerful value chains are integrating markets on a world scale and a new agriculture of high-value products has emerged, driven by changes in consumer demand. Regional markets are also opening for traditional food crops, as in West Africa and Mercosur (chapter 5).

Institutional innovations offer more efficient—if still incomplete—mechanisms of access to land, financial services, and inputs, and more effective producer organizations (chapter 6). And new biological and information technologies offer the potential for significant productivity gains, if the biosafety protocols and rural information systems necessary for their use can be put in place to exploit them (chapter 7). Better

approaches to natural resources management enhance sustainability and reduce external costs (chapter 8).

Even the poorest countries in Sub-Saharan Africa have had numerous local agricultural successes over the past several decades, with more after 1990 thanks to improvements in the macroeconomic environment.<sup>1</sup> Some governments in Sub-Saharan Africa, as well as China and India, have made agriculture a higher priority, promising to allocate more of their budgets to it. Donors have also stated their intentions to invest more in agriculture, and some are acting on their words. These new commitments are needed now to sustain and scale up the successes.

### **New challenges**

Raising agricultural productivity to make agriculture better perform as an instrument for development will be difficult, particularly in some of the poorest countries where it is needed most. The long downward trend in international commodity prices jeopardizes the profitability of many production systems at current levels of productivity. With the closing of the land frontier across much of the developing world and continuing strong demographic pressures, gains in land productivity—and sustainable land management—will become fundamental. Rising energy prices challenge the future of agricultural intensification based on petroleum derivatives such as nitrogen fertilizer. In addition, the delivery of new waves of technological innovations may be delayed by underinvestment in research and development and lack of safeguards to guide the adoption of transgenics.

Changing climate and growing water scarcity will put a premium on efficient water use and resilient farming systems. Climate change will be most severe in some of the poorest countries that are least prepared to adapt. In these countries, water management is least developed and science least funded to generate new adaptive technologies.

Any future agricultural growth not only has to be doubly green (productive and environmentally friendly), it also has to enlist smallholders, especially women. This poses formidable challenges, with rising economies

of scale in linking to value chains, particularly supermarkets and high-value export markets. Agricultural growth has to provide good jobs for the landless and marginal farmers, but many innovations are labor saving and jobs remain seasonal and unskilled. It has to open investment opportunities in the rural non-farm economy through a better investment climate, but it requires new skills for the rural poor to access them. And there is no illusion that improved policies, institutions, and investments in agriculture can reduce poverty by themselves. Comprehensive multisectoral approaches are required to coordinate the contributions of agriculture with investments in other sectors, raising complex issues of investment priorities, political tradeoffs in budgetary processes, and intersectoral coordination of implementation (chapter 11).

Addressing the political economy of agriculture-for-development agendas will continue to be difficult. A first political economy challenge is to give voice to pro-farming coalitions in the agriculture-based countries that can mobilize public support for smallholder-based agricultural growth. A second political economy challenge is to avoid the subsidy and protection traps in addressing rural-urban income disparities and poverty in the transforming and urbanized countries, by investing more in public goods and safety nets. New private actors can add voice and political support to improve agricultural incentives.

### **The proposed approach**

By applying lessons from the past and appreciating the new opportunities and new challenges, an agriculture-for-development approach emerges with several general features. It relies on such preconditions as sound macroeconomic fundamentals and sociopolitical stability. It is comprehensive in mobilizing many actors in the world of agriculture—smallholders and their organizations, agribusinesses, private entrepreneurs in value chains, the state with new roles and functions, and civil society—and in balancing multiple policy objectives (box 10.1). It is differentiated across country types and needs to be environmentally sustainable and feasible to implement.

**Preconditions.** Political and macroeconomic stability is necessary for agricultural growth, and without stability, few other parts of an agricultural agenda can be implemented—a premise increasingly realized in agriculture-based countries after the mid-1990s.

**Comprehensive.** Strategies should reflect four objectives in a “policy diamond” that set priorities in the agriculture-for-development agenda (box 10.1). The first is establishing efficient markets and value chains.

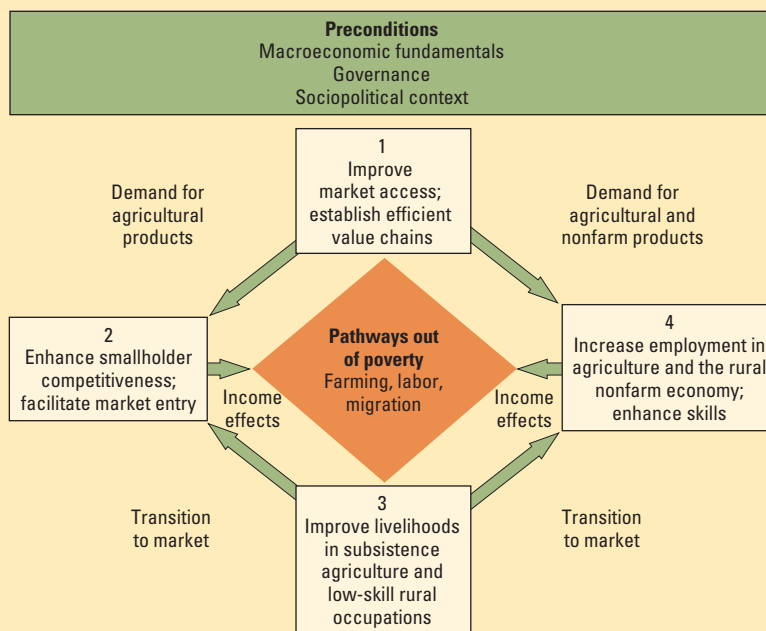
The second is accelerating smallholder entry to agricultural markets and raising smallholder innovativeness and competitiveness. The third is improving livelihoods and food security in subsistence agriculture and low-skilled rural occupations. The fourth is increasing employment and investment opportunities in the rural economy while enhancing skills to allow the rural poor to seize these opportunities or to successfully migrate. Together they drive the three pathways out of poverty—farming, rural employment, and migration.

**BOX 10.1** Four policy objectives of the agriculture-for-development agenda form a policy diamond

1. *Improve market access and establish efficient value chains.* Value chains link demand in agricultural markets to smallholder producers and create jobs along the links and in agriculture. Policy interventions to facilitate value-chain development include improving the overall investment climate and forming strategic public-private partnerships.
2. *Enhance smallholder competitiveness and facilitate market entry.* Smallholders can be competitive and a source of innovation with sufficient asset endowments and in favorable contexts that allow them to market a surplus. Policy interventions to enhance their competitiveness and profitability include trade reforms for greater market access, improved infrastructure, better technology, adequate financial services and inputs, and effective producer organizations to gain access to services, markets, and policy making.

Including a transition from subsistence to market requires increasing the access to assets for smallholder households, particularly to land, entrepreneurial skills, and social capital. It also requires infrastructure to open up regions with agricultural potential but poor market access, and mechanisms to manage risk.

3. *Improve livelihoods in subsistence agriculture and low-skilled rural occupations.* Livelihoods of subsistence farmers can be improved in four ways. First is by increasing land productivity (for higher yields in small plots) and labor productivity (to raise farm labor incomes and free labor for off-farm employment). Second is increasing the resilience of farming systems to reduce risk and food insecurity, especially through better natural resource management. Third is improving the nutritional value of foods produced for home consumption. Fourth is diversifying income in agricultural labor markets and



Source: WDR 2008 team.

the rural nonfarm economy to access cash income and reduce vulnerability. Improving the livelihoods of subsistence smallholders and unskilled laborers often also requires food aid, cash transfers, and pensions for the aged. These improvements require massive investments in human capital for the next generation to avoid intergenerational transfers of poverty associated with dismally low education levels in rural areas.

4. *Increase employment opportunities in rural labor markets and enhance skills.* On the supply side of the labor market, new skills are important to gain access to the more

remunerative sources of employment. On the demand side, investment and employment opportunities for skilled labor can be enhanced in the rural nonfarm sector through a better investment climate and territorial development—and in agriculture through employment in technically demanding tasks, particularly in high-value activities. Skilled labor also has a greater likelihood of being pulled into successful migration. Preparing people to migrate out of agriculture is the flipside of the economy’s structural transformation as agriculture grows.

**Differentiated.** Agriculture-for-development agendas differ for the agriculture-based, transforming, and urbanized economies. In agriculture-based countries, the overall goal is accelerating growth, reducing poverty, and providing food security. In transforming countries, it is reducing rural-urban income disparities and extreme rural poverty. In urbanized countries, it is linking smallholders to the new domestic food markets—supermarkets in particular—and creating remunerative jobs. Structural conditions also differ for each country type

**Sustainable.** With development and environmental protection inextricably linked, agenda design and implementation need to ensure environmental sustainability. Production incentives, institutions, and technologies need to be aligned to better natural resource management and enhance the provision of environmental services.

**Feasible.** Policies and programs will not be implemented or have significant impacts if they are not politically feasible, if administrative capacity to implement is weak, and if financial resources are inadequate.

Although the three worlds of agriculture provide a broad typology of countries, they also hide considerable diversity among the countries in each world. The agriculture-for-development agendas therefore must be adjusted to be country specific.

### **Agriculture-based countries—accelerating growth, poverty reduction, and food security**

Sub-Saharan African countries account for 89 percent of the rural population in agriculture-based countries, so they are the focus in this subsection. Aided by improved macroeconomic and sectoral policies and higher commodity prices, real agricultural GDP growth in Sub-Saharan Africa has accelerated from 2.3 percent per year in the 1980s, to 3.3 percent in the 1990s, and to 3.8 percent per year between 2000 and 2005. Rural poverty has started to decline in 10 of 13 countries analyzed over the 1990–2005

period (see table 2 in the Selected World Development Indicators at the back of the book). Faster growth and sustained poverty reduction in many countries are now achievable but will require commitment and resources.

Agriculture is critical to household food security in Sub-Saharan Africa, mainly through poverty reduction. But food markets poorly serve millions of smallholders, especially in remote areas with weak infrastructure, so these areas must rely on their own production for food security. Many countries face foreign exchange shortages and high transport costs that limit the scope for imports to meet their food needs (see focus C). Food production is central to food security in these countries.

The overall goal for agriculture-based countries of Sub-Saharan Africa is to secure sustained agricultural growth, reduce poverty, and improve food security. This goal is reflected in the Comprehensive Africa Agricultural Development Program (CAADP) (box 10.2) of the New Partnership for Africa's Development (NEPAD). The emerging agenda to achieve the overall goal, as articulated below, can provide a useful basis for the country assessments proposed under CAADP.

### **Structural features of agriculture-based countries**

Specific structural features of agriculture-based countries must be considered in designing the agenda to achieve the overall growth, poverty reduction, and food security goals. However, the diversity across Sub-Saharan African countries and across regions within countries is huge in terms of size, agricultural potential, transport links, reliance on natural resources, and state capacity.

**Diverse local conditions.** The path to productivity growth in Sub-Saharan Africa will differ considerably from that of Asia (chapter 2). Diverse agroecologies produce a wide range of farming systems. Eight crops—maize, rice, wheat, millet, sorghum, cassava, yams, and bananas/plantains—are major food staples in Africa, compared

### BOX 10.2 *Comprehensive Africa Agricultural Development Program*

The CAADP developed by the African Union through its NEPAD initiative aims to help African countries reach a higher path of economic growth through agricultural-led development that eliminates hunger, reduces poverty and food insecurity, and enables expansion of exports. CAADP provides a common framework (rather than a set of supranational programs) reflected in the key principles and targets defined and set by the Africa Heads of State and Governments, in order to (i) guide country strategies and investment programs, (ii) allow regional peer learning and review, and (iii) facilitate greater alignment and harmonization of development efforts.

The main principles and targets that define the CAADP framework are the following:

- agriculture-led growth as a main strategy to achieve the Millennium Development Goal of poverty reduction
  - a 6-percent average annual agricultural growth rate at the national level
  - an allocation of 10 percent of national budgets to the agricultural sector (compared with the current 4 percent)
  - use of regional complementarities and cooperation to boost growth
  - policy efficiency, dialogue, review, and accountability—principles shared by all NEPAD programs
  - partnerships and alliances to include farmers, agribusiness, and civil society communities
- implementation by individual countries, coordination by regional economic communities, and facilitation by the NEPAD secretariat
- Consistent with the NEPAD principles of ownership and accountability, the CAADP process at the country level is initiated on a demand-driven basis, through consultation with regional economic communities and their member countries. It is a three-part process:
- A country assessment of progress and performance toward CAADP targets and principles is completed. The assessment includes identifying the gaps in alignment of policies, strategies, and investments, including development assistance, to the growth and spending targets.
  - A country CAADP compact is established that includes needed actions and commitments by national governments, the private sector, the farming community, and development partners active in the country to close the gaps identified in the country assessment. The compact guides country policy and investment responses to meet the 6-percent agricultural growth targets, the planning of development assistance to support country efforts, and the public-private partnerships as well as business-to-business alliances to raise and sustain the necessary investments in the agribusiness and farming sectors.
- Policy dialogue and review arrangements are set up to monitor commitments and progress, including institutional arrangements for coordination and review, and mechanisms and capacities to facilitate the transition to evidence-based and outcome-oriented policy planning and implementation.

The shared CAADP framework around common principles and targets can help stimulate and broaden performance benchmarking, mutual learning, and harmonization of country development efforts.

Currently, two of the main regional economic communities—the Common Market for Eastern and Southern Africa (COMESA) and the Economic Community of West African States (ECOWAS), which together cover about 40 African countries—have taken strong leadership and ownership of the agenda and are now working with their member states on accelerating its implementation. About a dozen countries in the two regions are preparing for country roundtable discussion following the three-part process described above. The process is expected to be completed in the two regions by the end of 2008.

Source: NEPAD secretariat 2005, 2006.

with just two staples in Asia during its green revolution—rice and wheat.<sup>2</sup> Moreover, livestock are important in most farming systems. Heterogeneity complicates the scientific task of discovery of new technologies, but also offers scope for a wide range of innovations.

Sub-Saharan agriculture depends overwhelmingly on the timing and quantity of rain. Only 4 percent of the arable land is irrigated, less than a fourth that of India at the dawn of its green revolution in the early 1960s. Dependence on rain not only increases heterogeneity of farming systems, but also increases the vulnerability to weather shocks and limits the ability to exploit known yield-enhancing technologies. Although present farming systems are largely rain fed, the continent has significant potential for storage of water and better water management.

**Small and landlocked countries.** The majority of the agriculture-based countries in Sub-Saharan Africa are small, making it difficult for them to achieve scale economies in research, training, and policy design. Small countries imply small markets, unless regional markets are better integrated. Nearly 40 percent of Africa's population lives in landlocked countries, in contrast to only 12 percent in other parts of the developing world.<sup>3</sup> Landlocked countries face transport costs that, on average, are 50 percent higher than in the typical coastal country.<sup>4</sup> Transport costs accounted for about one-third of the farmgate price of fertilizers in Malawi, Zambia, and Nigeria (chapter 6). High transport costs also make many staples imperfectly tradable, increasing price fluctuations and related risks to farmers, marketing agents, and consumers.

**Conflict and postconflict.** More than half the world's conflicts in 1999 occurred in Sub-Saharan Africa.<sup>5</sup> While the number of conflicts has declined in recent years, the negative impacts on growth and poverty are still significant.<sup>6</sup> Many of the countries in conflict have a rich agricultural resource base, and reduced conflict offers scope for rapid growth. For example, in Mozambique in the 10 years following its civil war, per capita income increased 70 percent, compared with 4 percent in the previous decade, and agricultural value added increased 60 percent.<sup>7</sup>

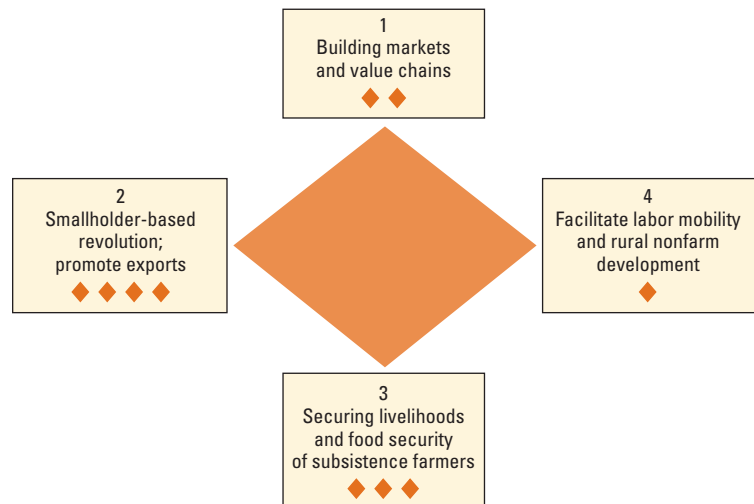
**Low population density.** Vast distances and low population densities in many countries in Sub-Saharan Africa make trade, infrastructure, and service provision costly. These factors retard agricultural development directly by increasing transportation costs, inhibiting technology adoption, raising the costs of agricultural and social services, and slowing the emergence of competitive product, factor, and credit markets.<sup>8</sup> Conversely, areas of low population density with good agricultural potential represent untapped reserves for continued expansion of area, highlighting priority for good land policy and investment in infrastructure.

**Human resources.** The human capital base of African universities and the agricultural profession, more generally, is aging as a result of the decline in support for training over the past 20 years. The HIV/AIDS epidemic is further weakening capacity of professional staff and farmers (see focus H). In contrast, major accomplishments in rural primary education are ensuring a future generation of literate and numerate African smallholders and nonfarm entrepreneurs.

### **An agenda for agriculture-based countries**

Harnessing agriculture's potential contribution to African development will require success in two priority areas: improving smallholder competitiveness in high- and medium-potential areas, where returns to investment are highest; and selecting investments in agricultural technologies and

**Figure 10.1 Policy diamond for agriculture-based countries**



Source: WDR 2008 team.

Note: The number of diamonds indicates the relative priority for policy attention, assigning 10 points across objectives.

natural resource management to improve livelihoods, food security, and environmental resilience in remote and risky environments (figure 10.1). A balanced approach of transfers and investments for productivity growth is needed to achieve both national and household food security. Prerequisites to success are macroeconomic stability and peace. A continued effort will be needed to consolidate, deepen, and sustain the macroeconomic and sector policy reforms. The objectives are as follows:

- Improve access to markets and develop modern market chains.
- Achieve a large-scale and sustainable smallholder-based productivity revolution for African agriculture, with emphasis on helping subsistence farmers enter the market and fostering sustainable resource management.
- Achieve food security and improve livelihoods for those who remain as subsistence farmers, including improving the resilience of farming systems to climate change.
- Capitalize on agricultural growth to develop the rural nonfarm sector.

**Building markets and value chains.** Given the spatial diversity of African agriculture, the commodity focus of faster growth will vary substantially by agroecological zone

and ease of access to markets. The strategy needs to balance food staples, traditional bulk exports, and higher-value products, including livestock, with different groups of smallholders likely participating in each. Growth must derive fundamentally from enhanced capacity of farmers to understand where their best opportunities lie, rather than through centralized prescriptions or standardized solutions. Staple crops dominate current production, and they will continue to do so in the near future to meet growing demand. Nontraditional exports, even if they grow quickly, will have only a small impact on aggregate agricultural growth and employment because their share in the agricultural economy is still modest.<sup>9</sup> Both nontraditional and traditional exports are important, as are regional export markets for food staples and livestock. In all cases, the efficiency of value chains can be improved substantially.

Agricultural growth will be secured and sustained only if markets work better, and this can be achieved through innovative public-private partnerships to develop market chains that exploit new market opportunities (chapters 5, 6, and 7). Progress in reforming product markets in Africa was significant in the 1990s, and continuing progress is needed to build on those gains, particularly in facilitating regional trade. In many countries, better functioning input markets are needed at least as much as expanding product markets to increase agricultural productivity (chapter 6). Strengthening markets requires “hard” (physical) investments in infrastructure, with particular attention to roads and communications, and “soft” (institutional) investments for regulation, risk management, extension, market information, and performing producer organizations.

Markets will not work without addressing the massive infrastructure deficit. Rural roads to link farmers to towns are the first priority, particularly to facilitate market entry of smallholders in areas of good agricultural potential. Regional market integration also demands coordinated infrastructural development across countries and effective trader associations that can circulate information about markets and combat corruption in transport and customs.

Various risks—unpredictable public policies, high transaction costs, and vagaries of weather—increase price volatility in thin markets. Better market information and marketing extension programs can mitigate these risks, and additional tools, such as hedging instruments and options, are being piloted for organized smallholders in a few countries. Many countries subject to frequent climatic shocks manage public grain reserves to reduce price instability—with very mixed success. Safeguards are needed to ensure that the operations of food reserve agencies do not destabilize markets—including arm’s length “central bank” type autonomy, strict rule-based market operations, and contracting operations to the private sector. But the high risk of price volatility remains for both farmers and consumers in many agriculture-based countries. Effective safety nets are fundamental until incomes rise or market performance improves.

*A smallholder-based productivity revolution in agriculture.* Large gaps between current yields and what can be economically achieved with better support services, especially in high-potential areas (chapter 2), provide optimism that the ambitious growth targets can be met. Accelerating adoption requires improved incentives, investments in agricultural research and extension systems, access to financial services, “market smart” subsidies to stimulate input markets, and better mechanisms for risk management (chapters 6 and 7).

Both the technologies and design of institutional support services will require decentralized approaches to address the heterogeneity of rainfed agricultural systems. The need to adapt technologies and services to local conditions and to build several support services simultaneously implies a different approach from the one applied during the green revolution in South Asia. In Uganda, decentralized farmer-driven extension with a strong market orientation is improving adoption rates. The need for decentralization extends beyond agricultural services, however, as more vibrant rural areas must be served by more competent and better financed local governments with greater participation of civil society organizations.

Higher productivity is not possible without urgent attention to better soil and water management. Sub-Saharan Africa must replace the soil nutrients it has mined for decades. African farmers apply less than 10 kilograms of fertilizer per hectare, compared with more than 100 kilograms in South Asia. Programs to develop efficient fertilizer markets, and agroforestry systems to replenish soil fertility through legumes, need to be scaled up (chapters 6, 7 and 8). Liberalization of fertilizer markets has resulted in notable expansion of fertilizer use by smallholders in Kenya, and agroforestry in Zambia has improved soil conservation and yields.

Past investments in irrigation in Sub-Saharan Africa used technologies that were expensive and hard to maintain and that depended heavily on management by the public sector. Today, new approaches offer better prospects. Lower-cost small-scale irrigation and cost-effective larger schemes are already expanding the irrigated area, and more can be expected in the future (chapter 8). Examples include the institutional reforms for large-scale irrigation management in Mali, which significantly increased incomes of rice and vegetable farmers, and Nigeria's fadama schemes, based on small-scale technologies.<sup>10</sup> Effective water management in rainfed systems can also be achieved and needs greater emphasis.

The stagnation of investment in agricultural research and advisory services must be reversed to produce better and more widely adapted technologies (chapter 7). Recent examples of technology generation, including the cassava varieties in East Africa resistant to mosaic virus, drought-tolerant maize in southern Africa, and New Rice for Africa (NERICA) have significant payoffs. More investment in research must be coupled with continuing reforms of agricultural research and extension systems, replacement of the cohort of agricultural scientists now retiring, and stronger partnerships with producer organizations and the private sector. International and regional research efforts, such as through the CGIAR and the Forum for Agricultural Research in Africa, are also becoming more important. Competitive funding for inno-

vation along the value chain is one way to ensure that technology is closely linked to market demands and services.

**Expanding agricultural exports.** Food staples will form the basis of a smallholder revolution in most cases, but Sub-Saharan Africa has considerable potential to expand exports to international markets. Both OECD and African governments have to do more to promote agricultural export growth. Trade barriers in industrial countries continue to impose high costs on African farmers for key export crops such as cotton (chapter 4) and processed foods. African countries continue to tax agricultural exports—and where export markets have been liberalized, incomes generally improved (for example, cotton in Zambia and coffee in Uganda). These liberalized markets require a new role for government, particularly facilitating access to technology to improve productivity and ensuring fair and efficient operations in the marketing system.

Regional markets offer excellent prospects for growth. Cross-border trade barriers need to be reduced so that African producers and consumers can benefit from participating in larger markets. Consider Tradenet, an association of grain traders in West Africa that uses innovative information technologies to share price information and facilitate cross-border trade among its members (chapter 5).

High-value, labor-intensive horticultural and livestock products for external, domestic, and regional markets offer strong growth opportunities. But the marketing and coordination problems for these more perishable and quality-sensitive products have to be overcome. Smallholder participation in this growth will depend on collective action, as was the case for premium coffee for export in Rwanda and dairy for local markets in Kenya. In other instances, such as green bean exports from Senegal, medium-scale farms may be better placed to capture economies of scale in marketing, and the labor market is the main vehicle through which productivity gains are translated into rural poverty reduction. Yet, insufficient attention has been given to the performance of rural labor markets.

*Securing the livelihood and food security of subsistence farmers.* Not all smallholders will be able to farm their way out of poverty. For those with limited access to resources and market opportunities, improving productivity in subsistence agriculture can allow them to secure their food consumption and health and eventually move into market-oriented farming or other, more remunerative jobs. In the interim, their greatest needs are for yield-stabilizing technologies, such as disease-resistant varieties, that require few purchased inputs (chapter 7); resilient farming systems, based on practices such as water harvesting, to reduce their risks; and better access to small livestock and off-farm employment.

Sustainable land and water management is important to improve productivity and reduce production risks. Small-scale technologies (treadle pumps) and better soil and water management techniques (water harvesting, agroforestry, and tied ridges) are being extensively adopted in some areas. New ways to manage risks also show some promise. Weather-based index insurance can reduce risks and cover loans to finance new technologies—now being explored in Malawi. Ensuring competition and cost-cutting technical and institutional change in the food marketing system can also ensure lower and more stable food prices, which are especially important for subsistence households, many of which are net food buyers.

*Beyond agriculture through labor mobility and rural nonfarm development.* Greater geographic labor mobility and improvements in skills of younger generations are central to reducing rural poverty. Because of HIV/AIDS and malaria, better health care and education must be an integral part of a broader set of safety nets that protect the assets of the poor and near-poor from drought, disease, and the death of a family member (chapter 9). The Food for Education programs in the Sahel, which offer incentives for families to keep their children in school during droughts, are examples.<sup>11</sup>

Successful agricultural growth spills over to the nonfarm economy, with increased demand for products of rural nonfarm industries, especially agricultural

processing and value-adding activities. Rural investment climates that are sufficiently attractive to draw in capital from remittances and locally generated savings magnify these spillovers and create much needed employment.

In addition to policy and institutional reforms, the above agenda requires significantly higher levels of investment. Public spending on agriculture in agriculture-based countries is currently less than half that in transforming and urbanized countries as a share of agricultural GDP (chapter 1), and less than half the NEPAD target of 10 percent of national budgets. While efficiency gains can be made in current spending, higher levels of spending are needed, including from donors. In addition, much of the investment needs will have to come from rural savings and private sector investment, with the investment climate an important determining factor.

### **Transforming countries— reducing rural-urban income gaps and rural poverty**

Transforming countries by far make up the largest portion of the agricultural world, with a rural population of 2.2 billion people and massive rural poverty (about 600 million rural people below the \$1-a-day poverty line, half the world total). This world comprises 98 percent of the rural population in South Asia, 96 percent in East Asia and the Pacific, and 92 percent in the Middle East and North Africa. An overwhelming 81 percent of the poor in these countries live in rural areas.

Transforming countries have been the fastest growing, with gross domestic product (GDP) growth exceeding 6 percent a year since 1990, and with China, India, and Vietnam recently growing at more than 8 percent. Growth has, however, been led by the manufacturing and service sectors. Agricultural growth slowed to 2.9 percent a year in 1993–2005, following the green revolution-induced growth in the 1970s and 1980s of 3.3 percent. Agriculture accounted for only 7 percent of total GDP growth in 1993–2005.

Slower growth in the agriculture sector, a rapidly growing nonagricultural sector, and

labor markets strongly segmented by labor skills have widened rural-urban income gaps, adding political pressure to invest in agriculture and rural development.

Rapid growth of urban incomes and demand for high-value products provides the major driver for faster agricultural growth and poverty reduction in these countries, although sustainable productivity growth in food staples requires continued attention. Markets for higher-value products are growing rapidly—6 percent a year for horticulture in India, for example. Many of these markets have substantial potential for further expansion. Per capita consumption of vegetables is still only 33 kilograms per year in India, compared with 66 in China and 76 in Japan. Livestock products and aquaculture also will continue to grow rapidly. Countries in this group could do much more to tap expanding global markets, capitalizing on the winning combination of technological sophistication and cheap labor. The Middle East and North

Africa has a natural geographic advantage in these markets, and agricultural exports have grown at 4.4 percent a year since 1993.

The overall goal of agriculture for development in the transforming countries is to reduce massive rural poverty and narrow rural-urban income disparities.

### *Structural features of transforming countries*

Specific structural features must be considered in designing the agriculture-for-development agenda for these countries, which also display wide diversity in country and region-specific features (box 10.3).

**Demographic pressures and declining farm sizes.** In Asia, the average farm size is already quite small—in Bangladesh, China, and delta areas of Vietnam, the average farm size is a mere 0.4–0.5 hectares (chapter 3). In South Asia, this decline will continue because the rural population is growing at 1.5 percent a year and is not expected

#### **BOX 10.3** *Middle East and North Africa—agriculture for jobs and as a safety net*

The Middle East and North Africa (MENA) exemplifies how agriculture remains a major employer, still disproportionately so relative to its share in the economy. Between 1993 and 2003, while agriculture's share of GDP remained at 14 percent, its share of employment fell from 34 percent to 28 percent. In absolute terms, however, the agricultural labor force continued to grow at 1.2 percent per year.

A growing rural population means declining per capita land availability. In some countries, the scope for improving land productivity is limited, so most increases in per capita farm income will have to come from labor leaving agriculture. Tunisia's land productivity is only 40 percent lower than Spain's, while its land-labor ratio is 70 percent lower.

Agriculture is the employer of last resort for those with the least human capital and mobility: the aged, the less educated, and women. In Tunisia, in 1995, the average farmer was 53 years old, and 88 percent had not gone beyond primary education. In the Arab Republic of Egypt, males are most likely to farm when employment in other sectors is hardest to find, that is, during young adulthood (ages 15 to 24) and after age 55.

Agricultural employment is also a livelihood for households affected by conflict. The

first Gulf War reduced Iraq's oil output by 95 percent and its nonoil output by 72 percent, whereas agricultural output fell by only 18 percent. According to data from Bir Zeit University, the percentage of the West Bank and Gaza population engaged in part-time farming rose from 16.8 percent to 32.6 percent at the onset of the second intifada.

Agriculture's safety-net function attracts high levels of state support, but this tends to be directed at protection and subsidies instead of productivity growth and new sources of income. Of 12 MENA countries,<sup>12</sup> 11 provide agriculture with trade protection, 11 with domestic price support, 9 with subsidized credit, and 9 with energy subsidies. These policies distort cropping choices and benefit big landowners the most. In Egypt, for example, only 9.7 percent of water subsidies reach the poorest quarter of households.

Agriculture uses 80 percent of MENA's scarce water at a time of concern about water's availability for cities and industry. Much is used to irrigate cereals, for which the return per cubic meter is a tenth of that for higher-value crops such as vegetables. Of Egypt's 3.4 million irrigated hectares, 1.9 million are in wheat and rice. Energy subsidies, price supports, and trade protection all encourage uneconomical water use.

Closeness to the European Union (EU) and Gulf markets creates opportunities for high-value fruit and vegetable exports. Gazan peppers sell for NIS 2.0 a kilo in Gaza but would fetch NIS 5.5 a kilo from wholesalers exporting to the EU. Meanwhile, prices declined at home for lack of integration into international markets: tomatoes' real price fell 29 percent over 1993–2003 across the region.<sup>13</sup>

The challenge facing governments is to support the dual role of agriculture as a source of jobs and as a safety net by the following:

- Putting in place a new generation of rural income support programs that target the vulnerable
- Supporting quality-oriented supply chains to penetrate high-value markets, underpinned by private marketing and public rural infrastructure
- Removing market distortions that discourage high-value cropping and induce unproductive water use
- Giving rural youth access to the skills to earn decent livelihoods outside farming

Sources: Assad, El-Hamidi, and Ahmed 2000; FAO 2004a, FAO 2006a, FAO 2007a; Mirza 2004; Shetty 2006; World Bank 2006b, World Bank 2006w, World Bank 2005h.

to peak until at least 2020.<sup>14</sup> Because small-scale farming is labor intensive, a critical question is whether densely populated Asian countries can efficiently produce cereals and other food staples on farms of that size, especially if rural wages rise.

Population growth and declining farm size puts pressure on rural employment. India has 80 million marginal farmers with low asset positions, who turn to off-farm work for survival.<sup>15</sup> In addition, millions of landless rural households depend on agricultural wage employment—82 million in India alone. Remunerative employment for a burgeoning rural population is one of the major challenges of the time, especially in South Asia and the Middle East and North Africa—where rural nonfarm employment (and unskilled work more generally) is growing slowly.

**Water scarcity.** Fresh water supplies are already fully used in many countries, and escalating demands for industrial, urban, and environmental uses will reduce the water available to agriculture. Water scarcity is particularly acute and projected to worsen with climate change and rising demand in the Middle East, North Africa, and large parts of India and China (chapters 2 and 8). High reliance on groundwater irrigation in many countries has led to overpumping, falling groundwater tables in aquifers with low recharge, and deteriorating groundwater quality.

**Lagging areas.** Some rural areas have prospered with overall economic growth, but others have stagnated with high levels of poverty. Lagging areas are found in the interior of China, several states in eastern and central India, the upland areas of Vietnam, and drier areas of North Africa. The causes are varied—poor agricultural potential, low investment in roads and irrigation, poor governance, and social marginalization (chapter 2). But some of these areas have good potential for agricultural growth and could be future breadbaskets (as in eastern India). The challenge is to overcome the political economy bottlenecks in lifting the constraints to growth in these areas.

### *Political economy of agricultural policies.*

The political pressure of farmers to reduce the rural-urban income gap through protection and subsidies is increasing (chapter 4). Because of the large number of poor people, protecting food prices to raise the incomes of medium and larger farmers may have high costs for poor consumers, including most small farmers, who are net food buyers. Recent evidence from Indonesia illustrates this tradeoff—an import ban on rice to prevent declines in producer prices was the main cause of the increase in poverty headcount from 16 percent in 2005 to 18 percent in 2006.<sup>16</sup> Another form of support to farm incomes is through subsidies on inputs such as water and fertilizer. These are not only regressive in distributing benefits to larger farmers, but subsidies also distort fiscal priorities away from core public goods, such as rural infrastructure, especially with limited fiscal space in these countries, and cause environmental problems (chapter 4). Political capture by larger farmers is entrenched in countries with well-established democracies, such as India, and in countries with less democratic forms of government, such as in several countries in the Middle East and North Africa (box 10.3).

### *An agenda for transforming countries*

The policy objectives for the transforming countries are as follows (figure 10.2):

- Promote high-value activities to diversify smallholder farming away from land-intensive staples as urban incomes rise and diets change.
- Extend the green revolution in food staples to areas bypassed by technological progress and with large numbers of poor, including many of the extreme poor, and provide safety nets. Promote livestock activities among the landless and smallholders as a substitute for land.
- Provide infrastructure to support the diversification of agriculture and of rural economies.
- Promote the rural nonfarm economy to confront the rural employment problem, and invest massively in skills for people

to migrate to the rapidly growing sectors of the economy.

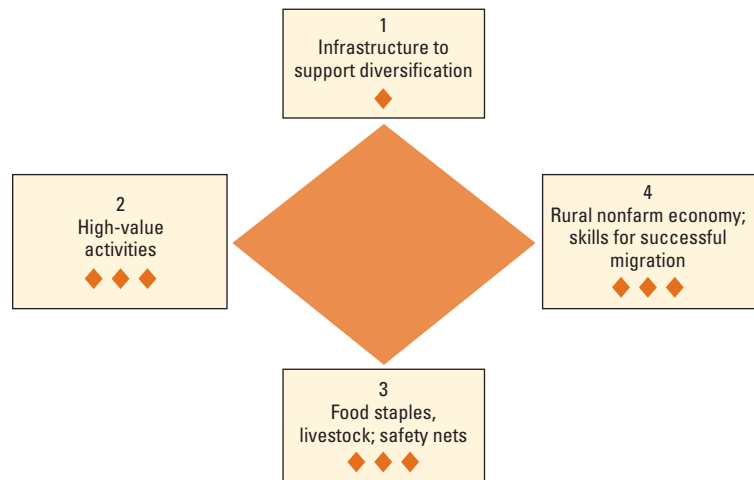
*From green revolution to the new agriculture.* Although the green revolution was largely state led and state supported, the unfolding revolution in high-value agriculture is led by the private sector, with the state facilitating. For highly perishable products, infrastructure, credit, and institutions link farmers with processors and retail chains (the farm-firm-fork linkages). Scale economies in processing and marketing exist with fragmenting and shrinking farm size, so institutional innovations such as contract farming can reduce the transaction costs and risks of smallholders. Linking smallholders to processors and retailers can also create access to more financial capital through banks—and provide technology, extension, and buy-back arrangements, while monitoring food safety.

That this can be done in smallholder economies is clearly demonstrated by the rising exports of high-value agriculture from transforming countries (chapter 2). But the way benefits are distributed along the value chain depends on the bargaining power of different players. Smallholders can bargain better as a group than as individuals. So a high priority is to facilitate collective action through producer organizations to reach scale in marketing and bargain for better prices (chapter 6).

Although diversification to high-value products offers the best prospects for agricultural growth, this will depend on continued productivity growth in food staples to release resources. In many areas, markets for food staples are not sufficiently developed, so that the production of food staples for personal consumption is a risk-reducing strategy. Very large countries (China and India) necessarily also produce most of their consumption.

Both the high-value revolution and the extension of the green revolution to less-favored areas require better water management, in light of mounting scarcity and deteriorating quality. Integrated approaches can manage the competition for water among multiple users, especially in water-stressed

**Figure 10.2 Policy diamond for transforming countries**



Source: WDR 2008 team.

Note: The number of diamonds indicates the relative priority for policy attention, assigning 10 points across objectives.

areas (chapter 8). Reforming institutions in irrigation, removing policy distortions such as water and electricity subsidies, and providing a supportive environment for trade and macroeconomic policies are all important steps in improving water productivity and meeting competing demands. Broad-based reforms require strong champions and equitable allocations of water rights to overcome the political obstacles. As scarcity worsens, water markets will come into play, with support needed for their emergence and eventual regulation. Jordan, for example, has formalized the informal market by registering, licensing, and metering all wells, assigning individual quotas.

*Making intensive systems more sustainable.* Reducing the environmental footprint of intensive agricultural systems, especially agrochemical and animal waste pollution, is a priority for both improved environmental and human health, and also to reduce the drag on productivity growth from land and water degradation. More sustainable agricultural practices will require a judicious combination of getting incentives right (input and output prices), application of improved management technologies such as integrated pest and nutrient management, and better regulation.

*Extending the green revolution to lagging areas.* With the shift to the new agriculture and the declining farm size in high-potential areas, extending the green revolution to less-favored regions can secure the livelihoods of subsistence farmers and bring them to market. Productivity growth in these regions rests on major investments in irrigation and water control, in agricultural research, and in new approaches to extension, supported by reforms in pricing and marketing for grains.

With appropriate support and organization, even very small-scale and near-landless farmers can improve their livelihoods, especially in livestock. India's success in milk production has been built on the collective action of marginal farmers through the Indian Dairy Cooperatives Network (chapter 5). Smallholders, particularly women, have been major participants in recent successes with aquaculture and small-scale poultry in Bangladesh.

*Rural development off the farm, linked to towns.* With excess population in agriculture, a lag in urban job creation, and urban congestion, a priority is to promote rural nonfarm employment in secondary towns and to strengthen rural-urban linkages. Labor mobility was, for instance, inhibited by lack of efficient land markets in China or and by restrictions on land rental in India. The land market is key to consolidating small farms for efficient operation and shifting labor to nonfarm activities and migration. Regional and territorial development of agricultural clusters—with the processing and packaging of high-value products—is another opportunity. In densely populated countries, urban-based industries will drive the rural nonfarm sector. So, investments in infrastructure and skills and improvements in the investment climate are the policy priorities.

*Skills for successful migration.* Moving out of agriculture, whether to the rural nonfarm sector or by migrating to urban areas, depends on more and better quality education. Massive investments in human capital are needed to prepare the next generation to leave agriculture. Programs that

provide conditional transfers, such as cash grants in Bangladesh conditioned on school attendance, can increase the demand for education, but they will fail unless the quality of rural education is greatly improved (see focus G).

*Safety nets for those left behind.* Transforming countries have the largest concentration of the world's poor, so direct support through well-designed and well-governed employment schemes in rural areas—including rural infrastructure, watersheds, and desiltation of canals and ponds—can reduce poverty, improve the rural investment climate, and restore degraded natural resources. India has launched one of the biggest programs—the National Rural Employment Scheme—creating basic infrastructure in rural areas to raise farm and nonfarm productivity. It protects farm families from sudden crop failures caused by droughts or other shocks. Significant monitoring and accountability mechanisms and rigorous evaluations have to ensure effective and equitable resource use.

### Urbanized countries—linking smallholders to the new food markets and providing good jobs

Agriculture accounts for a small share of national growth in urbanized countries—5 percent from 1993 to 2005. But several agricultural subsectors with strong comparative advantages have sustained spectacular growth—for example, soybeans and biofuels in Brazil, fruits and salmon in Chile, and vegetables in Guatemala—and the agribusiness sector is large. Agriculture remains the dominant source of growth and poverty reduction for many subnational areas. Eighty-eight percent of Latin America's and Europe and Central Asia's rural populations are in urbanized countries.

Domestic food markets are being transformed, in particular through the supermarket revolution. As commercial agriculture expands, driven by economies of scale associated with mechanization and marketing, the rural labor market in agriculture and the rural nonfarm economy

become more important for linking productivity gains in agriculture to rural poverty reduction.

The overall goal in using agriculture for development is to promote the inclusion of smallholders in the new food markets and to provide good jobs in agriculture and the rural nonfarm economy.

### **Structural features of urbanized countries**

**The supermarket revolution.** In Latin America and the Caribbean and in Europe and Central Asia, rising incomes and rapid urbanization<sup>17</sup> have increased the demand for higher-value products, with domestic food markets growing even faster than in developed countries.<sup>18</sup> Domestic consumption is the main source of demand for agriculture in Latin America, absorbing three-quarters of output, with 60 percent of domestic retail sales channeled through supermarkets. An important issue in using agriculture for development is to strive to maintain the link between modern food markets and the national food supply, in a context of increasingly globalized food chains.

Traditional exports remain important, accounting for 80 percent of the region's agricultural exports,<sup>19</sup> offering new markets as they become increasingly decommoditized to adjust to different consumer tastes. High-value exports have been expanding rapidly, with smallholders moving into niche markets, particularly for organic coffee and Fair Trade, dominated in world trade by Latin America.<sup>20</sup> But for smallholders, despite huge challenges in staying competitive, the new domestic food market offers the most dynamic market opportunities.

**Stubbornly high rural poverty and inequality.** The paradox in Latin America is that while agriculture has been doing relatively well as a productive sector with a sustained 2.5 percent annual growth in agricultural value added over the past 40 years, rural people have not fared well. Rural poverty remains stuck at 58 million<sup>21</sup> (at a \$2-a-day poverty line), and the rural poverty rate in 2002 was 46 percent, a share largely unchanged over the last 10 years.

Moreover, the urban poverty rate of 28 percent has been rising, reinforced by intense rural-urban migration that absorbed 15 percent of the rural population over the 1993–2002 period.

Rural populations are also changing. Migration is selective, leaving behind a population characterized by feminization, loss of the more educated, aging, and a rising share of indigenous people. The agricultural labor market and the rural nonfarm economy account for 70 percent of rural incomes and employ 55 percent of the active rural labor force. Even so, many smallholders remain partially engaged in subsistence farming until they are absorbed in the agricultural market economy as producers, become employed in agriculture or the rural nonfarm economy, or migrate.<sup>22</sup> They are held back in subsistence farming by the lack of assets to enter new product markets and the lack of skills to enter better jobs or migrate to towns.

Added to this are two structural features: large less-favored regions with many of the extreme rural poor dependent on agriculture (the Meso-American and Andean Plateaus and the Brazilian Northeast) and stubbornly high inequality that severely restricts access to assets and participation in policy making for the rural poor.

**Weak governance.** Modern markets are largely in place in Latin America, but a major limiting factor to the agriculture-for-development agenda, as in other regions, is the weakness of governance of agriculture and rural areas.<sup>23</sup> Agriculture-for-development agendas are becoming multisectoral and multidimensional, but public organizations remain segmented. Ministries of agriculture lack the capacity to promote a broad vision and strategy for a comprehensive agenda, coordinate across service providers, regulate market performance, and redress broad social asymmetries.<sup>24</sup> Decentralization remains incomplete, with local governments lacking capacity and resources and accountability mechanisms hardly in place. Civil society organizations representing the rural poor still exercise little voice, held back from more effective participation by deeply entrenched social inequalities.

**BOX 10.4** *Special features of agriculture in Europe and Central Asia*

Agricultural production and food demand were massively distorted under communist central planning, imposed from the 1920s in the former Soviet Union and since the 1950s in Central and Eastern Europe. The distortions resulted from collective property rights, forced organization of production in large-scale collective and state farms, centrally controlled production, allocation, processing, input provision, and marketing, as well as distorted prices and state-controlled trading and exchange rate systems. Direct subsidies to processing and trading companies kept consumer prices and farm input prices low and producer prices high.

The fall of the Berlin Wall and the disintegration of the Soviet Union dramatically

changed agricultural and food policies in the 1990s. Prices, exchange rates, and trade policies were liberalized, subsidies cut, hard budget constraints introduced, property rights privatized throughout the agrifood sector, and production decisions shifted to companies and households.

The liberalization and privatization of farms and food companies initially caused dramatic declines in production and consumption. But since the mid-1990s, better incentives and reformed institutions have led to recovery and sustained productivity growth. Poverty increased while agriculture value added was falling, but it has since declined remarkably with the recovery of agriculture (see figure below).

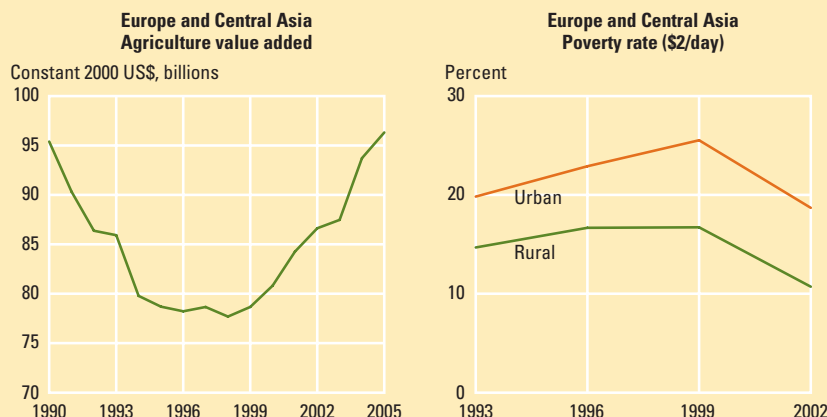
The situation today varies tremendously across the region. Ten Central and Eastern European countries, after dramatic institutional reforms, have been integrated in the Common Agricultural Policy of the European Union. Productivity growth benefited from massive foreign investment in the food sector, with spillovers to large corporate farms and smaller family farms.

In the Caucasus and parts of Central Asia, regions with low incomes and high rural poverty, agriculture has shifted toward smallholder farming on land that households received under the land distribution programs. The better labor incentives on these small farms induced productivity gains. The main constraint on smallholder competitiveness is access to credit and to input and output markets.

In large parts of Kazakhstan, the Russian Federation, and Ukraine large farms still dominate, and in some regions, land concentration has taken extreme forms, with vertically integrated farm holdings controlling vast areas of land (mostly grain) in Kazakhstan and Russia. The aftermath of the Russian financial crisis (which improved the terms of trade), and the growth of government revenues from mineral and oil exports (which increased government transfers to farms and rural areas and cut payment arrears), has been the main engine behind strong growth in output and productivity since 2000. Vertical integration in agriculture, with capital injections from domestic and foreign companies, also helped.

Belarus, Uzbekistan and Turkmenistan, are in the beginning of the process of market reforms. Their main agenda is to build institutions to make smallholder farming competitive.

**Recovery in Eastern European and Central Asian agriculture is accompanied by a sharp drop in rural poverty**



Sources: Ravallion, Chen, and Sangraula 2007; World Bank 2006y.

Source: Swinnen and Rozelle 2006.

Eastern European and Central Asian countries, also importantly urbanized, have several features that distinguish them from Latin America. These distinguishing features follow their history of central planning and incomplete transitions to market economies (box 10.4).

***An agenda for urbanized countries***

After the structural adjustment of the 1980s, Latin American countries have been striving to accelerate growth in competitive subsectors of agriculture, supported by public investment to induce private investment in agriculture (but with significant misinvestment in subsidies). This has been

complemented by social assistance delivered through (often conditional) cash transfers targeted to the chronic poor and to regional pockets of poverty. In Brazil, in the context of a booming agriculture, social security transfers and the rural nonfarm economy were the fastest-growing sources of income for rural households over 1991–2000.<sup>25</sup> With structural adjustment effectively over at the macro level, this approach, based on growth and safety nets, has been costly, creating dissatisfaction in Brazil and across the continent.

Many countries have turned to an alternative approach, seeking to reduce rural poverty by increasing earned incomes in

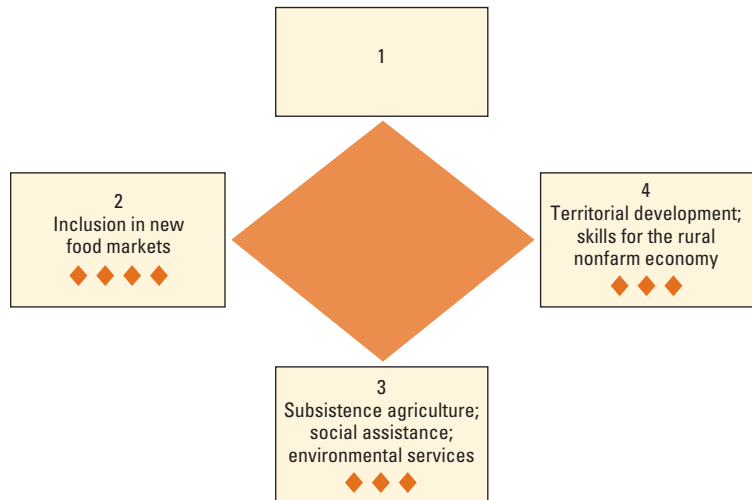
agriculture and the rural nonfarm economy as opposed to social assistance, thus attempting to reconcile growth with poverty reduction, while relying less on social protection. In Ecuador, the Poverty Reduction and Local Rural Development Program (PROLOCAL) is based on increasing the access of the rural poor to assets, improving the context for asset use with an emphasis on territorial development, and providing social protection. In Peru, the *Sierra Exportadora* program also builds on increasing access to assets, supporting rural institutions for competitiveness, and providing social protection.<sup>26</sup>

In this new model, the policy objectives are as follows (figure 10.3):<sup>27</sup>

- Include smallholders in the new food markets, which requires, among other instruments, greater access to land and skills for the new agriculture.
- Improve productivity in subsistence agriculture and provide social assistance, together with payments for environmental services to create incentives for conservation.
- Follow a territorial approach to promote the rural nonfarm economy and enhance skills to give access to the jobs and investment opportunities offered by growth of the rural nonfarm economy.

**Increasing access to assets for the new agriculture.** Increasing the participation of smallholder farmers in dynamic domestic food markets requires paying special attention to deep-rooted inequalities in access to assets and public services, inequalities that challenge their competitiveness.<sup>28</sup> Smallholders still at the margins of markets can take advantage of the new opportunities through greater access to land, research, training, technical assistance, financial services, and farmer organizations. Producer organizations and contract farming are essential for these smallholders to take part in value chains and cater to supermarket demands. Also important are public-private partnerships, with an agribusiness sector active in organizing smallholders as competitive suppliers in these markets.

**Figure 10.3 Policy diamond for urbanized countries**



Source: WDR 2008 team.

Note: The number of diamonds indicates the relative priority for policy attention, assigning 10 points across objectives.

**Improving livelihoods in subsistence agriculture and providing social assistance.**

Subsistence farming can be a holding pattern in the long transition out of low-productivity family farming. Some subsistence farmers can become viable smallholders, diversifying their income to improve their well-being, but the agricultural part of their income (self-employment) in many circumstances has little potential for growth. There are, however, clear social benefits in investing in the agricultural part of their incomes for two reasons: it is critical for their food security and basic nutrition, and it sustains their income in the absence of better employment options. The needed investments include more resilient farming systems and better coverage of nutritional needs based on home production. Improving livelihoods also requires social assistance, especially pensions for those too old to be retrained. Rural noncontributory pension programs have expanded rapidly, helping the younger generation gain earlier access to land and combating the selective migration of the more entrepreneurial out of agriculture.

**Supplying environmental services.** Countries in Latin America and the Caribbean and in Europe and Central Asia have started to set up regulatory mechanisms to protect their environment and introduce payments

for environmental services. Regulation needs to be anchored in greatly improved governance, and payment schemes must be made financially sustainable, accountable to those who buy the services, and expanded over the continent.

*Territorial development to create rural jobs.* The rural nonfarm economy is a source of self-employment and wage employment, but it is highly dual, with high- and low-skill jobs and high- and low-value-adding enterprises. Promoting skills for high-productivity jobs can provide a pathway out of poverty. The Latin American countries are pursuing a distinctly territorial approach, promoting clusters of complementary firms in selected geographic locations. Local agricultural production systems can capitalize on the comparative advantages of a territory's agroecology, proximity to urban centers, or institutional and cultural or historical endowments. Territory-driven development projects go beyond community-driven development to create new economic opportunities based on scale, local synergies, and market access. This territorial approach to rural development is being pursued in Eastern Europe as well, building on rural links to towns and small cities.

Poverty reduction based on earned incomes requires a reassessment of governance mechanisms, institutions, and agents, many of them in disarray. Ministries of agriculture have to be redesigned to correspond to the new functions of the state and the transformation of agriculture in value chains. And civil society has to be engaged as an active participant in governance despite long-standing patterns of social exclusion rooted in deep inequalities.<sup>29</sup> This is a huge agenda (chapter 11). Improving governance for agriculture and rural areas must be a priority, requiring experimentation and learning.

### **Political, administrative, and financial feasibility**

Effective implementation requires assessing the feasibility of the policy and investment instruments that make up the proposed agendas. Feasibility varies significantly by

instrument, but also by country type, particularly the capacity to implement reform. Understanding the likely political, administrative, and financial hurdles to reforms is necessary for successful implementation. Different instruments have different levels of political, administrative, and financial feasibility, providing guidelines in composing agriculture-for-development agendas.

### *Political feasibility*

Price and trade policy reform, land reform, and irrigation, while visible and able to enlist political support, always have gainers and losers. These gainer-loser conflicts make decisions more difficult. Agricultural research has fewer tradeoffs, but the impacts are often less immediate and less visible than other investments. Education and food programs have no or few losers, are highly visible, and usually have strong political support, but they have costs that constrain implementation.

What can be done to improve political feasibility? When there are identifiable gainers and losers from reform, strategies can use research-based evidence for information and debate, identify administratively feasible complementary support programs to help the losers transit to other sources of income, and provide compensations—as in Mexico's PROCAMPO program to make the North American Free Trade Agreement (NAFTA) politically feasible through decoupled cash transfers. When reforms have delayed or less certain consequences, commitment devices for future support are important. Uganda legislated extension and research reforms through a National Agricultural Advisory Services Act and a National Agricultural Research Act, which committed the government to fund and implement them.

### *Administrative capacity*

Capacity to implement is often low—particularly in agriculture-based countries. Many program designs have erroneously assumed much higher capacity to implement than exists. Others have put in place temporary capacity to assist with implementation rather than strengthening existing capacity. The result has been unsustainable

investments that frustrate good agendas. The lesson is to align long-term programs more closely with existing capacity while providing support to strengthen capacity (chapter 11).

### *Financial affordability*

Many proposed instruments are not financially affordable within current budget allocations. Even with greater efficiency in current spending, increasing the government budget allocations to agriculture will often be necessary. Infrastructure programs (irrigation and roads) are the most costly, and the agriculture-based countries require large increases in current budget allocations and innovative public-private partnerships to make these investments. Tanzania is experimenting with providing supplementary funds on a competitive basis to local governments to finance medium-scale irrigation schemes and is focusing national public spending on inducing private investment for irrigation. Food and cash transfer programs are also costly, requiring efficient targeting and credible exit options to make them affordable.

### **Recognizing the policy dilemmas**

Do these agriculture-for-development agendas have a greater likelihood of success than in the past? Lessons from experience, placed in the perspective of momentous changes in the three worlds of agriculture, along with new opportunities and new challenges, offer useful guidance. The likelihood of success in using agriculture for development can be enhanced by formulating agendas that are comprehensive, differentiated, environmentally sustainable, and tailored to political feasibility, administrative capacity, and financial affordability. Such agendas are based on the agents associated with each objective on the policy diamond: (1) the agribusiness sector and value chains, (2) market-oriented smallholders and their organizations, (3) a large mass of subsistence farmers with diversified occupations, and (4) workers in the agricultural labor market and the rural nonfarm economy. In each case, fundamental tradeoffs have to be addressed in defining national

agriculture-for-development agendas, posing difficult policy dilemmas with resolution in the political economy arena.

For the agriculture-based countries, the policy dilemma is the balance between addressing food security directly by focusing on subsistence farming through resilient farming systems and safety nets, such as food aid, or by focusing on the more entrepreneurial actors and favored areas that can secure growth and deliver food security through cheaper food and better employment opportunities. The immediate pressures of poverty and food crises drive public expenditures and donor priorities toward safety nets. But greater political and economic stability and better policy instruments can shift the agendas from transfers to growth. New government and donor commitments to invest in agricultural growth signals a greater emphasis on earned incomes as opposed to transfers. A major increase in foreign assistance and country budget allocations to agriculture can provide the resources needed to escape the food aid trap and move toward growth and sustainable poverty reduction.

For the transforming countries, the policy dilemma is in the choice of instruments to address the rural-urban income disparity problem. Farmers' demands for income assistance and politicians' responses to garner votes have met on clientelistic grounds, turning to subsidies as the preferred instrument, achieving redistributive gains at a high cost in terms of forgone growth, deficient public health and education, and low investment in infrastructure and other public goods. The alternative is to raise rural households' earned incomes in agriculture through diversification and modernization, in the rural nonfarm economy through wage or self-employment, and in preparedness to migrate successfully to urban labor markets. Here, again, recent moves have been away from transfers (modestly) and toward increased productivity in generating incomes (driven in part by the agribusiness sector).

For the urbanized economies, the policy dilemma is between rapid growth in a medium to large farm sector (sometimes

quite large, with 15,000 to 30,000 hectare farms not uncommon, as in Matto Grosso) accompanied by an extensive social safety net to compensate the losers and the excluded, or earned incomes in a smallholder sector that can compete in modern food markets and nontraditional exports. Income diversification in the rural non-farm economy is effective to consolidate the competitiveness of the family farm, as shown by the resilience of family farms in Western and Asian countries. The latter approach to rural well-being requires considerable political will. Institutions must be built to support smallholder competitive-

ness, and programs of access to land must be expanded to combat persistent inequalities. Smallholders must have more voice, challenging the traditional social structure.

What needs to be done is now better understood. Powerful approaches are available to enhance the likelihood of success of agriculture-for-development agendas. There are signs that solutions are tilting away from transfers and more toward earned incomes by poor people, agriculture's main power in development. Good governance—with macroeconomic stability, political support, and administrative capacity—is in all cases key to success.