

# Growth and poverty reduction in agriculture's three worlds

Three out of four poor people in developing countries—883 million people—lived in rural areas in 2002.<sup>1</sup> Most depend on agriculture for their livelihoods, directly or indirectly. So a more dynamic and inclusive agriculture could dramatically reduce rural poverty, helping to meet the Millennium Development Goal on poverty and hunger.

There are many success stories of agriculture as an engine of growth early in the development process and of agriculture as a major force for poverty reduction. Most recently, China's rapid growth in agriculture—thanks to the household responsibility system, the liberalization of markets, and rapid technological change—has been largely responsible for the decline in rural poverty from 53 percent in 1981 to 8 percent in 2001 (see focus A). Agricultural growth was the precursor to the acceleration of industrial growth, very much in the way agricultural revolutions predated the industrial revolutions that spread across the temperate world from England in the mid-18th century to Japan in the late-19th century.<sup>2</sup>

Agriculture has also offered attractive business opportunities, such as high-value products for domestic markets (dairy farming in Kenya, aquaculture in Bangladesh, vegetables for supermarkets in Latin America) and international markets (specialty coffee in Rwanda, horticulture in Chile, Guatemala, and Senegal). There have also been successes in traditional crops with new demands, such as feed-maize exports to China from Laos and sugar cane for bio-fuels in Brazil.

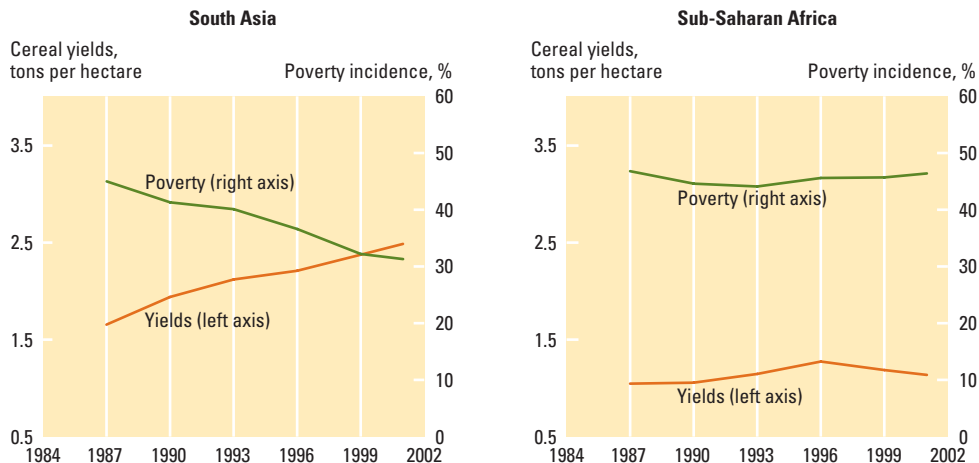
Parallel to these successes are numerous failures in getting agriculture moving. Most striking is the still-unsatisfactory performance of agriculture in Sub-Saharan

Africa, especially when contrasted with the green revolution in South Asia (figure 1.1). In the mid-1980s, cereal yields were comparably low and poverty was comparably high. Fifteen years later in South Asia, yields had increased by more than 50 percent and poverty had declined by 30 percent. In Sub-Saharan Africa, yields and poverty were unchanged. Food security remains challenging for most countries in Africa, given low agricultural growth, rapid population growth, weak foreign exchange earnings, and high transaction costs in linking domestic and international markets.

Important challenges persist for agriculture in other regions as well. Where growth in nonagricultural sectors has accelerated, especially in Asia, the reallocation of labor out of agriculture is lagging, concentrating poverty in rural areas and widening rural-urban income disparities. This becomes a major source of political tensions and insecurity. Where agriculture's share in the economy has shrunk significantly, as in Latin America, connecting poor rural households to agriculture's new dynamic subsectors, either as smallholders or as workers, remains a challenge. And everywhere, agriculture is a major user and a frequent abuser of natural resources. By making better use of water and land and providing such environmental services as managing watersheds, agriculture can make growth more environmentally sustainable.

This chapter takes a macro perspective to show that in many settings it pays to rebalance incentives facing agriculture, manufacturing, and services and to invest better and more in agriculture. To design appropriately differentiated policies across settings, this chapter presents a typology of countries based on agriculture's contribu-

**Figure 1.1 Cereal yields are up and poverty is down in South Asia, but cereal yields and poverty were unchanged in Sub-Saharan Africa**



Sources: Ravallion and Chen 2004; World Bank 2006y.

tion to growth and poverty reduction: agriculture-based, transforming, and urbanized. It reviews past policies and investment patterns and introduces a framework to understand the political economy behind agricultural policymaking.

### The structural transformation

The process of economic development is one of continuous redefinition of the roles of agriculture, manufacturing, and services. Two empirical regularities characterize this structural transformation. First, at low levels of development, the shares of agriculture in gross domestic product (GDP) and in employment are large (up to 50 percent and 85 percent, respectively), but they decline as countries develop (figure 1.2). Second, there is a large and persistent gap between the share of agriculture in GDP and the share of agriculture in the labor force. These two stylized facts suggest an essential but evolving role for agriculture in fostering growth and reducing poverty.

These patterns of structural transformation have been observed historically in most developed countries and are currently taking place in developing countries that experience growth. But there are noteworthy deviations. In most Sub-Saharan countries over the last 40 years, the share of labor in agriculture has declined dramati-

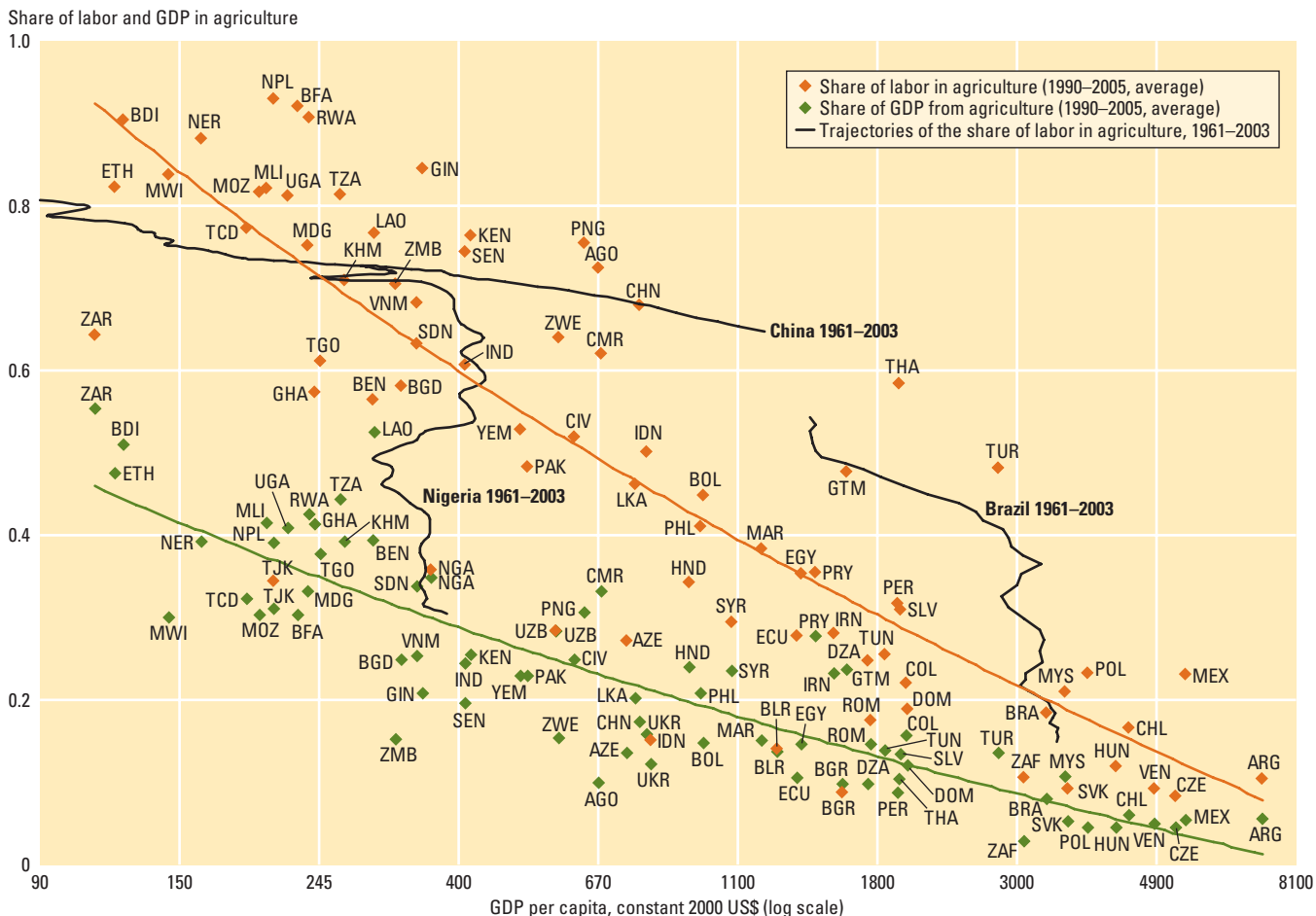
cally despite almost no growth in per capita GDP, as illustrated by Nigeria (figure 1.2). The same is true for Latin America since 1980, as illustrated by Brazil. This is consistent with the observed urbanization of poverty in these two regions. By contrast, the reallocation of labor out of agriculture has been very slow in China, partly because of restrictions on labor mobility, which, given rapid growth outside of agriculture, is consistent with an increase in the rural-urban divide.<sup>3</sup>

### *Agriculture's essential but declining contribution to growth as countries develop*

Many poor countries still display high agricultural shares in GDP and employment (an average of 34 and 64 percent, respectively, in Sub-Saharan Africa).<sup>4</sup> In countries in the \$400-to-\$1,800 GDP per capita range, many of them in Asia, agriculture is on average 20 percent of GDP and 43 percent of the labor force. These ratios decline to 8 percent and 22 percent, respectively, in countries in the \$1,800-to-\$8,100 GDP per capita range, many of them in Eastern Europe and Latin America. Adding the forward and backward links to agriculture (extended agriculture) typically increases the share in the economy by half or more, especially in the middle-income countries.<sup>5</sup>



**Figure 1.2 As countries develop, the shares of GDP and labor in agriculture tend to decline, but with many idiosyncrasies**



Source: WDR 2008 team, based on data from World Bank 2006y.  
 Note: The list of 3-letter codes and the countries they represent can be found on page xviii.

The large share of agriculture in poorer economies suggests that strong growth in agriculture is critical for fostering overall economic growth. As GDP per capita rises, agriculture’s share declines, and so does its contribution to economic growth. This happens while agricultural output simultaneously increases in absolute value, because the nonagricultural sectors are growing faster.

Increasingly, agriculture contributes to shaping the environmental sustainability of the growth process, across the development spectrum. It is a major user of scarce natural resources (85 percent of the developing world’s fresh water withdrawal and 42 percent of its land) and a largely unrecognized provider of environmental services (sequestering carbon, managing watersheds, and reducing deforestation).

### *Agriculture’s power for poverty reduction*

The large and persistent gap between agriculture’s shares in GDP and employment suggests that poverty is concentrated in agriculture and rural areas—and that as nonagricultural growth accelerates, many of the rural poor remain poor.

That the incidence of poverty among agricultural and rural households is persistently much higher is confirmed by the micro evidence from numerous country poverty studies by the World Bank (see focus A). Furthermore, where nonagricultural growth has accelerated, rural-urban income disparities widen. For example, in East Asia, the ratio of rural-to-urban poverty increased from about 2:1 to more than 3.5:1 between 1993 and 2002, despite a sub-

stantial decline in absolute poverty. Even with rapid urbanization, the developing world is expected to remain predominantly rural in most regions until about 2020 (box 1.1), and the majority of the poor are projected to continue to live in rural areas until 2040.<sup>6</sup>

The persistent concentration of (absolute and relative) poverty in rural areas illustrates the difficulty of redistributing income generated outside of agriculture and the deep inertia in people's occupational transformation as economies restructure. Migrating out of agriculture to urban areas is often hampered by lack of information, cost, skill gaps, aging, and family and social ties. Consequently, many people remain in rural areas with expectations for better lives unfulfilled, generating social and political tensions that can jeopardize the growth process. Broad-based growth in the rural economy appears essential for reducing both absolute and relative poverty.

Indeed, from a simple decomposition, 81 percent of the worldwide reduction in rural poverty during the 1993–2002 period can

be ascribed to improved conditions in rural areas; migration accounted for only 19 percent of the reduction.<sup>7</sup> The comparative advantage of agricultural growth in reducing poverty is also supported by econometric studies. Cross-country econometric evidence indicates that GDP growth generated in agriculture has large benefits for the poor and is at least twice as effective in reducing poverty as growth generated by other sectors, controlling for the sector's size (box 1.2). However, as countries get richer, the superiority of growth originating in agriculture in providing benefits for the poor appears to decline.

### The three worlds of agriculture for development

In light of the evolving role of agriculture in fostering growth and reducing poverty, countries are classified in this *Report* as agriculture-based, transforming, or urbanized, based on the share of aggregate growth originating in agriculture and the share of aggregate poverty (\$2.15 a day) in the rural

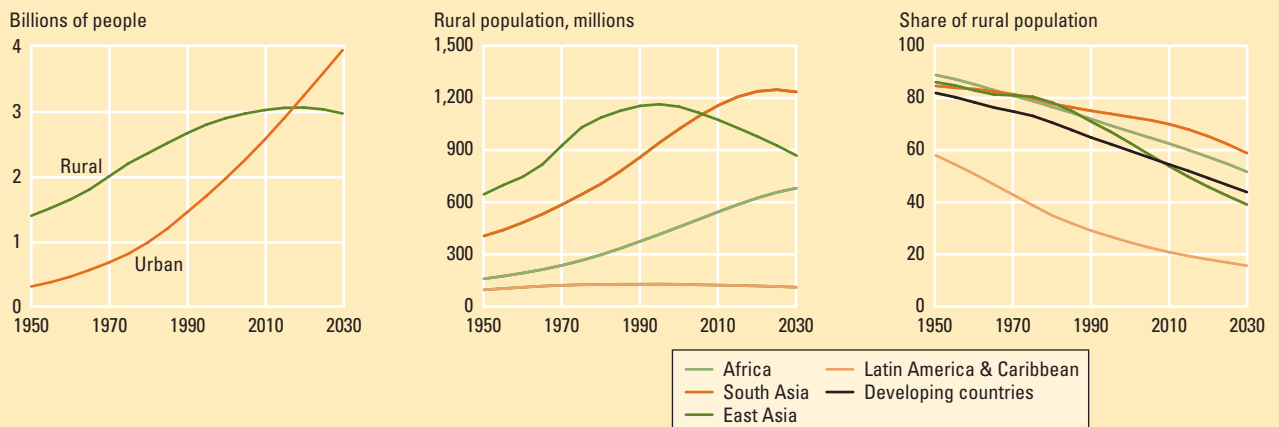
#### BOX 1.1 Rural population dynamics

An estimated 2.5 billion of the 3 billion rural inhabitants are involved in agriculture: 1.5 billion of them living in smallholder households and 800 million of them working in smallholder households. The size of the rural

population is expected to continue to grow until 2020 and decline thereafter, due to slower population growth and rapid urbanization in most countries (figure below). South Asia will begin such a decline only after 2025, and Africa

after 2030 at the earliest. But rural areas of Latin America and East Asia have been losing population since 1995. However, the share of the population living in rural areas is declining on all continents, including Africa.

#### Populations in developing countries will remain predominantly rural until 2020



Source: United Nations 2004.



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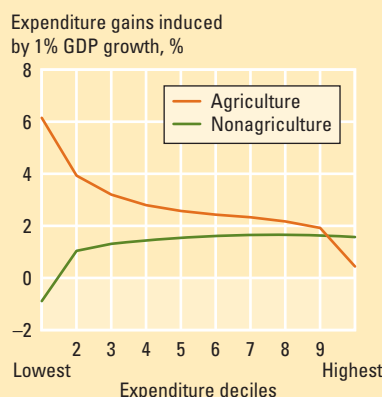
### BOX 1.2 Cross-country evidence on the effect of agricultural growth on poverty reduction

Among 42 developing countries over 1981–2003, 1 percent GDP growth originating in agriculture increased the expenditures of the three poorest deciles at least 2.5 times as much as growth originating in the rest of the economy (figure below).

Similarly, Bravo-Ortega and Lederman (2005) find that an increase in overall GDP coming from agricultural labor productivity is on average 2.9 times more effective in raising the incomes of the poorest quintile in developing countries and 2.5 times more effective for countries in Latin America than an equivalent increase in GDP coming from nonagricultural labor productivity. Focusing on absolute poverty instead, and based on observations from 80 countries during 1980–2001, Christiaensen and Demery (2007) report that the comparative advantage of agriculture declined from being 2.7 times more effective in reducing \$1-a-day poverty incidence in the poorest quarter of countries in their sample to 2 times more effective in the richest quarter of countries. Using cross-country regressions per region and looking at \$2-a-day poverty, Hasan and Quibriam (2004) find larger effects from agricultural growth on pov-

erty reduction in Sub-Saharan Africa and South Asia, but larger poverty-reducing effects of growth originating in other sectors in East Asia and Latin America.

#### Welfare gains from growth originating in agriculture are substantially larger for households in the poorer five expenditure deciles



Source: Ligon and Sadoulet 2007.  
Note: The two curves are significantly different at the 95 percent confidence level for the lowest five expenditure deciles.

sector. Three clusters of structurally different economies emerge, each with distinct challenges for agricultural policy making (figure 1.3 and tables 1.1 and 1.2). In the agriculture-based economies (most of them in Sub-Saharan Africa), agriculture contributes significantly to growth, and the poor are concentrated in rural areas. The key policy challenge is to help agriculture play its role as an engine of growth and poverty reduction.

In transforming economies (mostly in Asia and North Africa and the Middle East), agriculture contributes less to growth, but poverty remains overwhelmingly rural. The rising urban-rural income gap accompanied by unfulfilled expectations creates political tensions.<sup>8</sup> Growth in agriculture and the rural nonfarm economy is needed to reduce rural poverty and narrow the urban-rural divide.

In urbanized economies (mostly in Eastern Europe and Latin America), agriculture

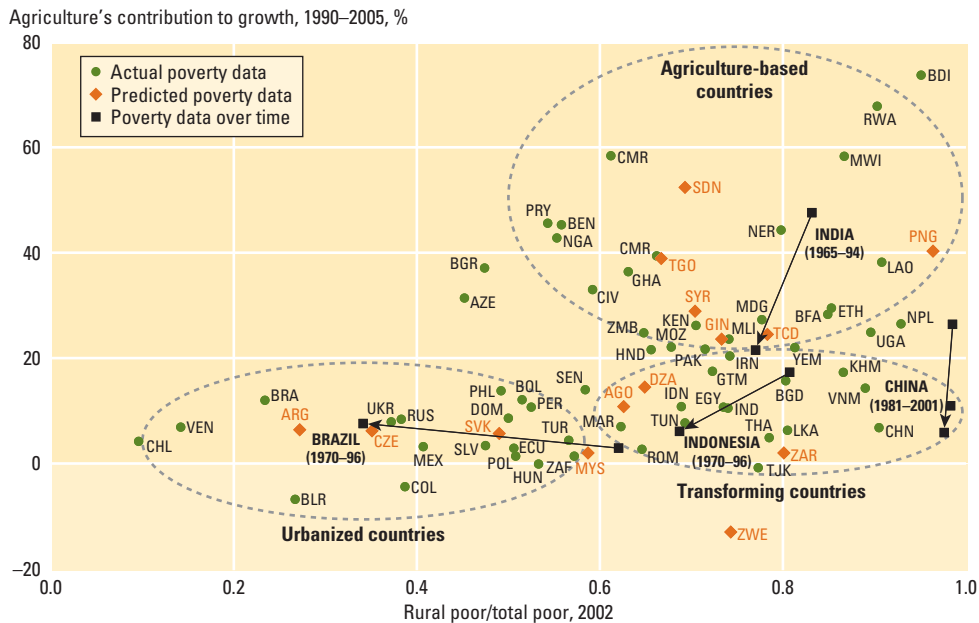
contributes only a little to growth. Poverty is no longer primarily a rural phenomenon, although the \$2.15-a-day poverty incidence is 63 percent higher than in urban areas. Agriculture acts like any other competitive tradable sector, and predominates in some locations. In these economies, agriculture can reduce the remaining rural poverty by including the rural poor as direct producers and by creating good jobs for them.

There is no unique route for a country to move from an agriculture-based to an urbanized and eventually to a high-income country. However, the routes traveled by China (1981–85 to 1996–01), India (1965–70 to 1989–94), Indonesia (1970–76 to 1990–96), and Brazil (1970–75 to 1990–96) are illustrative (figure 1.3). Both China and India moved from the agriculture-based category to the transforming category over 15 to 25 years, but with little change in the rural share in poverty. Indonesia, already in the transforming category in the 1970s, further reduced the share of rural poverty, as did Brazil, a country in the urbanized category.

The three country types capture the major distinguishing features in the role of agriculture for growth and poverty reduction across countries and provide a useful framework to focus the discussion and help formulate broad policy guidance. Even so, substantial variations remain among (and within) the countries in each type (box 1.3).

#### Agriculture-based countries

In the agriculture-based countries, most of them in Sub-Saharan Africa, agriculture accounted for about a third of overall growth over 1993–2005. More than half a billion people live in these countries, 49 percent of them on less than \$1 a day and 68 percent of them in rural areas (tables 1.1 and 1.2). By its mere size, the agricultural sector is critical for development, at least in the medium term. Both the staple crop and the agricultural export sectors play important, but distinct roles in fostering growth and reducing poverty. The staple crop sector is typically the largest subsector and produces mostly for the domestic market. The nonstaple crop sector typically produces

**Figure 1.3 Agriculture-based, transforming, and urbanized countries constitute agriculture's three worlds**

Source: WDR 2008 team.

Note: The contribution of agriculture to growth is defined as the agricultural growth rate times the sector average share over the period divided by the GDP growth rate (computed from World Bank DDP 2006). Rural shares in poverty marked with a green circle are from Ravallion, Chen, and Sangraula (2007), using the \$2.15/day poverty line. Rural shares of poverty marked with an orange diamond are predicted with an estimated regression of the rural share of poverty on rural share of population, agricultural share in GDP, log of GDP per capita in 2000 US\$, and regional dummies. The dynamic paths are taken from Ravallion and Chen (2004) for China; World Bank (2000b) for India; the United Nations' Economic Commission for Latin America and the Caribbean; (<http://www.eclac.org>) for Brazil; and the Central Bureau of Statistics (<http://www.bps.go.id>) for Indonesia, with poverty rates based on their national poverty lines. Arrows show paths for Brazil, China, India, and Indonesia. The list of 3-letter country codes and the countries they represent can be found on page xviii.

**Table 1.1 Demographic and economic characteristics of three country types, 2005**

	Agriculture-based countries	Transforming countries	Urbanized countries
<b>Population</b>			
Total (millions)	615	3,510	965
Rural (millions)	417	2,220	255
Share of rural population (%)	68	63	26
Annual population growth, 1993–2005 (%)	2.5	1.4	1.0
<b>Geographical distribution of rural population (%)</b>			
Sub-Saharan Africa	82.2	13.6	4.2
South Asia	2.2	97.8	0
East Asia and Pacific Islands	0.9	96.1	2.9
Middle East and North Africa	8	92	0
Europe and Central Asia	0	12	88
Latin America and Caribbean	2.2	9.7	88.1
<b>Labor force (in 2004)</b>			
Total (millions)	266	1,780	447
Agricultural (millions)	172	1,020	82
Share of agriculture (%)	65	57	18
<b>Economy</b>			
GDP per capita (2000 US\$)	379	1,068	3,489
Annual GDP growth, 1993–2005 (%)	3.7	6.3	2.6
<b>Agriculture</b>			
Agriculture value added per capita (2000 US\$)	111	142	215
Share of agriculture in GDP (%)	29	13	6
Agriculture's contribution to growth, 1993–2005 (%)	32	7	5
Annual agricultural GDP growth, 1993–2005 (%)	4	2.9	2.2
Annual nonagricultural GDP growth, 1993–2005 (%)	3.5	7	2.7

Sources: Labor force data: FAO 2006a. Other data: World Bank 2006y.

Note: Averages are weighted and based on 74 countries with at least 5 million people, except for agriculture value added, which is based on 71 countries because of missing information. Data are for 2005 unless otherwise noted.



**Table 1.2 Poverty in three country types, 2002**

	Agriculture-based countries	Transforming countries	Urbanized countries
<b>Population (millions)</b>			
Total	494	3,250	888
Rural	335	2,100	251
<b>Poverty (\$2.15 a day)</b>			
Total poverty rate (%)	80	60	26
Number of rural poor (millions)	278	1,530	91
Share of rural poor in total poor (%)	70	79	39
Rural poverty rate (%)	83	73	36
Urban poverty rate (%)	73	35	22
<b>Poverty (\$1.08 a day)</b>			
Total poverty rate (%)	49	22	8
Number of rural poor (millions)	170	583	32
Share of rural poor in total poor (%)	70	82	45
Rural poverty rate (%)	51	28	13
Urban poverty rate (%)	45	11	6

Source: Ravallion, Chen, and Sangraula 2007.

Note: Averages are weighted and based on 60 countries among those of table 1.1 for which poverty is documented in the source. Poverty lines are defined in 1993 purchasing power parity dollars.

for export and is often dominated by traditional commodities, but increasingly it also includes new dynamic subsectors of high-value products such as vegetables, flowers, and fish.

*The nontradable staple crop sector.* Even with globalization, the staple crop sector remains largely nontradable in substantial parts of the agriculture-based countries for two reasons. First, locally grown staples such as cassava, yams, sorghum, millet, and teff, which are not internationally traded (although sometimes regionally traded), often predominate in the local diets. Second, the domestic food economy remains insulated from global markets by high transport and marketing costs, especially in the rural hinterlands<sup>9</sup> and in landlocked countries. In Ethiopia the price of maize can fluctuate from around \$75 per ton (the export parity price) to \$225 per ton (the import parity price) without triggering international trade. This nontradable staple crop sector represents 60 percent of agricultural production in Malawi and 70 percent in Zambia and Kenya.<sup>10</sup>

When the staple crop sector is large and nontradable, gains in staple crop productivity increase the aggregate food supply and reduce food prices. That keeps the nominal wages of unskilled workers as well as the prices of all the inputs that have a large labor content at lower levels, thereby helping

make the nonfood tradable sector competitive.<sup>11</sup> For major staples in Africa, there is evidence of a negative correlation between per capita production and price for maize in Ethiopia and Ghana; sorghum in Burkina Faso, Mali, and Sudan; cassava in Ghana; and (weakly) millet in Burkina Faso, Mali, and Sudan. Only Kenya, with its significant price intervention, does not follow the pattern. However, this transmission mechanism will be sustained only if the gains from total factor productivity rise faster than the decline in food prices so that farmer profitability is maintained. If not, farmers may abandon the technologies that induced the productivity gains in the first place.

The poverty-reducing effects of enhancing production in the farm sector depend on the net marketing position of the poor and the price elasticity of food demand.<sup>12</sup> Poor net-food-buying households benefit from lower food prices, as long as the gain from reduced spending on food exceeds the loss from reduced wage income. Poor net-food-selling producers, by contrast, gain only if productivity grows faster than prices fall. Given that demand for staple crops is usually price inelastic, producers may well lose. Even so, increasing staple crop productivity usually reduces poverty overall, because in addition to the urban poor, more than half of poor rural households are typically net food buyers, a little appreciated fact (chapter 4).

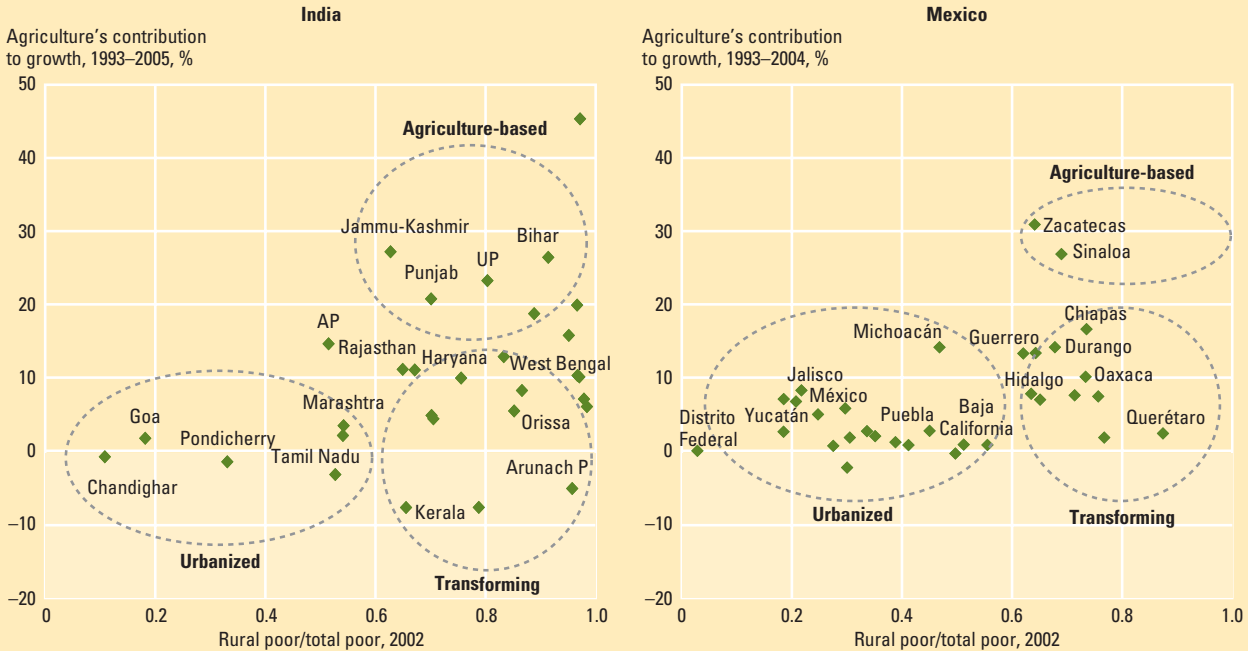
**BOX 1.3 Large countries have regional heterogeneity that replicates the three worlds of agriculture**

In very large countries, individual states may fall into different categories. India, overall a transforming country, also has agriculture-based states such as Uttar Pradesh and Bihar

and a few urbanized states (figure below). Similarly, Mexico, an overall urbanized country, also has some transforming states and two agriculture-based states. In contrast with

this heterogeneity, all states of Brazil qualify as urbanized, and in China all provinces but Hainan are transforming.

**Transforming India has agriculture-based and urbanized states, and urbanized Mexico has transforming and agriculture-based states**



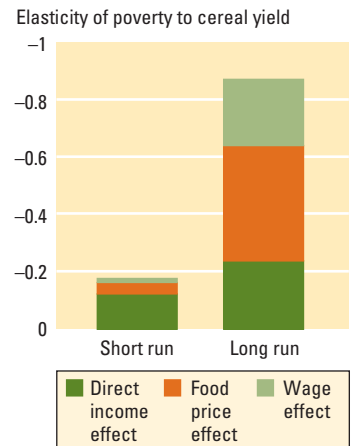
Sources: Central Statistical Organization and Planning Commission for India, Instituto Nacional de Estadística Geografía e Informática (INEGI) for Mexico.

Microevidence from Madagascar is illustrative. Although rice is usually tradable, it proved effectively nontradable in rural areas of Madagascar because of high transport costs. Analysis of commune census data shows that doubling rice yields reduces the ratio of the food insecure in the community by 38 percentage points and shrinks the hungry period by 1.7 months (or one-third). Falling rice prices and rising nominal wages of agricultural laborers boosted real wages, benefiting especially the poorest, who are often net rice buyers supplying labor. Poor net sellers also benefited, as productivity gains exceeded food price declines.<sup>13</sup> Econometric studies of India for 1958–94, where many of the rural poor are landless, report price and wage effects of food crop productivity to be more important in reducing rural poverty in the long run than direct

effects on farm incomes, which dominated in the short run (figure 1.4).

**The tradable agricultural sector.** Globalization and new dynamic producers (for example, coffee in Vietnam) have increased competition in traditional exports. But the recent boom in smallholder cocoa production in Ghana (from 390,000 tons in 2001 to 740,000 tons in 2006)<sup>14</sup> through new plantings, new varieties, and better husbandry following higher world market prices suggests that many African countries are competitive in primary agricultural commodities. Tea in Kenya is another example. And there is good potential to increase yields further. New markets have also opened for traditional exports, such as premium coffees, and for nontraditional high-value agricultural products, such as vegetables

**Figure 1.4 Price and wage effects dominated the long-run elasticity of rural poverty to cereal yields in India, 1958–94**



Source: Datt and Ravallion 1998a. Note: The direct income effect includes that from higher yields and employment.



(from Senegal), fish (from Uganda), and flowers (from Kenya).<sup>15</sup>

The defining macroeconomic contribution of tradable agriculture to aggregate growth is foreign exchange, which allows imports of inputs and capital goods. Countries with mineral resources, such as Zambia, obviously depend less on their agricultural exports. But most agriculture-based economies depend on agriculture for a large share of their foreign exchange, as exemplified by tobacco exports in Malawi.

The poverty-reducing effects of developing tradable agriculture depend on the participation of smallholders and poor households in production. Labor intensive nontraditional exports can also have substantial local poverty-reducing effects by generating employment, as in Kenya and Senegal,<sup>16</sup> despite the tightening food standards and more vertically integrated market chains that tend to favor medium farms (chapter 5).

*Links with sectors outside of agriculture.* In addition to the macroeconomic channels through prices for nontradable agriculture and through foreign exchange for trad-

able agriculture, growth of agriculture can enhance growth in other sectors through consumption and production links. When agricultural incomes are spent on domestically produced nontradable goods and services, it stimulates demand for domestic industry and services. Production links proceed forward by fostering growth in agroprocessing and food marketing and backward through demand for intermediate inputs and services. The availability of resources (entrepreneurship, excess capacity) and a favorable investment climate that allow a supply response from the nonagricultural sector are critical for realizing such links.

Empirical evidence confirms these multiplier effects.<sup>17</sup> The strength of the agricultural multipliers differs depending on a country's economic structure. Small economies with large tradable sectors (for example, Lesotho) have smaller multipliers than large economies with a high share of nontradable agriculture and services (for example, Cameroon, Nigeria, and Tanzania). Most of these linkage effects occur through commerce and services. Hence globalization and inexpensive imports of manufactured goods in rural markets—say, from China—likely have limited effects on the strength of the links. They also enable new agro-based exports to create links.

*Agriculture as an engine for growth early on.* Agriculture is an effective engine for growth for most agriculture-based countries because they need to produce most of their own food, and they are likely to keep a comparative advantage in agriculture at least in the medium term. Consider food production first. In low-income countries, the demand for staple food is driven by rapid population growth and high income elasticity. In Africa, demand for food is expected to reach \$100 billion by 2015, double its level of 2000.<sup>18</sup> With staples mostly nontradable, and frequent shortages of foreign exchange for importing substitute cereals, food production in the agriculture-based countries has to keep up with domestic demand (see focus C).

Now consider exports. Beyond Mauritius and, more recently, apparel from Kenya and Madagascar under preferential trade agree-

#### BOX 1.4 *Agriculture's comparative advantage in Sub-Saharan Africa*

Agriculture's comparative advantage comes from three sources:

First, from factor endowments. Most African and agriculture-based economies are relatively rich in natural resources, but poor in skilled labor, suggesting comparative advantage for unprocessed primary products. In some countries, a combination of natural resources and human capital endowments point to comparative advantage in processed primary commodities, even though other factors may have prevented the development of the agricultural processing sector to date.

Second, from the difference in productivity and costs. These are determined by the business environment, infrastructure (roads, electricity, communications), and institutions (legal, financial, regulatory) that influence the efficiency of operations for firms and industries. The business environment is more important for manufacturing and high-value services because they use these factors more intensively. World Bank Investment Climate surveys

support the contention that indirect costs inherent in a poor business environment are higher on average in Africa than in their competitors in the developing world.

Third, from dynamic economies of scale. The very existence of economies of scale puts late-comers at a disadvantage in competing with countries that have already developed their industrial base. Agriculture-based economies have largely missed the expansion of labor-intensive manufacturing that spurred development in Asia in the 1980s. There is still debate on the likelihood that Africa will emerge as a significant exporter of manufactured goods. But, based on current and emerging comparative advantage, a diverse portfolio of processed and unprocessed primary-based exports (including services such as tourism) will remain the main option for generating foreign exchange in the medium term.

Source: Collier and Venables (Forthcoming); Eifert, Gelb, and Ramachandran 2005; Wood and Mayer 2001.



ments (especially the African Growth and Opportunities Act), manufactured exports have not taken off in Sub-Saharan Africa. African exports are concentrated in unprocessed primary products, in sharp contrast with the manufactured goods exported from the transforming countries of Asia. While some of that difference is related to macro and trade policies, this trade composition largely corresponds to the comparative advantages for most African countries (box 1.4). Therefore, the growth strategy of agriculture-based economies for many years to come has to be anchored in improving agricultural productivity.

**What history shows.** Higher agricultural productivity generating an agricultural surplus, taxed to finance industrial development, and enabling lower food prices underpinned early development in Western Europe, the United States, and Japan, and later in Taiwan, China, and the Republic of Korea.<sup>19</sup> More recently, rapid agricultural productivity growth in China and India has been widely credited with initiating industrialization and inducing rapid reductions in poverty.<sup>20</sup> The critical insight from these successful experiences is that the adverse effects of surplus extraction on agriculture were each time counterbalanced (or predated) by public investment in scientific research for agricultural technologies and in rural infrastructure, including irrigation.

Premature and unduly high extraction through an urban policy bias combined with a lack of public investment in agriculture despite good growth potential are highlighted in the next section as key reasons for sluggish agricultural performance in many agriculture-based countries. Ghana's growth and poverty reduction in the 2000s suggest that robust balanced agricultural growth is still feasible today (see focus A). In countries, or regions within countries, with poor agroecological conditions, agriculture's contributions to growth will be limited. Even so, agriculture is still likely to play an important complementary role in reducing poverty and improving food security (see focus C). Agricultural intensification will also be critical for reversing the degradation of natural resources, especially

### BOX 1.5 *A role for agriculture in Africa's mineral-rich countries*

Agriculture accounts for one-third of the economies of African mineral-rich countries. Between 1985 and 1999, agriculture contributed on average twice as much as industry to their overall growth.<sup>21</sup> Poverty remains widespread, however, despite higher average per capita GDP than in the mineral-poor countries. The contrasting pre-1997 experiences of Indonesia and Nigeria, both large oil-exporting countries, is telling.

Indonesia supported agriculture, indirectly through regular devaluations of the exchange rate that provided incentives to its producers of agricultural tradables, and directly through investments of some windfall oil revenues in rural infrastruc-

ture, irrigation, agricultural credit, and fertilizer subsidies. Nigeria, by contrast, squeezed agriculture, directly through the marketing boards, and indirectly through its fixed exchange rate, which heavily taxed its agricultural exports and subsidized cheap imports.

In Indonesia \$1-a-day poverty declined from 47 percent in 1981 to 14 percent in 1996. In Nigeria it increased from 58 percent to 70 percent in the same period.<sup>22</sup> The different treatment of agriculture explains much of these widely divergent outcomes.

Sources: Mwabu and Thorbecke 2004; World Bank 1982.

land and forests, as a basis for sustainable agricultural growth. As shown by the contrasting experiences of Indonesia and Nigeria, both large oil exporters, fostering agricultural growth is appropriate for reducing poverty in mineral-rich countries as well (box 1.5).

### *Transforming countries*

More than 2 billion people, about three-quarters of the rural population in developing countries, reside in the rural areas of transforming economies, encompassing most of South and East Asia, North Africa and the Middle East, and some of Europe and Central Asia. Although agriculture contributed only 7 percent to growth during 1993–2005, it still makes up about 13 percent of the economy and employs 57 percent of the labor force. Despite rapid growth and declining poverty rates in many of these countries, poverty remains widespread and largely rural—more than 80 percent of the poor live in rural areas. Natural resources are also coming under growing pressure from agriculture and the competition for land and water from rapidly growing urban populations and non-agricultural sectors.

**Managing the rural-urban divide.** A distinguishing feature of transforming economies is the widening gap between rural and

urban incomes. In China the incidence of urban poverty declined twice as fast as that of rural poverty between 1980 and 2001; in Indonesia, 2.5 times as fast over the same period; and in Thailand 3.7 times as fast between 1970 and 1999.<sup>23</sup>

Nonagricultural sectors now account for most of the economic growth. But the transition of people out of agriculture and rural areas is not keeping pace with the restructuring of economies away from agriculture. In China, longstanding policy impediments to labor mobility<sup>24</sup> kept the rural population behind while urban economies were expanding rapidly. In India, the low level and quality of education of most rural workers is mainly responsible for their inability to find jobs in the booming services economy.

One policy response is facilitating faster absorption of the agricultural labor force in the urban economy through investments in human capital and labor market policies, such as vocational training, transport services, and job matching (see chapter 9). But the time lags in educating people are substantial. Moreover, the same policies also

make migration more attractive, inflating the pool of urban unemployed, leading to urban congestion and the urbanization of poverty. Complementing these policies with those that foster rural income growth and slow migration out of the traditional sector can provide important synergies.<sup>25</sup>

Rural income growth can do much for poverty reduction in the transforming countries (see focus A). For example, 75–80 percent of the dramatic drop in national poverty in China during 1980–2001 was the result of poverty reduction in the rural areas. A similar pattern was observed in Indonesia where the emergence of rural towns (“urbanization without migration”) was further emphasized.<sup>26</sup>

### *Reducing rural poverty through the new agriculture and nonfarm employment.*

Historically, there have been numerous attempts to reduce rural poverty and address the rising income gap by increasing agricultural protection, often with limited success. The current call for agricultural subsidies in the face of weak fiscal capacity in the transforming countries is also unlikely to provide a sustainable solution to massive rural poverty (box 1.6).

Increasing agricultural productivity, including yields for staple crops, will be critical in countering pressures for agricultural protection. Staple crops are still the largest agricultural subsector (slightly more than a third of agricultural output in China and India, and slightly more than half in Vietnam). In some countries that are large players in international markets, continuing to focus on food staples is also necessary to ensure national food security. But rising incomes shift the composition of food expenditure from basic and unprocessed staple foods to more varied diets with processed foods (chapter 2). So growth in agriculture is increasingly driven by the rapidly expanding demand for livestock products and high-value crops, which are also more labor intensive.<sup>27</sup>

The poverty impact of growth in the agricultural sector will thus depend increasingly on the poor connecting to these new growth processes, either as smallholders or as laborers. Vertically integrated supply

#### **BOX 1.6** *Supporting farmers without a strong fiscal base: lessons from Thailand*

Before the 1960s, Thailand was an agriculture-based country with rice accounting for the bulk of its export earnings. Rice exports were heavily taxed, mainly through a duty levied proportional to export quantities (the rice premium), which hovered around 30 percent until the mid-1970s. This served the dual purpose of raising government revenue for investment and securing cheap food for urban consumers. As GDP per capita doubled and exports from labor-intensive manufacturing increased (40 percent by the end of the 1970s), widening rural-urban disparities pressured politicians to install visible measures supporting farmers.

After some political instability, the Farmers' Aid Fund was established in 1974, based on large rice premium revenues from sharp increases in world rice prices during the world food crisis of 1973–75. The fund undertook several programs to support farmers, including price supports through government rice purchases. Yet the program was soon terminated, largely because

rice premium revenues fell with the decline in world rice prices after the food crisis.

This episode epitomizes the dilemma in formulating sustainable policies to address rural-urban disparities. The program was contradictory because it tried to support farmers based on the revenue from taxing them, without a strong fiscal base outside of agriculture. Even if the program had worked, increasing rice prices would have met strong resistance from poor urban consumers.

As Thailand's economy advanced, the rice premium was gradually reduced and then abolished in 1986. New support programs have since been introduced, such as the commodity credit program. Low-interest government loans are given against the pledge of rice, with the pledged rice canceling the debt if rice prices do not meet a target. However, such programs are unlikely to be sustainable or generous enough to close income gaps.

Source: Hayami 2005.



chains may pose particular challenges for them (see chapter 5), although recent evidence from China suggests that small and poor farmers take an active part in China's rapidly expanding horticulture economy.<sup>28</sup>

**Nonfarm employment.** Agriculture alone cannot relieve rural poverty; rural nonfarm employment is also important. The potential of agriculture to contribute to rural poverty reduction differs across countries. In China, where land is relatively equally distributed, the reduction in poverty was almost four times higher from GDP growth originating in agriculture than from GDP growth originating in industry or services.<sup>29</sup> Rapid agricultural development also contributed substantially to the dramatic poverty reduction in Vietnam over the past 15 years and is likely to remain an important pathway out of poverty for many of Vietnam's poor.<sup>30</sup> In India and Indonesia, however, growth in rural services was estimated to contribute at least as much as growth in agriculture toward reducing poverty.<sup>31</sup> In India the poverty-reducing effects of nonfarm economic growth are greater in states with higher initial levels of farm productivity and rural living standards.<sup>32</sup>

Growth in rural nonfarm employment in many cases remains closely linked to growth in agriculture, as agriculture becomes a larger supplier of intermediate inputs to other sectors such as processed foods (forward linkages) (figure 1.5). Rural trading and transport, often of food, make up about 30 percent of rural nonfarm employment.<sup>33</sup> Econometric estimates from rural China also suggest significant cross-sectoral effects from growth in farming to certain nonfarming activities, with less evidence of reverse linkages.<sup>34</sup>

But with urbanization and globalization, growth in rural nonfarm employment occurs increasingly independently from agriculture. Regions in India with the slowest growth in agricultural productivity had the largest increase in the rural nonfarm tradable sector.<sup>35</sup> When capital and products are mobile, investors seek low-wage opportunities in areas that did not increase their incomes through higher agricultural productivity. Urban overcrowding and

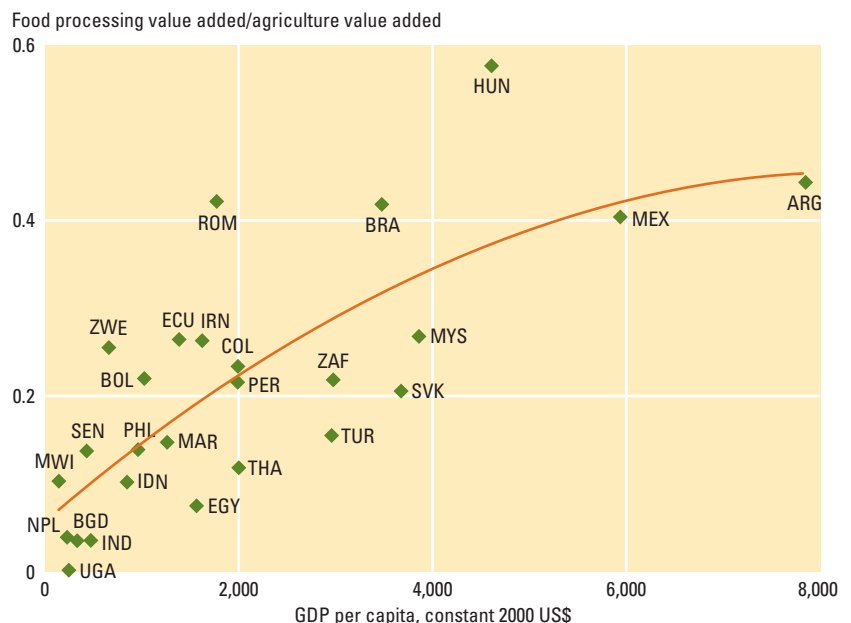
higher urban labor costs also stimulated urban-to-rural subcontracting in various sectors throughout East Asia, both for domestic consumption and for export.<sup>36</sup> Without the rapid expansion of rural nonfarm employment through subcontracting in the export-oriented town and village enterprises, rural poverty and inequality would have been much higher in China's central province of Hubei.<sup>37</sup>

Poverty reduction through rural nonfarm employment is often indirect. In India and Bangladesh, relatively few of the poor gain access to nonfarm jobs.<sup>38</sup> Yet by siphoning off nonpoor agricultural wage laborers, nonfarm employment puts upward pressure on agricultural wages, benefiting the poor.

### Urbanized countries

Agriculture makes up only 6 percent of the urbanized economies and contributes about proportionately to growth, but the agribusiness and food industry, and services can account for 30 percent of GDP. Although almost three-quarters of the population of urbanized countries lives in urban areas, 45 percent of the poor are in rural areas, and 18 percent of the labor force still works in

**Figure 1.5** The ratio of food processing to agricultural value added rises with incomes



Source: World Bank 2006y; UNIDO Industrial Statistics Database 2005.

Note: The list of 3-letter codes and the countries they represent can be found on page xviii.



THE WORLD BANK

agriculture. Most countries in Latin America and many in Europe and Central Asia fall into this category.

***Agriculture: a good business with poverty-reducing potential.*** In urbanized countries, agriculture acts like other tradable sectors, often economically important in specific subregions. It provides growth opportunities in subsectors with a comparative advantage as well as environmental services—with new markets for biofuels, carbon trading, and the preservation of biodiversity opening opportunities yet largely to be tapped. The main divide is now between the traditional rural sector and the modern rural and urban sectors. The pressure for agricultural protection remains.

With agriculture mostly tradable, prices do not decline from growth in productivity, and landowners capture most of the surplus. The distribution of land and the labor intensity of production govern the poverty-reducing effects. Poverty is increasingly reduced through the employment of unskilled labor. Much of the expansion of Chile's agricultural GDP can be attributed to a labor-intensive agroexport boom over the past two decades. The rural poor benefited indirectly through their employment by large-scale farmers and agroprocessors, with many jobs taken by women. The poverty-reducing impact has been substantial, despite vertically integrated supply chains. Each percent expansion of agricultural and agroprocessing output is estimated to have reduced national poverty by 0.6–1.2 percent.<sup>39</sup>

But success in agriculture does not always reduce poverty. Brazil experienced dramatic growth in agriculture during the 1990s, following trade liberalization and an improvement of price incentives. But it is unclear how much the boom reduced rural poverty because agricultural employment declined and shifted to higher-skilled wage workers as production became more capital intensive. The reduction in rural poverty was largely the result of income transfers and employment in the rural nonfarm economy.<sup>40</sup>

The challenge of using agriculture for development in the urbanized countries is to create opportunities for smallholders in supplying the modern food markets and

good jobs in agriculture and the rural nonfarm economy (chapter 10). The rapid concentration in agribusiness and food retailing sharpens this challenge (chapter 5).

### **Agriculture's development potential shortchanged**

The agriculture-for-development connections revealed by the evidence reviewed here have too often not been exploited. Certainly agriculture has yet to perform as an engine of growth in most Sub-Saharan countries, where populations are slowly urbanizing without a reduction in poverty. Even in the transforming countries, the rural poverty and income disparity challenges remain huge, despite spectacular growth in some countries.

Four hypotheses could explain this divide between promise and reality:

- Agricultural productivity growth is intrinsically slow, making it hard to realize the growth and poverty-reducing potential of agriculture.
- Macroeconomic, price, and trade policies unduly discriminate against agriculture.
- There has been an urban bias in the allocation of public investment as well as misinvestment within agriculture.
- Official development assistance to agriculture has declined.

### ***Is the agricultural sector less productive?***

Some refer to the oft-observed slower growth in agriculture than in the rest of the economy to argue that agriculture is inherently less dynamic. The argument goes as far back as Adam Smith, who posited that productivity was bound to grow slower in agriculture than in manufacturing because of greater impediments to specialization and the division of labor in agricultural production. More recently it is argued, especially for Africa, that rapid agricultural growth will be difficult because of an inherently unfavorable agroecological base, rapid soil degradation, low population density, poorly functioning markets, and competition from the rest of the world.<sup>41</sup>

In this debate, it is important to distinguish the rate of growth in output (or



value added) in agriculture from the rate of growth in some measure of productivity, such as labor productivity or total factor productivity. Comparing the rate and sources of growth in value added in agriculture and in the nonagricultural sectors over the past 15 years shows different patterns over the three worlds of agriculture (figure 1.6). In transforming countries, the extraordinary dynamism of the nonagricultural sector is reflected in its sustained high growth rate based on both the increase in employment and in labor productivity—as evident from this decomposition of growth. But rates of growth in agriculture and nonagriculture are similar in the agriculture-based and urbanized countries. And labor productivity in agriculture grew faster than in nonagriculture in each of these two country categories.

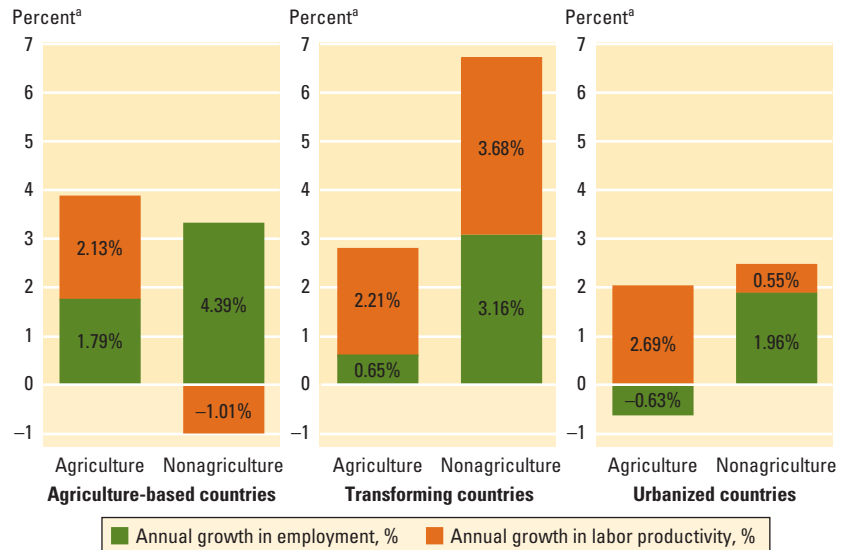
Moreover, total factor productivity (TFP) has grown faster in agriculture than in industry in many settings. For 50 low and middle-income countries during 1967–92, the average growth in TFP was 0.5 to 1.5 percentage points higher in agriculture than in nonagriculture, with comparable differences observed across the development spectrum.<sup>42</sup>

These findings are not taken to claim superiority in agricultural TFP growth over the past decades, but to refute the notion that agriculture is a backward sector, where investment and policies are automatically less effective in generating growth. Brazil and Chile—where agricultural commodities have become mostly tradable and where growth in agriculture has exceeded growth in nonagriculture for more than a decade—confirm that agriculture can be a dynamic sector. But in many countries where agriculture is less tradable, it is likely to grow more slowly than nonagricultural sectors, given Engel's Law (as incomes rise, the proportion spent on food falls).

### ***Are macroeconomic, price, and trade policies discriminating against agriculture?***

There is considerable evidence that slower growth in agriculture relates to the macro and sectoral policy biases against it. The landmark Krueger, Schiff, and Valdés (1991)<sup>43</sup> study clearly documented how 18

**Figure 1.6 Labor productivity has been a more important source of growth in agriculture than in nonagriculture, 1993–2005**



Source: FAO (2006a).

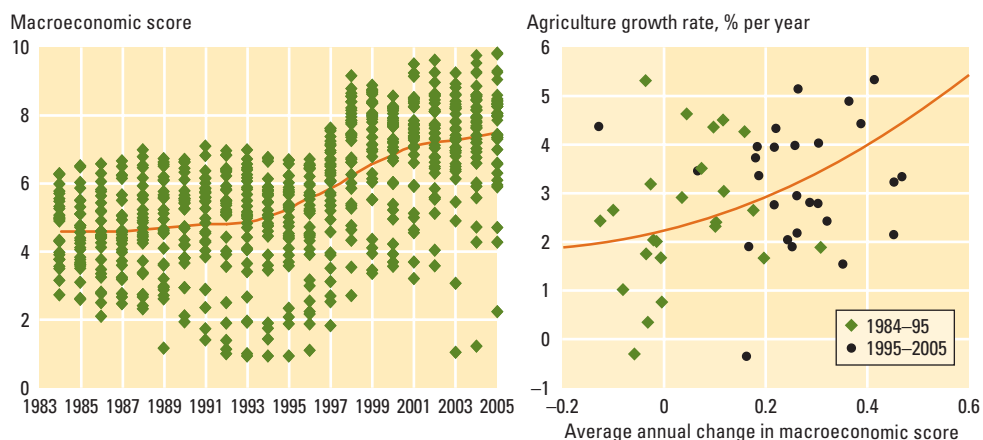
a. Annual sector growth rate (equal to the sum of the growth rates for employment and labor productivity).

countries taxed agriculture relative to other sectors. Interventions induced a 30 percent decline in the relative price of agricultural products with respect to a nonagricultural price index. This policy bias was largest in agriculture-based countries of Sub-Saharan Africa, with overvalued exchange rates, high tariff protection in industry, and taxes on agricultural exports all contributing to the bias. It was estimated that a 10 percentage point reduction in total taxation to the sector would increase overall annual growth by 0.43 percentage points.

Since then, most developing countries have substantially improved their macroeconomic policy and reduced their biases against agriculture (chapter 4). A composite score comprising three key elements of sound macroeconomic policy (fiscal, monetary, and exchange rate) shows a clear improvement since the mid-1990s in almost all Sub-Saharan African countries (figure 1.7). A positive association is also observed between improvement in that score and the performance of agriculture.

Econometric evidence at the country level shows that periods of rapid growth in agriculture and substantial poverty reduction have followed reforms. In Uganda the increase in coffee prices—largely brought about by domestic market liberalization, but also by the devaluation of the exchange rate



**Figure 1.7 Macroeconomic policy and agricultural growth have improved in Sub-Saharan Africa**

Source: <http://www.icrgonline.com>.

Note: The macroeconomic score is the average of the budget balance score, inflation score, and exchange rate stability score provided by the *International Country Risk Guide*. Each point represents a country.

and favorable world prices—substantially reduced rural poverty during 1992–2000 by spurring a supply response. It is estimated that a 10 percent increase in the price of coffee reduces the poverty headcount by 6 percentage points.<sup>44</sup> In China 60 percent of the dramatic expansion of agricultural output and 51 percent of the reduction in rural poverty from 33 to 11 percentage points between 1978 and 1984 have been attributed to institutional reforms, especially the household production responsibility system, and to price reforms.<sup>45</sup>

Even where macroeconomic and price policies have been reformed, international trade policies—especially protection and subsidies of member countries of the Organisation for Economic Co-operation and Development (OECD)—continue to impose substantial costs on developing-country agriculture. Overall trade policies depress prices of agricultural products in international markets by an average of 5 percent (chapter 4). Only modest progress has been made to date in reforming these policies, and much depends on a successful outcome of the Doha Round of trade talks.

### *Is public spending biased toward urban needs?*

Successful countries have invested in agriculture before taxing it (directly and indirectly) to finance industrial development.<sup>46</sup>

It was the heavy exploitation of agriculture before meaningful (public) investment in agricultural development that proved lethal, especially in Africa. The goose was often killed before it could lay its golden egg. The share of public spending on agriculture in agriculture-based countries (mostly in Africa) is significantly less (4 percent in 2004) than in the transforming countries during their agricultural growth spurt (10 percent in 1980) (table 1.3). The low levels of agricultural spending in Sub-Saharan Africa are insufficient for sustained growth. Recent advocacy by the New Economic Program for African Development to increase agricultural spending to 10 percent of national budgets aims to reverse this trend, bringing it to a level that is closer to that which brought success to the now transforming countries.

To assess optimal cross-sectoral allocations of public investment, the returns to spending across sectors would ideally be systematically compared. Doing so is fraught with conceptual, methodological, and data problems, indicating an important continuing research agenda. High returns to agricultural research and extension have been documented, with a meta-analysis reporting rates of return in the range of 35 percent (Sub-Saharan Africa) to 50 percent (Asia) for 700 studies, far above the cost of money accessible to developing countries (see chapter 7).<sup>47</sup> While irrigation projects

**Table 1.3 Public spending in agriculture-based countries is low**

	Agriculture-based countries		Transforming countries		Urbanized countries	
	1980	2004	1980	2004	1980	2004
Public spending on agriculture as a share of total public spending (%)	6.9	4.0	14.3	7.0	8.1	2.7
Public spending on agriculture as a share of agricultural GDP (%)	3.7	4.0	10.2	10.6	16.9	12.1
Share of agriculture in GDP (%)	28.8	28.9	24.4	15.6	14.4	10.2

Source: Fan forthcoming.

Note: Numbers for agriculture-based countries are based on 14 countries (12 from Sub-Saharan Africa), those for transforming countries on 12 countries, and those for urbanized countries on 11 countries.

in Sub-Saharan Africa were often ineffective in the 1970s and 1980s, returns on projects now often reach the 15–20 percent range commonly obtained in the rest of the world (chapter 2).<sup>48</sup> Evidence from rural Uganda shows agricultural R&D and rural feeder roads as profitable investments.<sup>49</sup>

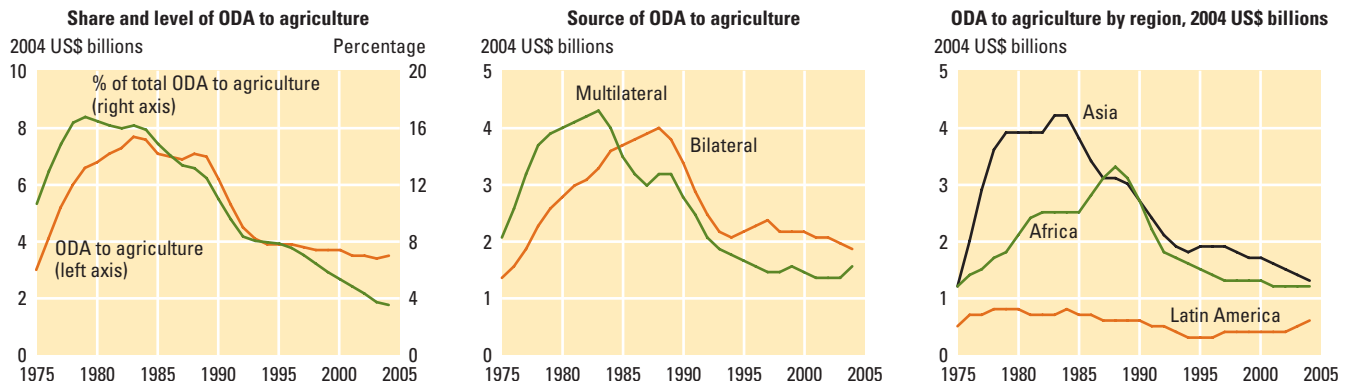
In Asia and Latin America, the decline in public funding for agriculture partly reflects agriculture's diminishing importance in the economy (table 1.3). There have been recent reversals in several countries though, including China, India, and Mexico,<sup>50</sup> motivated by the need to fight poverty and narrow the rural-urban income gap.

Agricultural spending has often been biased toward subsidizing private goods (fertilizer, credit) and making socially regressive transfers. These are overall substantially less productive than investments in core public goods such as agricultural research, rural infrastructure, education, and health.<sup>51</sup> The bias toward private goods often worsens as countries' GDP per capita rises, as in India,

where agricultural subsidies rose from 40 percent of agricultural public expenditures in 1975 to 75 percent in 2002 (chapter 4). Underinvestment in agriculture, especially pronounced in the agriculture-based economies, is further compounded by misinvestment, especially in the transforming and urbanized countries.

### *Development assistance to agriculture declined dramatically*

The share of agriculture in official development assistance (ODA)<sup>52,53</sup> declined sharply over the past two decades, from a high of about 18 percent in 1979 to 3.5 percent in 2004 (figure 1.8). It also declined in absolute terms, from a high of about \$8 billion (2004 US\$) in 1984 to \$3.4 billion in 2004. The bigger decline was from the multilateral financial institutions, especially the World Bank. In the late 1970s and early 1980s the bulk of agricultural ODA went to Asia, especially India, in support of the green revolution, although this declined

**Figure 1.8 Official development assistance to agriculture declined sharply between 1975 and 2004**

Source: OECD 2006a.

Note: Data smoothed by locally weighted regressions.



THE WORLD BANK

dramatically thereafter. Total ODA to agriculture in Africa<sup>54</sup> increased somewhat in the 1980s, but it is now back to its 1975 level of about \$1.2 billion. This decline in attention to agriculture is all the more striking because it happened in the face of rising rural poverty.

A complex of reasons explains the decline of donor support to agriculture and rural development: (1) falling international commodity prices that made agriculture less profitable in developing countries; (2) increased competition within ODA especially from social sectors; (3) emergency responses to numerous crises; (4) opposition from farmers in some donor countries to supporting agriculture in their major export markets; and (5) opposition from environmental groups that saw agriculture as a contributor to natural resource destruction and environmental pollution.

Failed agricultural development efforts also influenced the expectations of donors. The “agroskepticism” of many donors may well be related to their experience with past unsuccessful interventions in agriculture, such as large-scale integrated rural development and the training-and-visit system for extension, which were both promoted heavily by the World Bank.<sup>55</sup> Poor understanding of agrarian dynamics, weak governance, and the tendency for donors to seek one-size-fits-all approaches contributed to the failures. Implementation difficulties are especially challenging in agriculture with weak governance and the spatial dispersion of programs. This experience underlines the need to strengthen donor and country capacity for program design and to invest in governance and institutions for effective implementation (chapter 11).

Since 2001, government and donor interest in agriculture has increased, at least in discourse and modestly in support. This is happening because of a turnaround in the reasons for the decline in support to agriculture, such as higher international commodity prices; higher priority of agriculture to developing-country governments; and new approaches to agricultural development projects based on decentralization, participation, and public-private partnerships, with greater likelihood of success.

## The political economy of agricultural policy

While the low-productivity beliefs may be changing under the weight of evidence, and the macroeconomic context has definitely improved, a better understanding of the political economy of agricultural policy making is necessary to address the continuing policy neglect and under- and misinvestment in the sector. This understanding will be used in chapters 4 to 8 to interpret policy outcomes, and in chapters 10 and 11 to design agriculture-for-development agendas that meet the political feasibility criterion.

### *The process of agricultural policy making*

Agricultural policy making can be seen as the outcome of a political bargain between politicians and their citizens.<sup>56</sup> Citizens can be atomistic individuals who demand policy action in exchange for political support (votes) or they can be organized in lobbies that defend special interests.

**State objectives and policymaking.** Politicians enjoy different degrees of autonomy. They have their own objectives, for example, to be reelected or to maintain legitimacy, to improve the welfare of their constituency, or to pursue some vision for the country. Institutions such as the structure of the bureaucracy, alternative forms of representation, agenda-setting mechanisms, and reward systems condition their preferences and power in the political game. There are many examples of major policy reforms led by a state with considerable autonomy in decision making. The green revolution in Asia, for example, occurred in both democratic and nondemocratic political systems. In India, the driving force of the green revolution was the political will to become food self-sufficient, once the U.S. government decided in the mid-1960s to use food aid as an instrument of foreign policy.<sup>57</sup> Indonesia (under Suharto) is an example of a single-party regime that launched a green revolution.

Authoritarian regimes in Africa apparently had fewer political incentives to sup-

port smallholder agriculture. African states used both coercion and the strategic support of larger farmers to suppress opposition to agricultural pricing policies that taxed agriculture.<sup>58</sup> There are also numerous cases in which African states did make serious efforts to intensify agricultural production, but unlike in Asia, many focused on large-scale production, without sustained success.<sup>59</sup>

Economic crises can give policy makers more autonomy to engage in reforms that were difficult in normal times. Many reforms of the role of the state in agriculture were introduced as part of structural adjustment made inevitable by the debt crisis—for example, the dismantling of marketing boards in Uganda (see box 4.4).

More often, policy makers seek to maximize political support within their resource constraints. Political support is usually related to the expected policy-induced changes in welfare. Hence politicians may rally support by favoring groups that are losing ground relative to the others. Farm subsidies were introduced in the 1930s in the United States when farm incomes dropped 50 percent more than those of their urban counterparts. Electricity subsidies in India are maintained partly as a compensation for the increasing income disparity between the agricultural and nonagricultural sectors. China's bold reforms launched in 1978 answered the imperative of restoring China's food independence and a minimum living standard for all its citizens. In democracies, the votes of farmers can be very influential. The 2004 elections in India, for example, were won by a party coalition that promised to resolve "agrarian distress."<sup>60</sup>

**Collective action and policymaking.** Organized groups of citizens can have strong influence over the policy process. The power of lobbies depends on their ability to overcome the costs of organization and free-riding. Extensive empirical evidence shows that small and more geographically concentrated groups fare better, as do groups better organized and with strong leadership. To be effective, lobbies need financial resources—for example, to contribute to political campaigns. They also need human

capital, such as the skills to influence politics. And—importantly—they need social capital such as strong membership organizations that can be mobilized for demonstrations and lobbying. In developing economies, farmers' transaction costs in collective action are high in view of their large numbers, dispersed nature, high transportation and information costs, poverty, and strong patronage relations with a landlord class that may pursue opposite interests. For this reason, smallholder interests tend to be poorly represented, and policy is biased toward urban interests and those of the landed elite.

The urban poor, by contrast, do not need a high degree of organization to stage a public protest, as illustrated by the food riots over the price of bread in Egypt. Industrial groups usually have more financial resources to influence politics, and they often belong to social elites, whose social capital facilitates lobbying. As countries urbanize and industrialize, farmers face fewer challenges to collective action. Their numbers decrease and their access to resources increases while the widening income gap between the agricultural and nonagricultural sectors provides a cause for action. Historically, in industrial economies, farmers have formed astonishingly effective pressure groups to pursue agricultural protection and subsidies, which have proved extremely difficult to dismantle in spite of the rapidly decreasing number of farmers (see chapter 4).<sup>61</sup>

Democratization in many developing countries has increased the possibilities for smallholders to form organizations and influence politics. In West Africa, for example, producer organizations and parliaments are increasingly involved in the formulation of agricultural strategies and policies (see chapter 11).<sup>62</sup> They have influenced policy making in Senegal and Mali. Whether these agricultural policies will increase budget allocations to agriculture remains to be seen.

### ***Why use inefficient policy instruments?***

Imperfect information on welfare effects implies that certain policy instruments are *politically* more effective than others, even

if less efficient *economically*. As politicians maximize short-run political support rather than their constituency's welfare, they prefer the former instruments over the latter. For example, price supports are chosen over direct income transfers because self-sufficiency appeals to a nationalistic sentiment of voters, farmers fear an excessively visible "welfare" stigma, and information on the cost of direct transfers could lead to subsequent policy reversal. Some instruments have benefits that are easier to target to political clients, such as investment projects or food aid. Broadly distorting export taxes may thus be maintained to provide fiscal revenues that can be used to reward political clients and ethnic-group supporters.<sup>63</sup> Certain instruments have costs that are easier to conceal—for example, trade taxes as opposed to land or value added taxes. Net social cost is exchanged for political feasibility and redistributive gains.

The inability to make credible commitments in a dynamic policy process may further force the government into suboptimal policy. Groups losing from reform anticipate that they will be worse off in the long run, even though compensation may be promised now. Lack of a commitment device to clinch compensation when there is a delay between policy implementation and redistributive effects is a major hurdle to policy making. The resulting status quo bias has been used to explain opposition to trade reforms and to the removal of subsidies in exchange for better future public services.

Decentralization and closer proximity between the electorate and policy makers may be part of the answer. Increasing the autonomy of compensatory agencies or casting compensations into legislation—such as Mexico's PROCAMPO to make the North American Free Trade Agreement negotiations politically acceptable to producers of crops competing with imports—have been used successfully, with the risk of irreversibility once subsidies have been introduced.

### **A new role for agriculture in development**

The case for using the powers of agriculture for poverty reduction and as an engine of growth for the agriculture-based countries is still very much alive today. Effective use requires adjusting agendas to each country type and within countries as well. However, despite convincing successes, agriculture has not been used to its full potential in many countries because of anti-agriculture policy biases and underinvestment, often compounded by misinvestment and donor neglect, with high costs in human suffering. New opportunities for realizing this potential are present today, but also coming are new challenges, particularly in pursuing a smallholder-driven approach to agricultural growth that reconciles the economic, social, and environmental functions of agriculture. The following chapters explore the instruments available to use agriculture for development and how to define and implement agendas specific to each country type.

