7 Rural poverty

Absolute poverty blights the lives of hundreds of millions in many countries. They have barely adequate (and often uncertain) diets, and incomes so low that they can spend little for clothing, fuel, shelter, and other necessities.

The dimensions and consequences of absolute poverty have been explored in previous Reports, notably in the discussion of poverty and human development two years ago. The 1980 Report suggested that absolute poverty affected a total of about 780 million people, excluding China and other low-income centrally planned economies such as Viet Nam. China’s nationwide food security, along with basic health and education services, may blunt the impact of poverty; nevertheless, it is probable that at least 150 million people there enjoy living standards little better than those of the absolutely poor in other countries. The inclusion of China thus suggests a global total of close to 1 billion people living in absolute poverty.

This chapter examines ways in which agricultural policies and programs can help them. The great majority of the absolute poor—over 90 percent—are rural people who work on farms, or do non-farm work that depends in part on agriculture. More than half are small farmers who own or lease their land; another 20 percent are members of farming collectives, mainly in China. The remaining one-fifth to one-quarter are landless, and their livelihood is particularly precarious. While often no poorer than the poorest farmers, landless laborers are more likely to see their jobs disappear in a crisis and are less able to fall back on reserves, including the final option of mortgaging or selling their land. Most landless laborers live in low-income market economies with high rural population densities—over 80 percent of them are in Bangladesh, India, and Pakistan, and the rest in areas such as Java, Indonesia.

Poverty and growth

Past experience clearly shows that a combination of economy-wide and agricultural growth is essential for the long-term alleviation of poverty. In particular, new, more productive employment opportunities are needed outside agriculture. The process of structural transformation, which was discussed in Chapter 5, helps to create urban industrial jobs and to diversify the rural economy itself. Such developments have led to spectacular changes in some middle-income countries over the past twenty years. Despite the rapid growth of population and the labor force, agriculture’s share of total employment and the absolute size of the agricultural labor force have fallen or will soon begin to do so in countries such as Brazil, Colombia, Indonesia, Republic of Korea, Romania, Turkey, Venezuela, and Yugoslavia. If the momentum of growth is maintained, earnings and productivity in agriculture itself should accelerate. Nevertheless, large pockets of absolute poverty may remain in relatively remote areas or where agricultural production is stagnant.

Urban living conditions—notably the squalor of the slums in which most new migrants tend to cluster—often appear to challenge the notion that rural-urban migration reduces poverty. Migrants are indeed usually poor by urban standards, but this reflects the large difference in incomes between the cities and the countryside that encouraged them to migrate in the first place. There is extensive evidence that urban immigrants do improve their incomes, health, and education prospects. Moreover, the wages they remit to those who remain behind are an important source of income for many rural areas. Studies in India, Kenya, Malawi, and Thailand suggest that remittances can often exceed 10 percent of the total incomes of villages where families of migrants live. International remittances from high-wage to low-wage economies can have similar—and sometimes even more dramatic—effects. Many migrants to other countries send back or save over 50 percent of their incomes; in the Yemen Arab Republic, remitt-
ances have formed the basis for community-financed village development programs for building roads, schools, and health and water supply facilities.

The expansion of nonfarm rural income and employment is directly linked to agricultural growth. Estimates suggest that up to 25 percent of the labor force in rural areas may be primarily engaged in nonagricultural pursuits—which include a range of service and repair work, food processing, handicrafts, leather, textiles, and metalworking, together with construction, commerce, and marketing. Almost all these activities satisfy local demand. Because they generally use simple, labor-intensive techniques and need little in the way of capital or skills, they can expand rapidly in areas of dynamic agricultural growth (although much of the expansion occurs in the market towns that serve the countryside rather than in areas strictly defined as rural). In Thailand, for example, agricultural output grew at over 7 percent a year during a six-year period in the 1970s; the nonfarm income of rural households is estimated to have grown nearly twice as fast, by over 12 percent a year.

Nonfarm income is particularly important for the very poor. In countries as different as India, Republic of Korea, and Sierra Leone, landless or nearly landless households earn about half their income from nonfarm sources—a proportion that falls to 10 to 20 percent for households with larger land holdings. (The data for India in Figure 7.1 show a typical pattern.) Nonfarm employment is also an important source of secondary earnings for small farmers and the landless in the agricultural slack season.

Over the long run, economic growth reduces the total number of those living in absolute poverty and makes it easier to deal with those who remain. The impact of growth is uneven, however, and the prospect of eventual benefits is of little comfort to those who suffer in the interim. Moreover, growth itself may increase hardship for those who do not share in it. For example, cost-reducing innovations will win new markets and raise production—quite possibly at the expense of those living in areas where natural conditions rule out similar innovations. These other areas are often the poorest to begin with. Commodities facing inelastic world demand are particularly prone to difficulties of this kind: tea or cocoa producers in one country can lose heavily because of technical change occurring half a world away.

Mechanization is another factor often identified as a threat to the livelihood of the poor, particularly the landless. Mechanization generally raises both output and labor productivity, but the mix varies. Under certain conditions, some machines add little or nothing to output while replacing a lot of labor; others may add a lot to output and displace little labor. The machines most likely to reduce farm employment are harvesters, threshers, tractors, and
milling machines. Labor-displacing mechanization is usually triggered by rising farm wages—which in turn normally reflect improved conditions and expanding job markets. For example, with the growth of nonfarm employment during the Green Revolution, the labor used on land double-cropped with wheat and rice in the Indian Punjab fell by 16 percent. Over three-quarters of the fall (13 percentage points) was accounted for by the use of tractors.

In stagnating, low-income regions, however, labor-displacing mechanization is rare. Rural wage rates are so low that it is not profitable to replace human tillers and harvesters with expensive machines unless the agricultural economy is expanding rapidly. Nevertheless, the pace and profile of mechanization can be radically altered by policies that seem, on the face of it, extraneous. Policies on exchange rates, foreign exchange licensing, subsidized credit, and import duties have encouraged the spread of tractors in Brazil, Egypt, Pakistan, Zaire, and other countries. Where neither agriculture nor other parts of the economy are growing rapidly, the effects of premature mechanization can be disastrous for those who lose their jobs.

**Initiatives to counter rural poverty**

Economic growth has been most rapid in middle-income countries in recent years, notably among those with per capita incomes of $1,000 or more. Absolute poverty is consequently increasingly concentrated among the low-income countries (and among middle-incomes countries that have experienced slow growth). Roughly 40 percent of the poor are in India, Bangladesh, and other South Asian economies. Another 20 percent are Chinese. Low- and middle-income sub-Saharan Africa accounts for about 15 percent, as does East Asia (particularly Indonesia and Indochina). Latin America, North Africa, and the Middle East account for only about 3 to 4 percent each.

Policies and programs to accelerate overall growth are clearly crucial for the long-term reduction of poverty. The special role of agriculture in strategies for economy-wide growth was discussed in Chapters 5 and 6. Many of the policy changes advocated—for example, improved producer incentives and higher priority for agricultural research programs—can also help improve the prospects of the rural poor. But programs dealing directly with the problems of the poor are also essential. Although direct measures are of special relevance for the low-income economies, many middle-income countries (including some whose growth performance is otherwise satisfactory) could also achieve still better results if they addressed poverty objectives more directly.

This section discusses four sets of measures to improve the productivity of the poor—human resource development, small-farm programs, agrarian reform, and rural works. Such programs can

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**Box 7.1 Farmer education, farm efficiency, and nutrition in Nepal**

Nepal's Terai region, in the lowlands along the Indian border, suffers many of the interrelated manifestations of rural poverty—low agricultural productivity and income, low rates of literacy and school enrollment, a high prevalence of malnutrition, and high rates of disease, mortality, and population growth. The 1980 World Development Report concluded that this "seamless web" of factors that entrap families in poverty can perhaps best be broken by providing primary education: men and women with even a little education seem consistently better able to improve agricultural efficiency, to take advantage of health and nutrition information, and to seek methods of family planning. To provide further empirical evidence of these linkages, the World Bank gathered data from 800 farm households in the Terai to assess the extent to which education helped alleviate rural poverty. A recently introduced and particularly profitable crop in the Terai is wheat, and the study found a strong link between farmer education and efficiency in wheat production, even after controlling for other factors such as the ability, size of holding, or family background of the farmer. There was definite evidence of a threshold (at about six years of education), below which education's impact was insignificant. Among farmers with more than six years of schooling, wheat yields were over 25 percent higher than those with less or none. Competence in arithmetic affected the propensity of a farmer to grow wheat at all. The magnitude of this effect was sufficient to suggest very high economic returns to education as a factor in agricultural production.

The same research project also suggested the potentially self-reinforcing character of investments that address any of several important facets of rural poverty—illiteracy, malnutrition, and low agricultural productivity. Data on children indicated that malnutrition was an important cause of impaired learning and nonattendance in school; in the next generation the resulting illiteracy could be expected to impair agricultural productivity, which would in turn exacerbate malnutrition, thereby completing a vicious circle. Nepal's policy of vigorous expansion of primary education would seem, then, to offer promise of raising agricultural productivity and alleviating several dimensions of rural poverty.
bring important benefits under widely differing circumstances, but their impact tends to be felt only in the long term. Moreover, some aspects of poverty—for example, difficulties associated with large, fatherless families—are hard to tackle through improved production opportunities alone. The final section in the chapter therefore deals with government efforts to maintain food security and to subsidize food for those in greatest need.

**Human resources**

The 1980 *World Development Report* marshaled a considerable body of evidence to show how programs of education, health care, and nutrition can help increase earnings and income among the poor. Evidence continues to accumulate supporting these conclusions. Education is especially important in enhancing mobility and making farmers more receptive to new practices and market opportunities. A recently completed World Bank research project in Nepal (Box 7.1) found strong evidence that education improves a farmer’s efficiency, and an earlier Bank study had calculated the rate of return to primary education (solely in terms of its contribution to farmer efficiency) to be between 7 and 11 percent in the Republic of Korea, between 14 and 25 percent in Thailand, and between 25 and 40 percent in Malaysia. These findings from Asia complement findings from elsewhere that consistently show education to increase farmer efficiency whenever modernization and change in the environment require innovative, adaptive responses.

Labor mobility—from one country to another, from rural to urban areas, and from agricultural to nonagricultural activities in rural areas—is often a potent means of escaping from poverty. Mobility, whether geographical or occupational, is generally a result of individuals’ decisions, which are based on informal networks of information and experience. Governments can promote mobility—and help limit its potentially adverse side effects—in several ways. Education and training enable poor people to acquire new skills and thereby expand their earnings opportunities. They are particularly valuable in areas where permanent emigration needs to be encouraged because, for example, population growth is running ahead of productive capacity.

Similarly, nonfarm rural enterprise can sometimes be promoted by worker and management training, as well as by improving small businesses’ access to credit to help finance expansion, and by investment in infrastructure (such as rural electrification, transport, and communications). Such programs can help small towns become potential growth poles in rural areas. Encouraging people to better themselves where they live can help slow the pace of urbanization and cut the cost of expanding and upgrading urban infrastructure and services.

Women are often the least mobile and therefore can benefit most from programs which foster rural development and employment opportunities close to home. While in some societies young unmarried women are quick to move to new jobs in urban centers, married women, those with children, and the old of both sexes are usually closely tied to the household and farm. Attention should therefore be given to fostering productive on-farm and local employment opportunities for women and to meeting their needs for education and training in programs that support migration from depressed farm areas.

**Small-farmer programs**

Small farmers are by far the largest proportion of the rural poor and, because of their ties to the land, the least mobile. There are enormous variations in the amount of land they farm, in their status (as sharecroppers, tenants, and owners), and in the kinds of farming they undertake. They have several common characteristics, however; they do most of their own work, have few assets, and usually consume most of what they produce. Absolutely poor farmers are concentrated in Asia, where rural population densities are especially high, and in Africa, where little has been done to raise land productivity. Figure 7.2 shows the size structure of farms in different parts of the world.

On the face of it, small family farms may seem inefficient compared with large farms and plantations which use hired labor or machinery. The evidence disproves this. Where small and large farms coexist, as in South Asia or Latin America, research shows that small farms usually produce more output per unit of land farmed than do large ones, even when allowance is made for the quality of land. Even in the developed countries, though farm size has grown with mechanization and rural emigration, farms are still typically family-based and hire very little labor.

The resilience and productivity of small family farms throughout the world is striking—especially in the light of characteristics which might be expected to make them less competitive than large farms, such as:

- Small farmers are unable to exploit economies of scale. Their transaction costs are high because their marketed output, purchases of inputs, and use of credit are on a small scale.
- Lack of assets limits their...
Small farmers cannot afford to spend as much as large farmers to explore and adopt new techniques. Productivity gains from new techniques usually increase profits most among those who use them first.

Small farmers tend to be the first to suffer during shortages of fertilizer, seed, and water. They lack the influence of their larger neighbors, whose goodwill is more important to local suppliers.

Offsetting factors are that small farmers benefit from lower labor costs and self-management. The use of hired labor on large farms imposes a transaction cost on both workers and employers. The uncertainties of obtaining work or workers on any given day make it necessary for workers to seek, and employers to be willing to provide, more in compensation than is needed on family farms. The quality of farming is even more important than its cost. Farming is a complicated business that requires not only hard work but also care and attention. The small farmer's motivation is usually strong, especially if he is growing food to feed the family.

Small farmers exploit their advantages (and offset some of their disadvantages) by putting more hours of work into each hectare than large farmers do. Although their capital-to-land ratio is often higher than that of large farmers, small farmers usually have lower ratios of nonland capital to labor.

Table 7.1 illustrates some of these tendencies in the case of Brazil. The same pattern can be found in many countries, but it is usually more muted.

During the past ten years in particular, governments, supported by international development agencies, have sought to capitalize on the virtues of small farms and to help them overcome their disadvantages. Some of this work is complex and requires more or less simultaneous action on several fronts. In other cases, growth may be held back by a single bottleneck, and a less complex solution is then possible. For example, the lack of roads in remote areas may limit or wholly prevent reliable, cheap delivery of commercial supplies, profitable penetration of markets, specialized production, and effective deployment of farmer services and research. Throughout the world road building has been the foun-
dation of rural development schemes. Small-farm irrigation programs, primarily to improve water availability and control, are also of special importance.

Other programs include efforts to direct part of the flow of farm credit to small farmers (sometimes cooperative group guarantees are used as collateral—an approach pioneered in Malawi’s Lilongwe land development program). Programs to assist smallholder production of plantation crops have involved supervised credit, technical services, and assured market access. Efforts of this kind have been particularly successful in Kenya (tea and coffee growers) and in Asia (rubber and oil palm schemes in Indonesia and Malaysia).

More complex programs are often designed for an intensive development effort in low-income areas or regions. The PIDER program in Mexico is an example: started in 1973, it channels some $450 million annually to about 120 carefully chosen low-income areas estimated to include about half of Mexico’s 12 million rural poor. The money finances a wide variety of agricultural investments plus social and economic infrastructure. A national scheme of a different type, centered on the production of one commodity, is India’s dairy development program which uses producer cooperatives (see Box 7.2).

In their early days, some multipurpose programs tended to be too complicated to implement successfully, especially in countries with limited administrative and management skills. In some cases, the necessary managerial and financial support could be provided only with international assistance; replication in other, equally deserving areas proved not to be possible. Inadequate preparation—a weakness not confined to dairy areas or regions. The PIDER development effort often designed for an intensive development program which uses producer cooperatives (see Box 7.2).

Table 7.1 Farm structure in Northeast Brazil, 1974

<table>
<thead>
<tr>
<th>Farm size (ha)</th>
<th>Average holding (ha/farm)</th>
<th>Average land value (cr/ha)</th>
<th>Labor input (yrs/ha)</th>
<th>Capital input (cr/ha)</th>
<th>Capital/labor ratio (cr/worker)</th>
<th>Gross output (cr/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9.9</td>
<td>4</td>
<td>1,266</td>
<td>0.247</td>
<td>1,203</td>
<td>4,870</td>
<td>769</td>
</tr>
<tr>
<td>10-49.9</td>
<td>27</td>
<td>1,054</td>
<td>0.075</td>
<td>529</td>
<td>7,057</td>
<td>362</td>
</tr>
<tr>
<td>50-99.9</td>
<td>72</td>
<td>1,064</td>
<td>0.041</td>
<td>405</td>
<td>9,872</td>
<td>291</td>
</tr>
<tr>
<td>100-199.9</td>
<td>141</td>
<td>1,318</td>
<td>0.028</td>
<td>318</td>
<td>11,341</td>
<td>288</td>
</tr>
<tr>
<td>200-499.9</td>
<td>299</td>
<td>785</td>
<td>0.019</td>
<td>243</td>
<td>12,792</td>
<td>192</td>
</tr>
<tr>
<td>Over 500</td>
<td>1,180</td>
<td>625</td>
<td>0.012</td>
<td>140</td>
<td>11,625</td>
<td>121</td>
</tr>
</tbody>
</table>

Source: Kutcher and Scandizzo (1982).

Box 7.2 The milk revolution in India

Every day at dawn and dusk, 2 million Indian farmers pick up their milk cans and cycle or walk to the nearest collection center. They are part of the dairy cooperative movement that has swept India since the early 1970s, enabling owners of a few dairy cows to profit from buoyant demand for their perishable product in distant cities.

The movement began on a small scale thirty years ago, when a dairy producers’ cooperative was established in the small town of Anand in western India. The Anand cooperative formed the model for a grass-roots movement in most Indian states. Assisted by the World Food Program, the EEC, FAO, and IDA, this movement has grown into an industry comprising more than 10,000 village cooperatives that process 2.5 million liters of milk every day. They sell fresh milk to Bombay, Delhi, and other major cities and supply processed dairy products throughout the country.

The cooperatives are organized in three tiers: village dairy societies, unions of the dairy societies, and a federation of the unions. The whole system is owned by the primary milk producers. Two semi-autonomous government agencies—the National Dairy Development Board and the India Dairy Corporation—provide technical and financial assistance.

The cooperatives form an integrated system for marketing and processing. The local cooperatives buy milk on commission at the collection centers. The milk is immediately brought by truck to the union dairy where it is pasteurized, put into insulated tankers, and shipped to major cities or processed into dried milk, cheese, butter, and other products.

Every member of a cooperative has access to technical assistance. The package includes emergency and weekly veterinary services, artificial insemination, concentrated feeds, and seeds for high-yielding fodder crops.

Giving producers a reliable and profitable outlet for their milk and the technical wherewithal to increase production has helped raise rural income. The movement has even benefited the landless poor who often own one or two cows or buffaloes. In particular, it has enhanced the status and well-being of women, who are the traditional caretakers of livestock and the recipients of income from milk sales.

This cooperative venture has worked when many others have failed. The features which seem to have helped shape its success include the following:

- Its dedicated leadership and well-trained staff subscribe to a common principle of service to rural communities.
- Its organizational system enforces strict accountability.
- Its streamlined marketing system is suited to the commodity’s perishable nature.
- Economies of scale at the processing stage encourage collective action.
- Payments are based on fat content and are received by producers within twelve hours.
- A well-publicized and appropriate package of technical services is offered to all members.
- International aid (including food aid) has been used judiciously to help build the dairy industry.
to this type of program—sometimes meant that the "package" of improvements turned out to be incomplete or inappropriate for small farmers.

By no means all the difficulties which arose were technical in nature. Misunderstandings about the social setting, for example, led to a number of failures in programs for small-farmer credit and cooperative development. Patterns of ownership, tenancy, and land rights can also make it difficult to reach poor farmers; and the benefits of higher production may be diverted to relatively well-off landlords, merchants, and other middlemen.

Other programs help small farmers overcome the hostile physical conditions in which they often have to work. As might be expected, rural poverty tends to be particularly severe in the world's most difficult natural environments—in tropical uplands, in semi-arid regions, and in areas with poor soil (often recently cleared forest land). In such conditions, small-farmer development programs are often held back because they lack the right technical ingredients. The most common crops—pulses, upland rice, sorghum, millet, roots and tubers—have only recently begun to attract research attention. There are powerful arguments for stepping up this effort, given the high returns on past investment in research (see Chapter 6) and the fact that numerous poor people produce and consume these crops as part of their staple diet.

Despite the difficulties of assisting small farmers, the programs seem on the whole to have been remarkably successful. In many instances, farm incomes have been raised significantly and benefits widely spread; handsome returns have accrued to the economy as a whole. More programs are now being designed to simplify management and implementation, especially in Africa. This is usually accomplished by concentrating on a lead crop—as in recent cotton programs in West Africa—or on a small number of strongly complementary activities. The Ethiopian "minimum-package" program, as suggested by its title, is confined to seed and fertilizer sales and extension services. Zaire's Kasai Oriental maize program concentrates heavily on one crop plus a few support services that are central to improving productivity among 120,000 farm families.

**Agrarian reform**

A critical factor in agricultural development is the willingness and ability of farmers to improve their land by leveling, irrigating, and draining it. Farmers with secure tenure have more reason to make such investments than those with less of a stake in the land. Tenure is not an issue affecting small farmers alone, although it tends to bear heavily on them. Insecurity is caused by a variety of factors, including lack of clear title to land, lack of assurance about tenancy arrangements, instability of land rents, and—among landowners—fear of land reform without proper compensation. These questions will become more critical as countries run out of virgin land and growth comes increasingly to depend on making capital improvements to existing land.

Changing the institutional framework to encourage land improvement is generally difficult. The measures involved vary widely. They include surveying, adjudicating and recognizing land titles, consolidating small and often widely scattered parcels of land, legislating on inheritance to ensure that farms will be main-
plementing a World Bank–supported program of this kind in two of the poorest states, Maranhao and Piaui. But land reform is more often preached than practiced—which can be highly damaging since it increases insecurity rather than reduces it. Among landlords, a general fear of reform and, in particular, concern that compensation will be inadequate may discourage them from making the most productive use of their land by leasing small parcels to sharecroppers and renters. This reluctance is most common, and most harmful, among large landowners. Discussion of land reform sometimes obscures the broader issue of security of tenure and leads to inaction on all fronts. In some instances, taxing land according to its productive potential, an approach which has received relatively little attention in recent years, may achieve economic and social results similar to those stemming from land redistribution.

Rural public works

Using local resources for building and maintaining rural infrastructure makes a valuable contribution to both development and poverty alleviation. Unskilled labor can be used to construct small irrigation and drainage works and feeder roads, and to level land. Rural public works are important precisely because they can be organized at the community level. On the one hand, they are seldom done well by central government; on the other, they are too large to be done by individual families. Even with full security of tenure and favorable prices, a family farm usually cannot, for example, organize irrigation and drainage canals for a small watershed.

In view of the pressing need for rural infrastructure and the abundance of local labor in many countries, programs often seem surprisingly modest. This is partly because they require high-caliber management and careful design if they are to work well. Project selection, organization of the labor force, design and engineering standards, and financial control can all present considerable difficulties—especially as most programs are decentralized and widely scattered.

Sometimes, too, they are viewed as “make-work” schemes; the supplies and machinery needed to complement local labor may therefore be inadequately funded.

Other drawbacks include the fact that public works may sometimes benefit some individuals more than others where land is privately owned and that proper maintenance is difficult to arrange once construction is completed.

These and other problems can be overcome, however. The Maharashtra Employment Guarantee Scheme (see Box 7.3) is an example of successful rural public works; so too is Indonesia’s Inpres program. Projects of genuine social and economic value are most likely to be identified, planned, and built if rural people are able to play a decisive role in choosing

**Box 7.3 Employment Guarantee Scheme, Maharashtra, India**

Maharashtra’s ten-year-old Employment Guarantee Scheme (EGS) gives unemployed or underemployed rural workers jobs in public works projects or pays them living allowances. Blueprints for projects are kept ready for immediate use at times of slack employment. Every rural adult is guaranteed either manual work near home within fifteen days of registering or a cash allowance of Rs1 a day ($0.12) for time wasted if no job turns up.

During the five years ended March 1979, Maharashtra spent Rs2.12 billion on public works. Of this total, 53 percent was for irrigation, 27 percent for land improvement, 13 percent for roads, and 7 percent for forestry and other works. Unlike many other rural work schemes, EGS managed to combine employment generation with productive capital formation.

The table shows that over the five years from 1973 to 1978, Maharashtra’s rural unemployment declined by 21 percent, from 1.4 million persons to 1.1 million, despite a 17 percent increase in the population. Its overall unemployment rate fell by 32 percent during this period to 5.2 percent of the work force, compared with a 4 percent overall decrease for the whole country. Because agricultural and industrial growth remained sluggish, much of the improvement in Maharashtra’s employment can be attributed to EGS.

<table>
<thead>
<tr>
<th>Unemployment in Maharashtra’s rural work force (ages 15–59), 1972–73 and 1977–78</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rural work force</strong></td>
</tr>
<tr>
<td>Males</td>
</tr>
<tr>
<td>Females</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Unemployment (millions of persons)</td>
</tr>
<tr>
<td>Males</td>
</tr>
<tr>
<td>Females</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Table 7.2  Selected government food-distribution programs: Coverage, impact, and cost

<table>
<thead>
<tr>
<th>Program and country</th>
<th>Commodities involved</th>
<th>Coverage and targeting</th>
<th>Effect on income, consumption, and nutrition</th>
<th>Budget costs (percentage of budget) or revenue</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>General subsidy, Egypt</td>
<td>Wheat and wheat products, maize, beans and lentils, rice, dairy products, sugar, tea, oils, meats</td>
<td>Broad coverage, particularly in urban areas; targeted</td>
<td>Wheat and flour consumption up about 80 percent (1970-80); malnutrition and infant mortality low for Egypt’s per capita income level</td>
<td>As high as 15 percent (1975); 9 to 12 percent, with 5 to 7 percent for bread (1976-81)</td>
<td>Implicit tax of about 20 percent on producers has acted as a disincentive; subsidized foods constitute 22 percent of Egypt’s import bill</td>
</tr>
<tr>
<td>Open subsidy for wheat, flour; distribution through ration shops for other goods</td>
<td>Wheat flour (atta), rationing of sugar; subsidized flour considered inferior, resulting in some self-targeting</td>
<td>Narrow coverage; about one-third of the population, most urban, some rural in food-deficit areas; one shop per 2,000 people, but rural shops open infrequently and do not all provide atta; untargeted</td>
<td>69 percent wheat consumption of low-income groups from ration shops; 9 to 14 percent of caloric consumption of below median-income households; from ration system (1976)</td>
<td>6 to 12 percent (late 1970s); 3 to 6 percent (1980s)</td>
<td>Producer prices too low before 1977, limiting production which improved after 23 percent price rise in 1980; some evidence of padded ration rolls</td>
</tr>
<tr>
<td>Subsidy and ration, Pakistan</td>
<td>Ration books; food distributed through ration shops; quotas vary by supply availability and location</td>
<td>Broad ration shop coverage in both urban and rural areas; largely untargeted</td>
<td>20 percent of caloric consumption from rationed rice for low-income households; 56 percent of total rice consumption from ration shops, 66 percent for low-income population; rationing has been positively linked to child nutritional status</td>
<td>Central government subsidy equivalent to an average 17 percent of state budget (1973-76)</td>
<td>System of procurement favoring local farmers (varying by farm size) has provided price support and improved equity among Kerala producers</td>
</tr>
<tr>
<td>Subsidy and ration, Kerala State, India</td>
<td>Ration books; food distributed through ration shops</td>
<td>Rice, wheat, cooking oil, sugar</td>
<td>Central government subsidy equivalent to an average 17 percent of state budget (1973-76)</td>
<td>Central government subsidy equivalent to an average 17 percent of state budget (1973-76)</td>
<td>System of procurement favoring local farmers (varying by farm size) has provided price support and improved equity among Kerala producers</td>
</tr>
</tbody>
</table>

Experience also suggests that the commitment of some local resources other than manpower fosters the positive involvement of rural communities in project selection, design, and execution. At the same time, the coordination and administration of programs helps develop the effectiveness of local government. Good financial and technical control of the works is also essential.

Food security, distribution, and subsidies

The 1980 World Development Report and the FAO’s study of future agricultural growth prospects, Agriculture: Toward 2000, were both completed when the world economy was more buoyant than it is now. Nevertheless, both concluded that neither poverty nor undernutrition could be eliminated in this century, even under the most favorable assumptions about agricultural development and overall economic growth. The benefits of a sound growth strategy will flow too slowly to meet the income needs of many of today’s rural poor.

Governments and international agencies have consequently sponsored various efforts to ameliorate the harshest effects of poverty, including in particular problems associated with malnutrition and food insecurity. These efforts have mainly involved food aid, though they also include general food subsidies and low-cost rations. Vulnerable families and individuals are also being reached, usually through health programs. Some of these efforts are listed in Table 7.2.

Unfortunately, food subsidies and ration schemes are often very expensive, largely because their coverage is very broad. The poor are helped, but so are others who can afford their own food. Po-
### Program and Country

<table>
<thead>
<tr>
<th>Subsidy and ration, Sri Lanka, pre-1979</th>
<th>Commodities involved</th>
<th>Coverage and targeting</th>
<th>Effect on income, consumption, and nutrition</th>
<th>Budget costs (percentage of budget) or revenue</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ration books; food distributed through cooperatives</td>
<td>Rice, wheat flour, sugar, milk foods for vulnerable families</td>
<td>Broad ration shop coverage in both urban and rural areas; largely untargeted</td>
<td>About 50 percent of total rice consumption from ration shops; 20 percent of caloric consumption and 14 percent of income from rations (1970); very low malnutrition and child mortality for Sri Lanka's per capita income level</td>
<td>15 to 24 percent (1970s)</td>
<td>Need to distribute rice under ration led to effective system of government procurement, with some benefit to farmers</td>
</tr>
</tbody>
</table>

**Coupon system, Sri Lanka after 1979**

<table>
<thead>
<tr>
<th>Commodities involved</th>
<th>Coverage and targeting</th>
<th>Effect on income, consumption, and nutrition</th>
<th>Budget costs (percentage of budget) or revenue</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice of 9 major food commodities, rice most important; or coupons can be deposited as savings; kerosene stamps can be used for food purchases</td>
<td>Covers roughly lower-income half of population, urban and rural; well targeted; studies estimate about 10 percent of needy group not covered; about 30 percent covered not needy</td>
<td>30 percent of total rice consumption from ration shops; the 1979–81 calorie and income impact similar to that before 1979; after 1981, evidence of some deterioration in nutrition when coupon value was halved because of inflation</td>
<td>11 to 14 percent (1980–81)</td>
<td>Shift to coupon system coincided with move to full-cost producer pricing, which further increased benefits to farmers; efforts made to target other welfare and employment programs to needy as identified by means test</td>
</tr>
</tbody>
</table>

**Coupon system, Colombia**

<table>
<thead>
<tr>
<th>Commodities involved</th>
<th>Coverage and targeting</th>
<th>Effect on income, consumption, and nutrition</th>
<th>Budget costs (percentage of budget) or revenue</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition-fortified foods: noodles, biscuits, vegetable mixtures, textured protein foods; inclusion of less expensive staples being considered</td>
<td>Covers half of country geographically; well targeted; 200,000 households reached (1980)</td>
<td>Increased maternal weight in pregnancy and increased birth weight</td>
<td>Less than 1 percent (1980)</td>
<td>Local firms contribute resources for production of nutritious foods</td>
</tr>
</tbody>
</table>

### Budget Costs

- **Subjective criteria:** Income level, special needs (such as pregnancy), or family size and age composition.
- **Objective criteria:** Income level, special needs (such as pregnancy), or family size and age composition.

### Comments

- **Political support:** For these programs is correspondingly broad, making reductions in their scale or scope extremely difficult. There are other disadvantages as well. With price regulation favoring consumers, farmers' incentives are depressed. As a result, the growth of domestic food output is slowed, imports mount, and there is waste. Food crops are so important in most low-income countries that these distortions can have massive macroeconomic consequences. Subsidies, which in some countries amount to as much as 20 percent of the national budget, can dwarf agricultural investment and even undermine the government's ability to maintain public sector investment as a whole.

- **Food subsidies:** Can be designed to be relatively cheap, however. Many governments operate tightly structured, targeted programs with entitlements based on means tests or administrative procedures such as health screening. The means test and coupon system introduced in Sri Lanka in 1979 has reduced the number of participants by half and more than halved the costs of the government food ration. Coupon systems, such as those in Sri Lanka and Colombia, can define different target groups by using several criteria—income level, special needs (such as pregnancy), or family size and age composition. The administrative costs of targeting can be reduced by using automatic, self-targeting mechanisms. In countries where the poor are concentrated geographically, targeting by location can be cost-effective. Subsidized food is distributed only to certain communities or is restricted to certain types of shops that are not patronized by the relatively well-off.

- **Targeting by commodity:** Which involves changing relative prices to encourage consumption of nu-
tritious but unpopular foods, is rarely used, but shows some promise. Sorghum was sold at half the price of wheat and rice in ration shops in Bangladesh in 1979. The poor participants, particularly in rural areas, bought more sorghum, increasing the calories in their diet. The better-off participants in the capital city, however, preferred to pay double the sorghum price in order to have rice or wheat.

Better nutrition has been shown to result from food subsidy and distribution programs in several countries. China operates the largest food storage and distribution system in the world (see Box 7.4); it has eliminated famine, reduced chronic undernutrition, and lowered its child mortality rate to a level comparable to that of some developed countries. In the Indian state of Kerala, and in Sri Lanka, rations are available for both the urban and the rural poor, a feature unusual among food-subsidy programs; these efforts have raised low-income participants’ caloric intakes by 20 percent and their incomes by 15 percent.

Programs for the undernourished can also help deal with periodic fluctuations in local food supplies that might otherwise lead to famine. Small changes in output, earnings, or food distribution and prices can have dramatic effects on individual nutrition and on the local economy as a whole. Towns and cities may be marginally affected by droughts or crop failures, in the countryside, the

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**Box 7.4 Food security in rural China**

China’s approach to food security cannot easily be adapted to other settings because some of its features are uniquely Chinese. Most important, food security is built into the collective system, which ensures that production teams, brigades, and other local groups give their members first access to basic necessities. In practice, therefore, although the state ultimately guarantees food security, its direct intervention is minimal.

Within a community, basic necessities are assured mainly through the annual appropriation of collective income. Everybody receives a basic ration, even those who have earned a below-average number of “work points.” But there is a communal obligation to work; even the elderly usually find some light work to claim a share of the community income. (In practice, provision for the elderly in rural China also seems to rely heavily on the age-old tradition which holds children responsible for the care and support of their parents.) Households in temporary misfortune—for example, because of illness—go into debt to their collective (or, in some instances, buy necessities from it using income from household activities). All collectives are obliged to maintain grain reserves at the brigade and commune levels. Many communes also hold reserves on behalf of the state food agency or for livestock feed, and the total is usually enough to offset a bad harvest.

These arrangements enable the national Food Ministry to act as a residual supplier and to deal with deficit communities as units, rather than with individual members and households. The administrative savings are probably sizable. The ministry also has an overall responsibility for state procurement, processing, storage, and distribution of some 50 million tons of grain every year. These responsibilities are carried out through a nationwide network of local facilities (grain management stations) by a total staff—excluding seasonal workers—of over 2 million.

In a normal year, most collectives are required to sell grain to the Food Ministry, or pay taxes on their production. If the harvest is poor, procurement quotas and taxes may be waived or reduced; in 1979-80 the Food Ministry reported tax remittances of 2.4 million tons.

If communities are still short of food, the ministry gets involved directly. Its relief operations are triggered when it appears that, with grain reserves and income from other crop surplus taken into account, the community will not be able to sustain a distribution of at least 150 kilograms per person a year (200 kilograms per person in rice-producing areas) with the grain measured in unprocessed form.

Technically, communities usually borrow to obtain relief grain when they cannot afford to buy it. Some of the poorest areas of China need relief grain most years; however, and their accumulated debt far exceeds current income. Ultimately, need rather than ability to pay (or to repay) is the determining factor. In addition to chronic problems in the low-income, food-deficit areas, disasters occasionally plague China. For example, in 1980 the provinces of Hebei and Hubei in eastern China were hit by heavy floods in some areas and persistent drought in others. Crop losses were close to 20 percent at provincial levels, with much higher rates in some areas. These disasters prompted China’s first request to the UN Disaster Relief Organization for emergency aid.

No data have yet been released on the total number of people benefiting under the Food Ministry relief programs. But in 1979 about 12 percent of the production teams reportedly distributed less than 150 kilograms of grain per person; a further 10 percent reported distribution of 150 to 180 kilograms per person. Most of the recipients, perhaps 150 million people, would probably qualify for relief by Food Ministry criteria. The Food Ministry reported distribution of about 3 million tons of relief grain in 1979-80. If relief per person averaged 25 kilograms, these data would imply well over 100 million beneficiaries. This large number of beneficiaries, juxtaposed with the spartan supplement (the ration supplies about 1,400 calories a day), serves to underscore the point that China today is still a low-income country with a great deal of rural poverty.
effects can multiply quickly. As rural purchasing power declines, limited food supplies are absorbed by areas with higher purchasing power. Food insecurity is more a function of inadequate and uncertain income than of food availability (see Box 7.5). Wars accentuate the problem by disrupting crop schedules, destroying assets, and creating transport and communications bottlenecks.

Governments and international relief agencies deal with famines by distributing food directly. Their recent efforts have generally been effective and reduced the incidence of famines. When famines do occur, they result as much from failure to acknowledge and respond to the situation quickly as from program inadequacies. Any famine is unacceptable, however, and capacity to deal with it before its effects become catastrophic is of paramount importance. This requires:

- An effective early-warning system, together with early acknowledgment and response.
- Mechanisms for emergency procurement, whether through imports, food aid, or priority purchases of domestic supplies from prosperous areas within the country.
- Effective transport networks and distribution channels in the countryside.

Despite the need, many low-income countries lack both logistical and managerial capacity, and do not have the food supplies necessary for effective emergency relief. International support—from private voluntary agencies and official organizations, such as the World Food Program—has attempted to complement national efforts. Given the difficult conditions under which they must operate, international efforts have generally been quite successful. Their efficiency could be enhanced by building up a better response capability within developing countries themselves. Donors are beginning to offer aid for more permanent food-security systems, including improvement of ports and storage facilities and technical assistance for more efficient import procurement. Such improvements should help reduce avoidable undernutrition in future emergencies.

Most rural poverty and food security programs are relatively new and reflect the rising concern with poverty in the 1970s. To deal with the problems, existing institutions and their programs have had to be modified; in some instances new ones have had to be created. Although the programs are trying to tackle much the same problem of rural poverty, the solutions which have been adopted have been very diverse. There is no generally applicable blueprint. But experience shows that the ability to learn from mistakes and to make appropriate adjustments are what distinguish successful programs from the rest.

Learning from mistakes includes, above all, reaching a greater understanding of the problems of the poor. This means that programs should be designed and executed so as to encourage the fullest participation of local people. Local people best know their own needs and how they can be met. Cost-effective, sustainable programs that reach large numbers succeed by giving full rein to the considerable energies and dynamism of the poor.

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**Box 7.5 Famine comes from income insecurity**

Who are the victims of famines? Rarely, it would appear from a study done for the International Labour Organisation, does famine result simply from a reduction in food production and affect all people in the area uniformly. In 1943 in Bengal, in 1974 in Bangladesh, in 1973 in Ethiopia those who suffered most from famine were the landless—casual laborers employed in agriculture or providing unskilled or semi-skilled services—and pastoralists who had to trade their emaciated beasts for expensive food grain. In short, the vulnerable were those whose “exchange entitlements” were removed or massively devalued by the events preceding the famine.

It was not a decline in food availability itself that caused the famines. In Bengal in 1943 the food supply was lower than in many years but higher than in 1942 and well within a normal range of fluctuations. In Bangladesh per capita food availability was, if anything, higher in 1974 than in earlier years. In Ethiopia, on the other hand, a drought sharply decreased food supplies in a localized but by no means inaccessible area.

The mechanisms that caused marginal groups to suffer varied. In Bengal a wartime inflation debased the real value of their already low wages, which bought much less food than before. In Ethiopia, low yields caused farmers to dismiss farm servants, not hire laborers, and reduce their demand for other services. Food prices did not rise, but the poor, losing their employment, lost their source of earnings (entitlement) to buy food. Similar problems plagued the Sahel region in the early 1970s. Pastoralists saw their herds diminish while animal prices fell, and more had to be marketed in exchange for food grain. In Bangladesh a long period of flooding similarly reduced employment opportunities. Simultaneously, food prices rose and thousands starved.

Famines are therefore compatible with adequate food supplies within a country or within large regions. In Ethiopia the national supply of food did not decrease. But major groups of the poor, especially the landless, were extremely vulnerable to a sudden reduction in their earnings. In such cases, and particularly if prices rise suddenly, these are the people who starve.