

Food security and poverty in LDCs

Malnutrition persists despite economic growth and increased global food supplies. What policies can alleviate the situation over the short and the long term?

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The world has ample food. Global food production has grown at an even faster rate than the unprecedented population growth of the past 40 years. Prices of cereals on world markets have even been falling. Yet many poor countries—and hundreds of millions of poor people—do not share in this abundance. They suffer from a lack of “food security,” mainly caused by a lack of purchasing power.

Food security, though interpreted in many ways, is defined here as *access by all people at all times to enough food for an active, healthy life*. Its essential elements are the availability of food and the ability to acquire it. Conversely, food insecurity is the lack of access to sufficient food and can be either chronic or transitory. Chronic food insecurity is a continuously inadequate diet resulting from the lack of resources to produce or acquire food. Transitory food insecurity, on the other hand, is a temporary decline in a household's access to enough food. It results from instability in food production and prices, or in household incomes. The worst form of transitory food insecurity is famine.

The costs of inadequate diets to individual families and to nations as a whole can be enormous. Inadequate diets increase people's vulnerability to diseases and parasites, reduce strength, curtail the benefits of schooling and training programs, and result in a general lack of vigor, alertness, and vitality of the affected groups. Low productivity, due to inadequate “human capital,” depresses output and hence income, making it more difficult for families and nations to extricate themselves from the cycle of poverty.

The level of food security to be achieved must be determined by individual countries. Their choice will be influenced by many, often conflicting, factors. For example, cost-effective food security interventions can accelerate the rate of human capital formation required



for economic growth. But attempting to reach the entire malnourished population too rapidly may entail such large costs and losses in resource efficiency that it will impair food security in the future.

This article surveys the extent and nature of food security, and examines ways in which more food can be secured by people who lack it.

Chronic food insecurity

In 1980, somewhere between 340 million and 730 million people in the developing

countries (excluding China) had incomes too low to provide adequate nutrition. The estimate of 340 million is based on a caloric consumption that would prevent serious health risks and stunted growth in children. If the consumption standard used is enough calories for an active working life, however, the estimate of those with chronically deficient diets rises to 730 million. This higher figure is probably a better indicator of the extent of chronic food insecurity and the harm done to development by inadequate diets. About two thirds of the undernourished live in South

Asia, and one fifth in sub-Saharan Africa. In all, four fifths of the undernourished live in countries with very low average incomes (see table).

Under the rather optimistic assumption that income distribution did not worsen during the 1970s, it can be surmised that the *share* of people with inadequate diets declined between 1970 and 1980 (see chart). But, because of population growth, the *number* of people with energy-deficient diets appears to have increased under both standards of nu-

While far too many people have energy-deficient diets, the aggregate energy deficit in their diets amounts to only a small fraction of the total national food supply in many countries. In a sample of 35 developing countries, the aggregate deficit amounts to no more than 3 percent of current aggregate consumption even when the higher adequacy standard is applied. The clear implication is that the inability of people to buy food, rather than overall scarcity of food, is the central food problem.

India, Bangladesh), the basic causes underlying food insecurity can only be addressed by accelerating the growth of agriculture. The agricultural sector in these countries is so large that its neglect would jeopardize overall economic development, and with it the possibility of providing gainful employment to the growing population and the ability to provide all households with access to adequate amounts of food. Any policies that raise the incomes of the poor while increasing overall economic growth should obviously be given high priority, since they would reduce or even eradicate chronic food insecurity without imposing a cost on the economy. However, in many developing countries even under the best of circumstances, economic growth cannot be expected to proceed fast enough to eliminate the chronic food insecurity of some groups in the foreseeable future. Moreover, long-run economic growth is often itself slowed down by the deleterious effects of widespread chronic food insecurity. In these cases, policy makers may want to consider interventions that would speed up the achievement of food security for undernourished groups, without waiting for the general effects of growth to reach them.

Many national governments place a high priority on reducing chronic and transitory food insecurity, but often use measures that adversely affect economic growth and food security in the long run. These include persistent overvaluation of national currencies, large expenditures on consumer food subsidies, low procurement prices for domestic producers, construction of costly storage facilities, and the holding of excessive stocks of food grain. Such measures are often counterproductive since they result in significant economic wastage and draw resources away from more productive activities.

Most specialized interventions against chronic food insecurity involve weighing the costs and benefits of three approaches:

- Sharply targeted interventions, involving income or food transfers, with high costs of delivery and administration, but reasonably low fiscal costs;
- General consumer subsidies, which are sometimes easy to implement and do not distort producer prices, but have high fiscal costs; and
- Food supply policies, which are easy to implement and have low fiscal costs, but distort producer prices and therefore may create inefficiencies in agriculture. The appropriate mix of policies has to be determined by each country according to local circumstances.

Income transfers. In principle, transfer payments in cash or in kind to the poor, who are at high risk of food insecurity, are the most efficient way of increasing the real

Share and size of population with energy-deficient diets, 1980

Region	Not enough calories for an active working life: below 90 percent of FAO/WHO requirement ¹		Not enough calories to prevent stunted growth and serious health risks: below 80 percent of FAO/WHO requirement ²	
	Share in population (in percent)	Affected population (in millions)	Share in population (in percent)	Affected population (in millions)
All developing countries ³ (87)	34	730	16	340
Low income ⁴ (30)	51	590	23	270
Middle income (57)	14	140	7	70
Sub-Saharan Africa (37)	44	150	25	90
East Asia and Pacific (8)	14	40	7	20
South Asia (7)	50	470	21	200
Latin America and Caribbean (24)	13	50	6	20
Middle East and North Africa (11)	10	20	4	10

Source: World Bank.

Note: Numbers in parentheses are the number of countries in the sample.

¹ Intake at this standard is sufficient for a person to function at full capacity in all daily activities.

² Intake at this standard is sufficient to prevent high health risks and growth retardation in children.

³ The 87 countries had 92 percent of the population in developing countries in 1980, excluding China.

⁴ The low-income countries had a per capita income below \$400 in 1983.

tritional requirements. The largest declines—both in shares and numbers—were in East Asia and the Middle East, regions that enjoyed rapid economic growth during this period. South Asia and sub-Saharan Africa, on the other hand, had slight increases in the share of the population with energy-deficient diets, but large increases in absolute numbers.

Barring major changes in the distribution of income and in the price of food in developing countries, chronic food insecurity will probably continue to fall as a share of the population of developing countries, but continue to rise in terms of the number of affected persons in the 1980s. The changes in the 1980s are likely to be less favorable than in the 1970s, because average incomes are expected to grow less rapidly. Even modest improvements may not be realized, however, if governments in low-income countries pursue policies, which make the poor bear the brunt of adjustments needed to cope with rising budget deficits resulting from balance of payments problems.

In some of the poorest countries, however, the aggregate food supply also needs to be greatly increased to alleviate chronic food insecurity. For example, if consumption by malnourished people were increased through redistributive measures and added to the extra demand caused by population and economic growth, the required amount of food could not be supplied in such countries as Bangladesh and many African nations without significant international assistance. These countries would need to realize unprecedented growth in both agricultural production and export earnings, as well as high levels of food aid.

Countering chronic insecurity

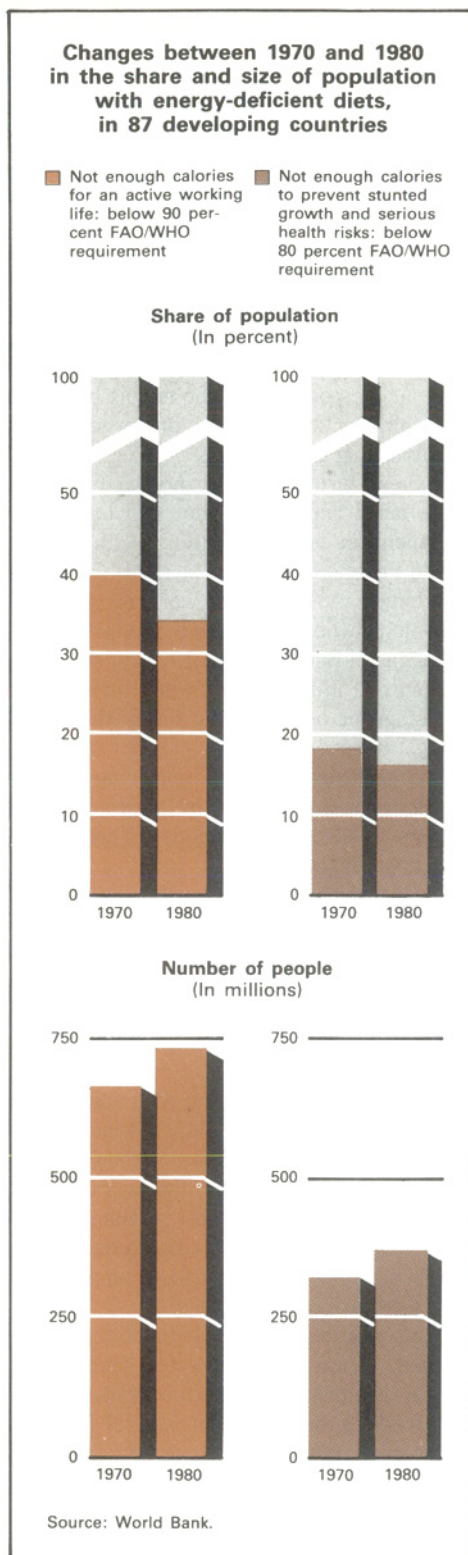
Clearly, the ultimate solution is to provide people facing chronic food insecurity with opportunities to earn adequate incomes and to assure an abundant food supply from domestic production or imports. It is now widely recognized that in countries that account for large segments of the undernourished (e.g.,

incomes of the poor and giving them the means to increase their food consumption. A well-known income transfer is the rationing of food to a target group at below-market prices through "fair-price shops," or distributing food free at health centers. Such interventions mostly aid urban dwellers and households that normally buy their food, or that have easy access to such centers. But there is no reason, in principle, why income could not also be transferred to rural households—either in cash or in subsidized rations of consumption goods or farm inputs. The difficulty with this form of intervention, however, is in avoiding "leakage" of the transfer payments to unintended beneficiaries. Efforts to direct the benefits more sharply on to the poorest will reduce the fiscal cost of the transfers but raise, often steeply, the administrative costs of the intervention, particularly in less densely populated rural areas.

Some governments have successfully raised the incomes of the poorest people through public employment programs. These are attractive because only the poorest and the most frequently unemployed are targeted for jobs. But such programs can sometimes be inefficient in transferring income to the poor for two reasons. First, they may convey little additional income to workers if the wage offered is only slightly higher than the "opportunity" wage, that is, whatever the workers could earn elsewhere. In addition, the workers may have extra travel costs in reaching distant project sites. Second, the projects may create assets whose value is much lower than the cost of producing them.

Subsidized food prices. One way to overcome difficulties in directing subsidies to the poorest and the needy is to reduce prices of selected foods to all consumers without reducing the price paid to producers. The government then finances the difference between the two prices. Even when the foods being subsidized are consumed by poor and rich alike, the subsidies tend to benefit the poor more than the rich, in a relative sense, by increasing the incomes of the poor by a higher percentage than the incomes of the rich. Moreover, the administrative cost can sometimes be much lower for a market-wide food subsidy than for an income transfer program aimed at specific target groups, and a mass subsidy reaches more of the target population.

Subsidizing food prices for all consumers is clearly more costly for the government budget than subsidizing food prices for target groups. Such policies generally require heavy involvement of the government in the wholesale food trade. The government must manage a two-tiered price scheme—a higher price to producers and a lower price to consumers—and be able to identify and keep



separate the food sold to consumers from the food bought from farmers (flour versus wheat, for example). Otherwise, the subsidized food may be misused. Farmers, for example, may find it profitable to buy grain back from the government at cheaper prices for other purposes, such as feeding livestock or making alcohol. The efficiency of consumer food subsidies varies according to the foods cho-

sen. In Brazil, for example, one dollar spent on subsidizing bread transfers about 18 cents to the low-income population; in contrast, one dollar spent on subsidizing legumes transfers about 39 cents to this group. Consumer food subsidies can be even more efficient if further selectivity in the foods being subsidized is introduced, for example, by subsidizing inferior grades normally consumed by the poor.

Food supply policies. The fundamental question about policies designed to change the national food supply (production plus imports) is whether they increase the real income and food consumption of the undernourished population. The answer depends on how these policies affect food prices and their nominal incomes.

In discussing food supply policies it is important to distinguish between foods that are internationally traded, whose prices and level of supply are largely determined by world prices and the exchange rate, and nontraded foods, whose prices are determined by domestic demand and production. The domestic supply of traded foods can be increased only by deliberate measures to increase imports or restrict exports. The supply of nontraded foods can be increased only by increasing domestic production.

Increasing the supply of a traded (imported) food will lower its price and decrease its domestic production. This will help the poor only if they are net buyers. They will be able to afford more of the food and will be encouraged to buy more because it is cheaper. These benefits can be considerable, since the poor typically spend one half to three quarters of their income on food, and only slightly less on basic staples. If the net sellers of food are low-income farmers, they will suffer through a fall in the price. If the poor are primarily subsistence farmers—that is, they are neither net buyers nor net sellers—an increase in the supply of a traded food will have little immediate effect on them.

An increase in the domestic production of a traded food need not affect its price. The increased supply can be offset by reductions in imports or increased exports. The sole beneficiaries will be the farmers producing a net surplus of the food.

Abstracting from the indirect effect on food prices of changes in income resulting from changes in production (income effects are not unique to changes in the production of the food in question), an increase in the production of a nontraded food will increase its supply and reduce its price. The net buyers of the food—often the poorest—will definitely gain. Net sellers of the food, however, might gain or lose, depending on the extent to which the lower food price is offset by increased sales and lower production costs.

The choice of interventions needs to be based on a balanced concern for budgetary and economic costs, the administrative and political feasibility of different interventions, and their expected benefits. Apart from cost considerations, the choice of proper food supply policies for food security objectives obviously depends greatly on commodity characteristics and the circumstances of the individual countries. If the poor are primarily net buyers of food—as is the case in countries with widespread urban poverty or a high proportion of rural landless—increasing national food supplies and lowering food prices is an effective way to enhance food security. If the poor are primarily net sellers of food—as is the case in many sub-Saharan African countries or in Bangladesh—food security may be enhanced by increasing food prices and by measures that lead to a substitution of domestic foods for food imports.

Transitory food insecurity

Short of outright famine, temporary disruptions in the ability of households to acquire food are difficult to quantify in the absence of data on short-term fluctuations in food consumption. Yet from what is known about the instability in international prices, food production, and export earnings during the 1970s, it can be surmised that the real incomes of a large number of households can be very unstable. During 1968–78 the coefficients of variation (the standard deviation of the difference between observed and trend values) of international prices ranged from about 20 percent for maize to 30 percent for wheat and 35 percent for rice. Variability in domestic production of cereal crops was very high during this period, with the coefficients of variation in the developing countries averaging 18 percent for wheat, 14 percent for maize, and 8 percent for rice (globally, the respective coefficients of variation were 5 percent, 4 percent, and 3 percent). Finally, the coefficient of variation of export earnings in developing countries—an indicator of a country's ability to import food—was about 15 percent, almost double the instability of export earnings in industrial countries.

Aggregate data usually hide more than they reveal about how transitory food insecurity affects individual households because increases in food production or incomes in one part of a country offset declines in another. In India in 1968–70, for example, aggregate national income, food production, and consumption were fairly stable. Yet survey data on per capita income and expenditure of 4,000 rural households showed considerable year-to-year instability. Nearly half the households surveyed experienced at least one year in which their income fell below 70 percent of their three-year average.

Famines are the most severe form of transitory food insecurity. They can have several causes, including wars, floods, crop failures, the loss of purchasing power by groups of households, and—sometimes, but not always—high food prices. A decline in the general supply of food is not necessarily a primary cause of famines. Indeed, by paying excessive attention to changes in the aggregate food supply, governments and other organizations have sometimes failed to recognize the other causes of famine.

The loss of real income better explains why famines occur and who is hurt by them. Typically, victims belong to one or several of the following groups:

- Small farmers or tenants whose crops have failed and who cannot find other employment in agriculture (for example, the Wollo Famine of Ethiopia in 1973).

- Landless agricultural workers who lose their jobs when agricultural production declines (as in Bangladesh in 1974) or who face a rapid rise in food prices when their wages are stagnant or falling (as during the Great Bengal Famine of 1943).

- Other rural workers (including professional beggars) affected by a drop in real income in the famine regions. (This is true in almost all famines.)

- Pastoralists who normally get most of their food by selling their animals. Their herds may be ravaged by the drought itself or animal prices may collapse relative to food grain prices (as, for example, in the Harerghe region of Ethiopia in 1974 and the Sahelian drought of 1973).

Famines can occur during economic booms or slumps. In Bengal in 1943, the increase in food demand, fueled by gains in urban income, inflated food prices faster than rural wages grew. In Ethiopia, by contrast, a slump (caused partly by the 1974 drought) reduced the demand for food even as food supplies declined, so prices barely rose.

Supply problems, such as those that occur in times of war, can aggravate a famine. But famines happen even when foodgrain markets are working very well. In several famines, local food prices barely rose and food was continuously available at those prices. But the victims could not buy it. They did not have the income. This underlines the need to concentrate relief efforts on groups whose real income has fallen.

Countering transitory insecurity

Governments that do not prevent transitory food insecurity run big risks. They may face the possibility of disrupting the political order, prolonging human suffering, and losing human energies essential for development. They can reduce these risks by following policies that promote stability in the domestic

supply and price of staple foods, and that provide vulnerable groups with the financial means to buy enough food as the need arises. These policies, too, must be determined with a clear consideration of their expected cost-effectiveness. In most countries the surest and probably the cheapest way to achieve price stability is through international trade. Imports or exports can offset instability in domestic production almost automatically. By using variable levies on imports or exports, for example, domestic food prices can be insulated from changing international prices. But such policies may destabilize the government's budget and balance of payments. Countries may therefore need to hold larger reserves of foreign exchange and rely more on food aid or international insurance schemes for the financing of sporadic increases in food imports, such as the expanded compensatory financing facility of the International Monetary Fund.

Governments often try to stabilize food supplies and prices through quantitative controls on imports and exports and the internal movement of foods. However, due to incomplete information on supply and demand conditions, lack of managerial capacity, and frequent political pressures from interest groups, government intervention often aggravates rather than reduces the instability of supply and prices.

Some governments also prefer to keep excessive buffer stocks. Large stocks are seldom cost-effective because of the high storage losses, low capacity utilization of storage facilities, and high interest charges on capital tied up in inventories. Countries with access to foreign exchange usually find it cheaper to stabilize prices by varying imports and exports, rather than by using buffer stocks, even if world prices are unstable.

Even if markets are working perfectly and prices are stabilized, the most severely affected groups could still lack the purchasing power to buy food. Such groups include the rural landless, whose employment and wages are severely depressed, the small farmer or herder, whose marketable surplus has been destroyed or who faces adverse terms of trade, and the artisan or urban worker whose opportunities for work have collapsed. These must be quickly identified and provided with payments in cash or in kind, or—if cost-effective work programs are feasible—given temporary employment. When resources are scarce, special programs are at least needed to preserve the nutritional status of children under five and pregnant and lactating mothers.

External assistance

So far, much of the foreign assistance for food security has sought to accelerate agricultural development and increase food pro-

duction. These are important aspects of the problem when they affect the real income of vulnerable consumers and producers. But there has been only modest progress in diminishing worldwide food insecurity, partly because of the widespread misperception that food shortages are the root of the problem. The disturbing fact is that food security problems have become more serious in many countries, despite higher per capita food production.

The international community, in supporting food security, should adhere to the following precepts:

- The lack of food security is basically a lack of purchasing power of people and na-

tions. The convergence of the objectives of poverty alleviation and of food security is thus strong.

- Food security does not necessarily derive from food self-sufficiency nor from a rapid increase in food production.

- Long-term food security is a matter of achieving economic growth with equitable distribution of benefits. Food security in the shorter run is a matter of redistributing purchasing power and resources. By choosing redistribution policies on the basis of cost-effectiveness, governments can play constructive roles in improving the food security of their citizens.

- Transitory food insecurity—in the face of fluctuations in domestic harvests, international prices, and foreign exchange earnings—can best be alleviated through measures that facilitate trade and provide income relief to afflicted populations.

International donors can assist nations to apply these principles to their particular food security strategies by helping to identify and formulate appropriate policies to alleviate food security, by providing finance to support these policies, and by improving the external trading environment. Efforts to support food security can be made in three directions. First, by

giving priority to lending directed more explicitly to the poor in low-income countries. Second, by using trade finance and other international financing arrangements for the alleviation of transitory food insecurity. Third, by better integration of food aid with financial aid.

The often-predicted Malthusian nightmare of population outstripping food production has not materialized. Instead, the world has been faced with the narrower problem of many people not having enough to eat, despite there being enough food for all. This is not a failure to produce enough food, still less a failure of agricultural technology. Its roots range from improper macroeconomic policies to the economic and political structures of local societies that inhibit the ability of many households to procure enough food. **ED**



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This article summarizes a major Bank report, *Ensuring Food Security in the Developing World: Issues and Options*, by Shlomo Reutlinger and Jack van Holst Pellekaan with help from Craig Lissner, Claudia Pendred, and Colleen A. Roberts, to be published in 1986. For ordering information, see our next issue.

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