Malnutrition: A Poverty or a Food Problem?
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(continued on inside back cover)
Malnutrition: A Poverty or a Food Problem?

SHLOMO REUTLINGER*

The World Bank

Summary. — The author discusses malnutrition as the 'silent' food problem — a poverty problem — separate from the 'overt' food problem of scarcities of food in markets. The dimension of malnutrition which is treated here is the important calorie deficit problem — a problem which is often not revealed by aggregate food consumption data. The author presents data estimating the orders of magnitude of calorie undernutrition and then discusses numerous options as direct approaches to reduce malnutrition in market economies: (a) consumer education, (b) food market intervention, (c) income earning opportunities for the poor, (d) income redistribution, and (e) target group oriented food distribution measures. The options are evaluated with regard to their cost-effectiveness. He concludes that the costs of (a–d) are prohibitively high and therefore, (e) — a programme along the lines of a food stamp programme — is the option most likely to eliminate malnutrition.

The coincidence of a world-wide scarcity of food several years ago and a growing awareness and new perceptions about the nature of widespread malnutrition in developing countries have given birth to a new myth, that the two problems — the 'overt' food problem, i.e. scarcities of food in markets, and the 'silent' food problem, i.e. malnutrition — are one and the same. Widespread malnutrition and scarcity of food in the marketplace have elements in common, but their origin and remedies are more different than alike. In this paper I intend to highlight the major differences, because only through a sharper perception about the nature of these related problems can we expect to deal with them in a realistic and effective way.

WHAT IS THE 'OVERT' FOOD PROBLEM?

The overt food problem is all about total or average food consumption, production and prices. The central concern is whether the global food supply will keep pace with the growth in demand caused by population and income growth, and whether developing countries, where most of the increase in demand is taking place, can develop their agriculture and their capacity to import food at an adequate pace.

I will not comment much here about the 'overt' food problem, basically because I agree with Professor D. Gale Johnson's excellent evaluation of the problem presented in 1975.1 World-wide, there is no perceptible danger that food supplies would not keep pace with growing food market demand at reasonable prices, at least not for the next 25 years. Events since two years ago have dealt kindly with Professor Johnson and unkindly with the conventional wisdom which prevailed at that time. Few believe today that the scarcities experienced in the early 1970s foreshadowed the beginning of an imminent trend. On the other hand, all the concern expressed over the international dimension of the food problem by Professor Johnson two years ago remains valid today. Unless the rate of economic development, agricultural, and otherwise, can be accelerated in the developing countries, the poorest and most densely populated among them might be faced with declining per capita food consumption and much higher internal food prices.

Many battles still have to be won in this race between growth in food demand and general and agricultural development in the most populated countries of the world. But I feel

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optimistic about the outcome because I believe that the problem is now generally perceived for what it is—a problem of economic underdevelopment, and not a problem of an irremovable food supply constraint. National and international attention has been drawn to the need to accelerate investment in agricultural development and to control population growth. Also, there is a growing awareness of the need for holding food stocks as insurance against unusually bad harvests. All these measures give some confidence that severe food scarcities such as we have experienced in the early 1970s need not be repeated.

WHAT IS THE 'SILENT' FOOD PROBLEM?

But what I really want to discuss here is the point that the problem of malnutrition can and should be addressed independently of the question of pessimism or optimism about the global food supply problem. I would like to convey some evidence for my belief that solving the 'overt' food problem is not sufficient (unfortunately!) nor necessary (fortunately!) to reduce malnutrition in any reasonable period of time.

The 'silent' food problem is the chronic malnutrition of the poor. Regardless of whether food markets register shortages or surpluses, malnutrition causes millions of deaths each yr. In some societies, 40% of the children born die before they reach the age of 5, mostly from nutrition related causes. Approximately 40% of the survivors suffer learning, behaviour, and work capacity handicaps due to inadequate diet and recurring illness. In short, malnutrition reduces the productivity potential of individuals and societies and impairs human capacity to enjoy the costless satisfactions a healthy and vigorous life can afford.

Malnutrition can be wholly or partly caused by poor quality of nutrition or poor health status of the afflicted population. However, in recent years nutrition scientists have reached some measure of agreement that many millions of people, adults and children, in developing countries suffer from malnutrition, not because they do not know what to eat or not even because they cannot obtain the right kind of food, but because they do not have the means to obtain enough of their accustomed diets.

Although this is by no means the only dimension of malnutrition, it is this important calorie deficit problem to which I will devote my attention.

Unfortunately, we have little direct information about the magnitudes of calorie undernutrition in most low-income countries around the world. The problem has been gauged sometimes by recording the number of countries or groups of countries in which per capita calorie consumption falls short of per capita calorie requirements for nutritional adequacy. But such estimates inspire little confidence and could be misleading, given what we know about the unequal distribution of food in market economies. For instance, we do know from extensive household surveys conducted in the 1960s in Brazil, that per capita calorie consumption in that country was in excess of requirements. But 40% of the population had calorie deficient diets and the aggregate amount of that deficit was the equivalent of 7% of the country's total calorie consumption.

Put another way, a country may have a horrendous malnutrition problem, which is not revealed by aggregate food consumption data. Moreover, aggregate calorie consumption data always underestimate the nutritional calorie deficit because they make no allowance for the obvious fact that nutritional surpluses consumed in some countries and by some income groups do not compensate for deficits in other countries and other income groups. Besides, they tell us nothing about the characteristics of the undernourished population and their whereabouts.

Yet, it is possible, I believe, to make a good guess at the orders of magnitude of calorie undernutrition with existing, though admittedly less than adequate, data. My colleague, Marcelo Selowsky and I have ventured to do so. Our results and the methodology are described in our book *Malnutrition and Poverty*, published recently by the World Bank.

I will not elaborate much on the technical aspects of the methodology we used, except to note that our global assessment represents to my knowledge a first attempt to take explicit account of the unequal distribution of food consumption among different income groups in the population. Our basic strategy consisted of first allocating the total known amount of calories consumed in four major regions among eight income groups. Then we calculated the calorie deficit for the income groups whose consumption is less than adequate.

Figure 1 illustrates the results obtained from this kind of analysis for the Latin America Region. The height of each bar in the histogram measures daily per capita calorie consumption of each group in the population. The width of each bar is proportional to the share of each
MALNUTRITION: A POVERTY OR A FOOD PROBLEM?

Fig. 1 Latin America, calorie consumption by income groups, 1965.

income group in the Region's population. Note that daily per capita calorie consumption for the total population in the Region exceeded recommended daily calorie requirements. But the population in the four lowest income groups, comprising 47% of the total population consumed less than recommended. The shaded area in the graph indicates the extent of the total calorie deficit.

Before presenting the results from this kind of analysis, let me comment briefly about the basic data and assumptions.

Regional income distributions were estimated on the basis of income distribution data of 30 countries compiled at the World Bank.

The regional per capita calorie consumption data, presented in Table 1, are weighted averages of per capita consumption in each country of the region. The country data were estimated by FAO on the basis of food balance sheets averaged over three years, 1964-66, the latest published data at the time we conducted our study.

The calorie requirements have been also estimated by FAO on the basis of demographic data for each region and WHO/FAO nutrition expert committee recommendations. These recommended requirements are consistent with body maintenance and moderate activity of adults and desirable rates of growth in children.

I have heard nutrition experts say that the WHO/FAO recommended calorie levels are too high. But others have said they are too low. We also do not know whether calorie requirements for the low-income population are lower or higher than average requirements. At least in the short run, low incomes are indicative of underemployment and lower than average body weights. This would suggest lower calorie requirements. But if underemployment is caused by low productivity potential and not only by lack of employment opportunities, people should not be left caught up in that low nutritional equilibrium trap. Furthermore, low-income groups may have higher than average calorie requirements, because they usually do more strenuous physical work and because they have a higher incidence of diseases of a kind which reduces their digestive efficiency.

Our results stand up by way of general orders of magnitude despite the wide range of potential error in the data and parameters. For instance, we examined the consequences of a range of plausible assumptions about changes of calorie consumption in response to changes in income. We observed that our determination of the size of the undernourished population remained fairly invariant. However, per capita calorie deficits, and hence the total calorie deficit, are quite sensitive to the assumed relationship between consumption and income.

MALNUTRITION: A POVERTY OR A FOOD PROBLEM?

Table 2 (overleaf) gives the extent of calorie malnutrition in a normal year in the mid-1960s. Accepting WHO/FAO recommended regional calorie requirements, approximately 1100 million people, or 74% of the total population of the developing countries in 1965, consumed less than recommended calories. The total implied deficit is on the order of 350 billion calories a day, or the equivalent of about 40 million tons of foodgrain annually. About 82% of the undernourished population resides in Asia and Africa.

Table 3 (overleaf) gives the dimension of the calorie malnutrition problem if requirements were set at 250 calories less than the WHO/FAO recommendations. The affected population would be somewhat reduced to approximately 855 million people, or 52% of the total population. But the implied food deficit would be reduced very substantially to an equivalent of 11

<table>
<thead>
<tr>
<th>Region</th>
<th>Daily per capita calories</th>
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<tr>
<td></td>
<td>Consumption</td>
</tr>
<tr>
<td>Latin America</td>
<td>2,471</td>
</tr>
<tr>
<td>Asia and Far East</td>
<td>1,984</td>
</tr>
<tr>
<td>Near East</td>
<td>2,315</td>
</tr>
<tr>
<td>Africa</td>
<td>2,154</td>
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</table>
million tons of foodgrains, annually.

What can we conclude from observing these magnitudes? The first and most significant conclusion must be that malnutrition is basically a problem arising from the maldistribution of food consumption within and between nations.

Even if we were satisfied with meeting minimal rather than recommended levels of calorie requirements, about 50% of the population in the developing countries go undernourished in an average year.

Also, as Table 4 illustrates, malnutrition is a serious problem for developing countries collectively. To satisfy the WHO/FAO recommended calorie requirement levels these countries in the four regions would have to supply their afflicted population annually with additional food equivalent to 5 to 13% of present calories consumed. It must be noted that this ‘nutrition gap’ is over and above the usually cited ‘food gap’ (the difference between consumption and domestic production), which is already quite high and expected to grow if present trends continue. The cost of this ‘nutrition gap’ is also very high when compared to total GNP. For individual countries the equivalent annual food cost could be in excess of 5% of their GNP.

The second conclusion is that the direct total calorie deficit implied by all this malnutrition is small in terms of global food supplies and economic resources. The equivalent food requirements are in the range of 11 to 40 million tons of foodgrains or a mere 1 to 3% of current world production. Clearly, the problem does not arise from a scarcity of food and insufficient agricultural supply potential. The economic cost of this calorie gap is in the range of 2 to 8 billion dollars, which is about one-tenth of one percent of the world’s annual gross product or the equivalent of New York City’s welfare budget. Clearly, malnutrition is also not an economic imperative.

People may honestly hold pessimistic or optimistic views about the population/food problem in the year 2100. Yet common sense and a few calculations like the ones I have just described should convince us all, if we are not convinced already, that contemporary malnutrition is not a question of pessimism or optimism about the race between population and food supply.

Needless to say that I regard ‘triage’-type

<table>
<thead>
<tr>
<th>Region</th>
<th>Population (million people)</th>
<th>Percent of population</th>
<th>Average daily calorie deficit (billion)</th>
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<tbody>
<tr>
<td>Latin America</td>
<td>113</td>
<td>46</td>
<td>283</td>
</tr>
<tr>
<td>Asia and Far East</td>
<td>736</td>
<td>82</td>
<td>306</td>
</tr>
<tr>
<td>Middle East</td>
<td>91</td>
<td>63</td>
<td>352</td>
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<tr>
<td>Africa</td>
<td>190</td>
<td>77</td>
<td>317</td>
</tr>
<tr>
<td>Total</td>
<td>1130</td>
<td>74</td>
<td>350</td>
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</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Population (million people)</th>
<th>Percent of population</th>
<th>Average daily calorie deficit (billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin America</td>
<td>55</td>
<td>22</td>
<td>200</td>
</tr>
<tr>
<td>Asia</td>
<td>563</td>
<td>63</td>
<td>114</td>
</tr>
<tr>
<td>Middle East</td>
<td>73</td>
<td>52</td>
<td>157</td>
</tr>
<tr>
<td>Africa</td>
<td>151</td>
<td>61</td>
<td>130</td>
</tr>
<tr>
<td>Total</td>
<td>844</td>
<td>55</td>
<td>107</td>
</tr>
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</table>
solutions, which suggest that a few hundred million people should be left to starve in order that the remainder should have enough food to live, utter and complete nonsense. Such solutions are rooted in a misconceived perception about the nature and the size of the malnutrition problem. Malnutrition is not the consequence of global food scarcity.

I regard as equally deceptive the optimistic perception which would have us believe that the malnutrition problem will disappear in the normal course of development. Current rates of growth in per capita income and per capita food supply, coupled with the prevailing patterns of income distribution and other policies characteristic of market economies, are too low to eliminate malnutrition.

Figure 2 illustrates projected changes in the size of the undernourished population under three scenarios of general rates of development through 1990. Under Scenario A per capita income in all income groups would grow at approximately the current rate of growth in per capita income in each of the world’s major regions, and per capita food supply would grow just enough to meet the demand generated by that growth of income. Our projections indicate that the number of malnourished people by 1990 would be higher than today.

Scenario B assumes that there would be about double the current growth rates of per capita income and enough growth in per capita food supply to meet the demand generated by that higher income. Scenario C assumes a more rapid growth in per capita food supply, providing for increased per capita consumption and lower food prices. Clearly, accelerated aggregate income growth and greater food availability can have a major positive impact. Although the size of the undernourished population remains high, their average daily calorie deficit would be substantially reduced. But note that even to achieve marginally positive nutrition effects from accelerated general development it would require that the income of the poorest groups

![Figure 2 Estimated undernourished population and total population, 1965, and three alternative projections, 1975 and 1990.](image)

Table 4. Calorie deficit in relation to regional consumption and GNP, 1965

<table>
<thead>
<tr>
<th>Region</th>
<th>Calorie deficit as a percentage of total calorie consumption</th>
<th>Cost of calorie deficit as a percentage of GNP</th>
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</thead>
<tbody>
<tr>
<td>Latin America</td>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td>Asia</td>
<td>13</td>
<td>4.2</td>
</tr>
<tr>
<td>Middle East</td>
<td>10</td>
<td>1.6</td>
</tr>
<tr>
<td>Africa</td>
<td>11</td>
<td>3.9</td>
</tr>
</tbody>
</table>

*Annual cereal consumption is 28, 128, 26 and 33 million metric tons in, respectively, Latin America, Asia, the Middle East and Africa. (FAO, Agricultural Commodity Projections, 1970–80 (Rome: 1971).)

†This cost estimate assumes that the calorie deficit would be made up by cereals at a retail cost of $200 a metric ton.
in the population should rise at the same rate as per capita income. Past development experience shows that this is an overly optimistic expectation for many countries.

There are, of course, good reasons why general and agricultural development should be advocated also as a solution to the malnutrition problem. There are no solutions which are politically less controversial than for national governments and international aid agencies to advocate more of everything for everybody. I do not think it is realistic to expect that general and agricultural development in the developing countries will proceed at the pace which would be required to reduce malnutrition substantially within the next 20 years. If we are at all concerned with the problem, it is necessary to ask what more could be done.

DIRECT APPROACHES TO REDUCE MALNUTRITION

I believe there are available a number of activist approaches which could be employed to eliminate malnutrition -- if the will is there and the costs are judged acceptable.

Persistence of malnutrition is a human behaviour problem -- the consequence of choices made by individuals, national governments and international agencies acting on their behalf. The undernourished population could reallocate a larger share of their meagre incomes to the purchase of nutritionally essential food. Government could institute policies to influence household decisions through incentives and education. Finally, government and international aid programmes could reorientate priorities accorded to different categories of public expenditures.

It is difficult to judge the level of national and international commitment to the goal of reducing malnutrition. But there are positive signs.

I believe that the mention of malnutrition in almost every discussion of the food problem is an expression of genuine concern. Although the often implied notion that an increased food supply would take care of the malnutrition problem is in my view incorrect, the rhetoric implies some measure of good will.

There is also a growing awareness by many governments of developing countries and their international advisors, that growth of the national product per se has done very little to alleviate misery among the masses of poor people in the world. Countries as far apart in political and social philosophy as Brazil and the Republic of China explicitly recognize that development must encompass satisfaction of basic needs, including minimally adequate nutrition, for the entire population. Also, the attention to alleviation of unemployment and involvement of large numbers of small farmers in internationally-assisted development projects are indications of a positive commitment to the alleviation of poverty and malnutrition.

Moreover, there is growing awareness that reducing malnutrition is not only a moral and political imperative. It is increasingly believed that minimally adequate nutrition, like education, is a sound and necessary investment for future growth of the national product. Economists, notably through the intellectual leadership of Professor T. W. Schultz, long ago developed the relevant human capital theory. Unfortunately, it is extremely difficult to make empirical estimates of the effect better infant nutrition today in India would have on the growth of its national product in the distant future. While we should strive to get such pertinent estimates from research, I believe that few would question the need to proceed with reducing calorie malnutrition without knowledge of the precise productivity benefits.

The main challenge then is to seek out cost-effective measures to deal with the problem. Let me suggest some relevant considerations. I will restrict my discussion to policy options which are relevant to market economies only.

I know of no way by which to compare costs in societies which are constituted on widely different philosophies. It is believed that China has managed to substantially reduce, if not eliminate, malnutrition. But little is known about the costs involved, nor do we know conceptually how costs should be imputed in a society which is constituted on radically different values. Moreover, given political realities, I do consider it unrealistic and unnecessary to advocate a change in the fundamental structure of a society just for the sake of reducing malnutrition.

A market economy strives implicitly to satisfy many human needs. While subjective choices have to be made by each society, cost comparisons of different policies to achieve a desired effect can be extremely helpful to the process of policy decision-making. The options, I will consider in some detail are (a) consumer education, (b) food market intervention, (c) income earning opportunities for the poor, (d) income redistribution, and (e) target group oriented food distribution measures. If you leave aside the pessimists or the optimists
(those who think it either futile or unnecessary to do something specifically to combat malnutrition), you will find people often advocating policies more or less in that order of preference.

Basic to any discussion of cost-effectiveness considerations is a common perception about the size of what economists call the marginal propensity of the undernourished population to spend additional income on calories. I believe there is evidence that this marginal propensity is low, somewhere on the order of 7 calories per day or 2600 calories per year for a dollar increase in annual income. Given that the cost of 1000 calories when obtained from cereals is about 7 cents, it implies that even low-income consumers spend only about 18 cents out of each added dollar of income for calories. This is a much lower figure than observed marginal propensities to spend on food. But I believe there is no inconsistency. People purchase food, not calories. When they obtain additional income above their long accustomed bare subsistence requirements, they purchase a little meat, fish, vegetables or fruits. The cost per calorie obtained through these foods is often two to four or more times the cost per calorie obtained from cereals.

Now let us consider the various policy options.

(a) Consumer education

Economists of the liberal classical persuasion usually advocate consumer education as the preferred solution. It costs so little and it minimizes interference in the economic and social system. The trouble is that it does not work. Families who already spend most of their income on least costly calories cannot be expected to do much better. It is difficult to persuade them to spend additional income on more of the same food. People who have long experience on getting along with the food they need for basic subsistence seem to have a high propensity to spend additional income first on the better things in life — a bottle of coke, an orange, or a transistor radio. You can’t blame them for not heeding nutritional education, when educated and sophisticated consumers do not live by what they know to be nutritionally right.

(b) Food market intervention

Another often advocated remedy for malnutrition is the cheap food price policy. Some governments already spend large sums of money on subsidizing a spread between the supply price of food and the price at which food is sold to the consumer. The cost of reducing malnutrition through such a policy is outright prohibitive.

From demand theory we know that consumers tend to increase their consumption of a commodity in response to a reduction in its price for two reasons. A reduction in the price of food on which they spend a goodly portion of their income is tantamount with an increase in their effective income, and as we noted earlier consumers will consume more food as their income rises. The second reason is that consumers normally increase their consumption of a commodity whose price has been lowered by more than the implied income effect. This is called the substitution effect.

Without further studies of the income and substitution effects from a food price reduction we will not know precisely by how much food would need to be subsidized in order to increase calorie consumption of the undernourished population. There is, however, evidence that the income effect dominates the substitution effect for low-income consumers, and we can venture guesses at some orders of magnitude.

I estimate that it would take an increase of income of roughly 35 dollars per capita to increase per capita consumption by 250 calories per day. For one billion people, this amounts to 35 billion dollars. If lowering the price of food also induces higher consumption through the substitution effect, the cost might be reduced to 25 to 30 billion dollars. However, this is not all of the cost. A general price subsidy which does not discriminate between the undernourished and the adequately nourished population could imply a government subsidy several times as high, depending on the amount of subsidized food consumed by the adequately nourished population. Besides the large fiscal cost involved, the general food price subsidy policy induces a very substantial increase in food consumption by the adequately nourished population as well — something a food deficit country can ill afford.

A variant of this policy is to hold down the domestic supply price. The subsidy cost is transferred from the taxpayers to farmers. But this policy curtails domestic food production, increases food import requirements, and reduces employment and income earning opportunities of the low-income rural population. On balance, this population may be worse off nutritionally than without the programme.
A cheap food price policy across the board may be preferred, of course, for other macro-economic objectives, like holding down wages or stimulating general demand, and such a policy may be administratively or politically preferred. But can poor countries afford a high-cost solution to achieve the desired nutrition objective? They clearly cannot. Food prices are rarely kept low enough through subsidies or price controls to have a significant nutrition effect.

I believe that cost-effective solutions must be sought out among policies which selectively lead to increased food purchase power among the undernourished target population.

(c) Income earning opportunities for the poor

The most often advocated solution is to provide full employment with adequate wages. Consumer sovereignty, so much cherished by neo-classical economists, would be fully preserved. The target population would not only obtain adequate nutrition, but also the psychological satisfaction of being productive and in control of their own lives. But how realistic is it to expect that any time soon a few hundred million jobs could be created or upgraded to provide the undernourished population of one billion people with enough additional income to increase their daily calorie consumption by 250 calories? As noted before, on the basis of my estimate of the marginal propensity to increase calorie consumption, the undernourished population would need an additional income of 35 dollars per capita, which for a billion people aggregates to 35 billion dollars. Even if it would take only 2 dollars to generate additional income of one dollar, it would require an investment of 70 billion dollars. This sum comes close to the total present GDP of all the countries where most of the world's malnutrition is concentrated. Aside from the cost, such a policy presumes vast structural changes in distribution of assets, land tenure and credit. Obviously, new and more remunerative jobs should be created and not only for the sale of eradicating malnutrition. But if malnutrition is to be reduced in the meantime, more cost-effective solutions must be found.

(d) Income redistribution

Income redistribution through a kind of a negative income tax is also often advocated as a solution. While it would not satisfy the objective of self-help, it would do no violence to the poor's consumer sovereignty. As I have noted already the cost would be on the order of 35 billion dollars in order to induce an increase of 250 daily calorie consumption in the undernourished population. Except for perhaps the most advanced developing countries, it is not a realistic option. In the most seriously affected countries, there just is not enough income to distribute, nor is an international annual income distribution of such magnitude in the cards. In any case, it is not a cost-effective solution.

A variant of straight income transfers sometimes suggested is the sale of food to the target population on concessionary terms. But as I have noted earlier, the low-income consumer's response to a price change is dominated by its implied income effect. Concessionary sales of food will therefore have almost the same effect as a straight income transfer, and the cost of increasing calorie consumption through the sale of food on concessionary terms will be nearly as high as it would be by a straight income transfer.

(e) Food stamp type programmes

We have seen that all the policies discussed so far are cost ineffective. Any realistic assessment of the likely resources to become available should compel us to seek out much more cost-effective measures. Fortunately, a food stamp type programme has the potential for meeting this objective. In principle, such a programme aims at channeling a dollar's worth of public expenditure into a dollar's worth of increased consumption of the desired food by the undernourished population. In practice, it is much more difficult to design and implement cost-effective programmes, but the potential solution, I believe, lies in this direction.

To the extent that a food stamp programme could be implemented with 100% efficiency, the cost to increase daily consumption by 250 calories for one billion people could be held to a total of approximately 5 billion dollars. If my estimate of the marginal propensity of the target population to spend additional income on calories is nearly correct, the cost of attaining the same effect through any of the other policies would be at least nearly fivefold this cost.

An effective food stamp programme has a purchase requirement of food stamps equivalent to the value of food purchases by the participant before the programme. The ex-
change value of the food stamps for the designated food would need to be set high enough to provide the participant with a nutritionally adequate diet. With an effective programme, the cost is just equivalent to the value of the food needed to fill the nutritional gap. Any diversion of food stamp benefits to other uses, either at the store or outside, would obviously decrease the cost effectiveness of the programme.

Food stamps were first proposed in 1936 by Dr. Fred Waugh, an economist working for the US Secretary of Agriculture, Henry Wallace. I am familiar with all the criticisms levelled at the food stamp programme as it evolved over the years in the United States. But I believe that with all the imperfections, there is still good evidence that from a nutritional point of view the food stamp programme is more cost-effective than an equivalent income transfer. The existing programme in the US deliberately trades off nutritional benefits for greater general welfare benefits, reflecting, correctly in my view, the belief that the United States can afford to provide its low-income population not only with better nutrition but also with the means for satisfying other basic wants. However, given the dimension of the malnutrition problem, world-wide, the design of a more pure form of a food stamp programme, which channels income transfers into consumption of calorie efficient foods, may be a clear necessity.

It must be recognized, of course, that a food stamp type programme is implementable only to the extent that undernourished people actually purchase their food. This is a much larger proportion of the total undernourished population than is generally believed. There is often an incorrect presumption that the low-income population in rural areas consists mostly of small farmers. The precise statistics are unknown, but I believe that families owning farms which are large enough to potentially supply them with enough food, but not too large to supply them already enough food, constitute no more than 50% of the undernourished rural population. Given that at least 30% of the undernourished live in urban areas, it is reasonable to assume therefore that 65 to 70%, a clear majority of all undernourished people, acquire their food through purchases in the market.

For the minority of the undernourished population, the small farm families who largely consume the food which they produce, a food stamp programme is not feasible. But cost-effective solutions for this group must also seek out interventions which channel a large proportion of incremental income gains into increased food consumption. This might be best achieved by promoting more food production for home consumption. Alternatively, if expanding production for sale can be shown to be clearly more advantageous, special measures might be taken to induce farmers to use their income gains for the purchase of calorie efficient foods.

**SOME FINAL POLICY CONSIDERATIONS**

Let me now sum up and make a few more remarks about relevant international policy considerations. To leave no misunderstanding, I did not intend to imply that chronic undernutrition is the only food and nutrition problem requiring public intervention. Investment in agricultural growth in food deficit and surplus countries alike, food stocks as insurance against bad harvests and many aspects of qualitative malnutrition involving specific nutrient deficiencies and target groups are real and important problems deserving equal attention.

I have concentrated on the distributional dimension of the food problem and how it affects malnutrition, because I believe this to be one of the least understood and documented aspects of public policy. By any measure, calorie undernutrition affects the lives of hundreds of millions of people in the developing countries. The severity of the problem oscillates from year to year with the fortunes of global and national food supplies and economic performance, but it is a chronic problem, irrespective of good or bad harvests.

Clearly malnutrition is not inevitable. The incremental amount of food needed to eliminate calorie undernutrition is small relative to existing and potential global food supplies, and the cost of the calorie deficit is small relative to the size of the world’s economic resources.

But malnutrition is not likely to go away without extraordinary efforts requiring the commitment and resources of the seriously affected countries and the international community. It is primarily a problem of unsatisfactory income distribution within and between countries. Even the most ardent proponents of *laissez faire* would not contend that economic progress will of itself provide for alleviation of poverty and malnutrition in any foreseeable future.

Policies to expedite general economic and agricultural development and commodity stabilization, justifiable on economic efficiency grounds, should of course be implemented to
the fullest extent. Progress along these lines will have direct benefits for the undernourished population and will provide the resources to augment the inadequate food purchasing power of low-income groups through special publicly-financed schemes.

I have presented some evidence that the usual palliatives suggested to reduce malnutrition through redistribution schemes -- consumer education, subsidizing general expansion of food production, cheap food price policies, creating more income opportunities for the undernourished population, and income distribution -- are not cost-effective policies for reducing malnutrition. Even if some or all of these policies were justifiable on other than nutrition considerations their costs are prohibitively high. It is therefore unrealistic to expect that these policies could be implemented to the extent required to reduce malnutrition effectively in the foreseeable future. I believe that a programme which embodies the principles of a food stamp programme, i.e. a programme which channels all or nearly all public expenditures designated to the reduction of malnutrition into higher food consumption by the undernourished population, can be cost-effective and should be pursued until such time that poverty will have been eliminated in fact, not just in theory.

But even the most cost-effective programme to combat malnutrition is far too costly to be implementable by the developing countries left to their own resources. The most cost-effective programme would require a budgetary cost on the order of 5 billion dollars per year to alleviate the problem. We further noted that about 70% of the problem is concentrated in the poorest countries. Countries like India and Bangladesh already have a difficult time in maintaining an adequate rate of growth of food production in proportion to the growth of market demand for food. They cannot be expected to bear the fiscal and foreign exchange cost of aiding a large proportion of their population to augment their inadequate food purchases.

With aid from the rich countries, it is possible, however, to rid the world of the worst manifestations of malnutrition and poverty. Provided that the countries in whose borders the undernourished population lives are willing to initiate cost-effective programmes, I believe it is realistic to expect that additional foreign aid for this specific purpose could be mobilized.

Food aid has an important place in this malnutrition eradication task. In food deficit countries, filling the nutrition gap without additional food imports would be impossible without raising local food prices. Such countries could benefit from food aid without any fear whatsoever of reducing incentives to domestic food production provided that the food aid is channeled into added consumption by the undernourished population.

If I had to sum up my perspective in one sentence, I would say that the malnutrition is a poverty problem which can be effectively tackled, if solutions are based on a realistic assessment of food consumption patterns of the undernourished population and the financial and economic costs of public intervention. The United States alone is currently spending 9 billion dollars for domestic food consumption supplementation programmes. Should not the international community promote and finance on a commensurate scale cost-effective food assistance programmes to eliminate the nutritional hunger transcending national boundaries?

NOTES


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