

## Basic Human Needs and The Green Revolution

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The so-called "green revolution" in Asia provides an important example of the shortcomings of certain contemporary criticisms of rural development projects. The following paper outlines the growth of dissatisfaction with traditional development strategies which has led to the current emphasis on "basic human needs,"

and shows how this emphasis, while important, can lead to improper conclusions if carried to extremes.

During the 1950s and 1960s, capital transfers and technical assistance to the less developed countries were directed primarily toward a variety of physical infrastructure projects as well as the support of national institutions concerned with different aspects of development. In the rural sector this included the construction of fertilizer plants, the building of roads and power distribution networks, and the promotion of agricultural research and extension programs. By the end of the 1950s, however, there was an awareness that even in countries with impressive growth records the benefits from development were frequently very unevenly distributed. Direct measures of well-being related to nutrition, education, and health frequently showed little or no progress insofar as the poor were concerned.

The major cause of this failure was held to be the inability of smaller farmers with low levels of income and wealth to take advantage of the opportunities presented by new feeder roads, irrigation systems, agricultural technology, and extension and credit schemes. Due to the high cost of these new services, only the larger farmers were able to exploit them. In addition, government policies often favored larger over smaller farmers, and political realities did not permit this situation to be easily changed.

One result was the "new directions" mandate, appearing in the U.S. Foreign Assistance Act of 1973, which directed the Agency for International Development to be more responsive to the needs of the poor majority by focusing less on large-scale capital transfers and more on food production, rural development, nutrition, population planning, health, education, public administration, and human resource development. Special emphasis was placed on enhancing the capacity of the poor for self-help and involving them as active

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participants in the development process. Added later to this focus on productive opportunity was "the explicit objective of making it possible for as many people as possible to achieve a minimally acceptable standard of living on a sustainable basis within a reasonable period of time."<sup>1</sup>

At the same time, the World Bank was also moving to attack more directly the problem of absolute poverty. Robert McNamara, President of the World Bank, during his address to the Annual Meeting of the Bank and the International Monetary Fund in 1973, referred to absolute poverty as "a condition of life so degraded by disease, illiteracy, malnutrition, and squalor as to deny its victims basic human necessities."<sup>2</sup> Following this speech, there was an important shift in emphasis by the Bank in its lending program. Less attention was paid to promoting economic growth and more to satisfying basic human needs.

The concept of "basic human needs" has received a great deal of attention in recent years. The objective of this approach, according to Paul Streeten, a leading advocate, is "to provide opportunities for the full physical, mental, and social development of the individual. This approach focuses on mobilizing *particular* resources for *particular* groups, identified as deficient in these resources, and concentrates on the nature of what is provided rather than on income."<sup>3</sup> Major emphasis is placed on supplying adequate food, shelter, clothing, safe drinking water, sanitation, public transport, and health and education facilities directly to the poor. It explicitly rejects the "trickle-down" approach, whereby the poor are supposed to benefit indirectly from overall economic growth.

The problem with the basic human needs approach, in its most extreme form, is that it shifts attention away from developing the productive base required in the long run to support a minimally acceptable standard of living on a sustainable basis. With this approach, proposals to strengthen agricultural research institutions or to invest in major physical infrastructure such as irrigation, rural roads, and electric power become controversial because of their high capital cost and technical assistance demands, and, above all, because of their failure to directly benefit the poor. AID itself has recognized that this attitude can be counterproductive: "Yet, these kinds of projects, appropriately designed and implemented, can be a vital step in bringing cost-reducing and production-increasing technology to farmers, and hence higher incomes to the rural poor and more abundant and lower cost food to consumers,"<sup>4</sup> many of whom are also very poor. Furthermore, an expanding production base and the

1. AIDTO CIRCA-168 of 6 April 1978, "Program Guidance for FY 1980," p. 5.

2. Robert S. McNamara, "Address to the Board of Governors," Nairobi, Kenya, 24 September 1973.

3. Paul P. Streeten, "Basic Needs: Premises and Promises," *Journal of Policy Modeling*, 1, 1979, pp. 136-46.

4. Agency for International Development, *Agricultural Development Policy Paper*, pp. 7-8.

resulting increase in tax revenues are essential if national governments are to meet the recurrent expenditure requirements implicit in public programs designed to meet basic human needs. "In other words, to be sustainable, a development strategy in support of the provision of basic human needs requires broad-based economic growth in which the widespread productive participation and benefit of the poor is an essential feature."<sup>5</sup>

The "green revolution" in the less developed countries of Asia would seem at first glance to be an ideal mechanism for satisfying one of the foremost of basic human needs, while also satisfying AID's recommendations regarding broad-based economic growth. Not only has it resulted in expanded production of foodgrains, but the neutrality of its technology with respect to farm size has facilitated participation by small farmers. Yet the introduction of new, high-yielding varieties of wheat and rice, the centerpiece of this agricultural revolution, has been fraught with controversy since its inception in the mid-1960s. Essentially, this controversy has been based on the belief that larger, richer farmers have benefited disproportionately from innovation while smaller farmers and the landless poor have become increasingly impoverished. Paul Streeten has even argued that: "An improvement in only the productivity of, say, poor farmers may not raise their earnings. It may be reflected only in lower food prices and benefit urban food consumers. But even when higher productivity is fully registered in higher earnings, the income approach has serious limitations. Personal income which is earned by an employed worker or self-employed farmer or artisan is sometimes an inefficient way of meeting basic human needs. . . ."<sup>6</sup> Advocates of the basic human needs approach thus place their highest priority on development actions which directly satisfy the basic human needs of the target population and tend to ignore those whose beneficial effects are more indirect. In light of this attack on the green revolution, it is useful to review some of the results of its first fifteen years of experience. While there continues to be dispute over some issues, a number of conclusions are generally agreed upon.<sup>7</sup>

First, the new technology appears now more than ever to be neutral with respect to scale. Neither farm size nor system of land tenure have been important constraints on the pace of adoption of the high-yielding varieties or on the growth of farm productivity. Although small farmers have been somewhat slower in adopting the new seeds, this lag has generally been overcome within a

5. Agency for International Development, *A Strategy for a More Effective Bilateral Development Assistance Program: An A.I.D. Policy Paper*, March 1978, p. 10.
6. Paul Streeten, "From Growth to Basic Human Needs," *Finance and Development*, 16(3), September 1979, p. 31.
7. An excellent survey of the empirical evidence concerning the distributional effects of the green revolution is found in Vernon W. Ruttan, "The Green Revolution: Seven Generalizations," *International Development Review*, 19(4), 1977, pp. 16-23. Much of what follows is based on this survey.

few years after the seeds have been introduced. The technology is amenable to both capital- and labor-intensive methods of production, and the choice between these is determined more by the existence of government policies favoring mechanization than by any intrinsic technological characteristics.

Second, the introduction of the new varieties has generally led to an increase in the demand for labor in the area of production. This has usually resulted in greater use of labor per unit of cultivated land and in higher real wages. In some cases, there has been a growth in tractor mechanization to relieve labor bottlenecks.

Third, the share of income going to landowners has been growing relative to that received by tenants and laborers. This has accentuated relative income disparities even though those at the lower end of the income distribution have gained absolutely.

Fourth, there has been a widening of wage and income differences between regions. An important characteristic of the green revolution is that the most impressive gains have been achieved in the regions where water supply is assured, primarily through irrigation, and where the institutional infrastructure for the distribution of inputs, such as fertilizer and insecticides, is already in place. The new technology is much more applicable to these areas than to those which depend on uncertain rainfall or have inadequately developed input delivery systems. As production has expanded, moreover, relative prices of wheat and rice have tended to decrease, injuring farmers in less favored regions who are unable to take advantage of the new high-yielding varieties. In most instances, however, these producers do not depend very heavily on sales of cereals for their livelihood, and many, especially the poorer farmers, are net purchasers of foodgrains who benefit from lower cereals prices.

Fifth, the major benefit to the poor from the green revolution has probably been due to the decline in relative prices of foodgrains which has resulted from increased production. This has permitted and encouraged substantially greater food consumption by people at the bottom of the income scale. Even where, for other reasons, food prices have not actually decreased, the growth in output associated with the green revolution has softened the impact on the poor of food price increases.

In summary, small farmers and landless workers in areas where the green revolution has successfully been introduced have undoubtedly gained — although probably not as much as large farmers and landowners. Consumers in both urban and rural areas have also unquestionably benefited. The only people who may have lost are farmers in less favored regions who have witnessed a decline in cereals prices.

This analysis points to an important limitation of the basic human needs approach. Although the approach may be useful in pointing to the importance of ends rather than means in alleviating poverty, it offers few guidelines as to how