Book Reviews

John W. Mellor and Gunvant M. Desai (eds.). *Agricultural Change and Rural Poverty – Variations on a Theme by Dharm Narain.* Baltimore & London: The Johns Hopkins University Press. 1985. xix + 233 pp. Illustrations: bibliography; index.

It is fashionable in some intellectual circles to deride the trickle-down theory, technological change, and the Green Revolution as tools of the haves to exploit the have-nots.[1] In a worthwhile book, drawing especially on extensive data for India, several distinguished analysts from various countries examined sources of rural poverty with special attention to the role of technological progress and the trickle-down theory.

The book honours and builds on the ideas of the late Dharm Narain, an Indian economist known perhaps more for the richness of his hypotheses than for the depth of his analysis. Narain earlier found that rural poverty in India was inversely related to agricultural productivity and public works employment and was directly related to nominal food prices. According to Narain's analysis, other things being equal, rural poverty in India was diminishing over time.

In *Agricultural Change and Rural Poverty,* analysts build on Narain's findings mainly from the Indian perspective but draw on data and experiences from other countries as well. Issues under scrutiny include: (1) how to define poverty, (2) the validity of the "trickle-down" and other theories relating to poverty alleviation and income distribution, and (3) the relevance of the Indian experience to other countries.

The most widely used measure of poverty is a simple head count of those persons in families with incomes below levels supplying basic needs. Analysts supplemented this measure by Sen's Index which accounts for the extent of poverty within the population below the poverty line (see the chapter by Ahluwalia) and by calorie-consumption measures (Bardhan; Rao *et al.*). These measures give quite different

[1] A frightening example of such thinking is from a seminar of scholars, bureaucrats, politicians, and others (including the Minister of Agriculture) at the Delhi School of Economics in 1966. The consensus was for prohibiting entry and use of new crop varieties and to ban the spread of genetic stocks of dwarf materials available at research stations. See David Hopper, "Distortions of Agricultural Development from Government Prohibitions" in T. W. Schultz, ed., *Distortions of Agricultural Incentives.* Bloomington: Indiana University Press. 1978. pp. 69–78.

estimates of the incidence and probable causes of poverty. For example, Rao *et al.* found that, other things remaining equal, an area having a higher percentage of urban population was associated with a higher incidence of poverty by the calorie-consumption measure but with a lower incidence of poverty by the income measure. By all measures, the incidence of poverty in India had varied greatly over time; the upper bound of poverty seemed to be diminishing over time while the lower bound was diminishing little, if at all.

With the exception of selected cross-sectional special cases, high rates of agricultural output growth were associated with low poverty in all empirical evidence presented (see the chapter by Mellor and Desai, p. 198). High levels of fertilizer use and irrigation also were associated with lower levels of poverty in India. Such findings belie the Marxian contention that industrialization and technological advance polarize and immiserate the peasantry, and, instead, supports the trickle-down theory which holds that increasing productivity is a rising tide that eventually lifts all "boats" – though not in equal absolute-income increments per person. To be sure, these results are only for India. However, data showing comparable income shares (especially in lower income brackets) in numerous countries with quite different mean income levels also support the trickle-down theory.

Several authors noted that high population growth raises poverty. The fact that in some developing countries high population growth and agricultural growth occurred simultaneously with increasing landlessness and poverty perhaps explains why some previous analysts mistakenly concluded that improved productivity caused poverty. Considering that most of the developed countries rarely sustained agricultural output increases of two percent per year for extended periods, it is indeed impressive to observe agricultural output growing at nearly double this rate for some years in a number of developing countries. The factor share for labour is unlikely to be more than .6; hence, agricultural labour income increases only about .6 (4) = 2.4 percent annually even with agricultural output growing by 4 percent annually. Income per capita falls because labour income rises more slowly than population. But without agricultural productivity growth, immiserization of the landless would have been speeded.

Institutional and social factors play a key role in poverty. Analysis indicated that high poverty was associated with high proportions of the population composed of landless and near-landless people, of low castes and tribes, and of female-headed households. Land reforms of the 1950s were judged to have raised productivity in India, but the authors stressed that further land reform would have limited capacity to increase agricultural productivity or to reduce poverty. Poverty will be less and income more equitably distributed if production functions were made more homogeneous within and among regions through irrigation, drainage, and other infrastructure development. The public sector frequently must play a role in such efforts.

This book makes a compelling case for obtaining greater agricultural output by shifting the supply curve to the right through investment in agricultural research, extension, and other improved inputs rather than by arbitrarily raising product prices. Narain and subsequent analysts make the case that this strategy not only is efficient in generating future output at low cost, but also is equitable: lower farm- and food-prices especially help the poor who must purchase food. But shifting the supply curve through education, research, and extension is a slow process requiring great patience and care. A valuable lesson from this book is that raising of economic efficiency by such means and reducing of poverty are not necessarily conflicting objectives.

I have no quarrel with the major conclusions of this book, but note several shortcomings which are more nearly problems of omission than those of commission. The book gives too little emphasis to (1) advantages of allowing agricultural and food prices to be set by markets based on opportunity cost (border prices), (2) the role of human-resource investments in raising agricultural and national productivity, and (3) the value of balanced farm-nonfarm development.

Mellor makes the case that because food is a principal consumption good for low-income people, and because employment is a principal source of income, alleviation of poverty depends on keeping food prices low and generating rapid growth in income. Agricultural price changes have a stronger impact on the poor as consumers than as producers. While this conclusion highlights the inefficiency and inequity of holding food and agricultural prices above market-determined levels, it would be most unfortunate if the conclusion is used to justify "taxing" of agriculture by holding prices below market levels! My estimates of supply response in Pakistan indicate that the long-run agricultural output is quite responsive to price and that adoption of high-yielding varieties of rice and wheat is speeded by a favourable price environment. Thus, farm- and food-prices can be too high (as emphasized in this book) or too low to provide necessary incentives. As a general rule, it is unwise for public policy to hold prices above or below market-determined (border price) levels for extended periods.

While markets can be relied upon for most pricing and exchange-rate decisions, the market fails to provide adequate agricultural research and extension (R and E) to increase productivity. One problem is inability of private firms to recover costs of R and E which have features of a public good. Being neither rival nor exclusionary, public goods are underproduced by the private sector alone. High risk and economies of size also preclude dependence solely on the private sector for R and E. A serious problem in many small developing countries of Africa and elsewhere is that most of the benefits of R and E from a given country are realized outside its borders. Such developing countries under-invest in R and E for the same reasons for which private firms under-invest. Governments of such countries frequently resort to price supports to "do something" for agriculture, although such supports are inequitable and inefficient, and reduce national income.

The authors fail to stress human-resource development which, like increasing productivity in agriculture, is a necessary but not sufficient condition to reduce poverty. Basic schooling has been found to have a favourable pay-off in developing countries. It helps people to cope with economic disequilibrium, which is continually generated in the developing countries characterized by rapid improvements in inputs through R and E. Education as well as direct public programmes to break down discrimination by race, class, religion, or sex can speed development and reduce poverty. Health care and family planning clinics can help to raise the quality of human resources.

Finally, the authors of this book give too little attention to the role of the private non-farm sector in alleviating rural poverty. One strategy to hold food prices down is to restrict the prices of agricultural inputs supplied by the private non-farm sector. Indeed, some countries restrict the prices of steel, cement, and other industrial products for this reason. Such restrictions and other disincentives to private industry limit the growth in output and jobs in the non-farm sector. That reduces opportunities for persons released from agriculture to find remunerative employment elsewhere. I have stressed that the increased efficiency and standard of living in the United States was to no small extent made possible by the creative synergism of the farm and non-farm sectors. Non-farm industry provided improved production inputs and consumer goods to agriculture, while agriculture provided food, fibre, labour, and markets to the non-farm sector. The incidence of poverty in American farming has been reduced from high levels (50 percent as recently as the 1950s) to near that in the non-farm sector (about 15 percent in poverty) mainly by raising non-farm earnings of persons on small farms. Developing countries which have kept their markets open both internally and externally have experienced the most rapid progress in raising of income and reducing of poverty in all sectors. Developing countries which have emphasized self-sufficiency and import substitution often have had disappointing progress – the recent visible example being the Philippines.

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