

Reducing Poverty and Hunger in India : The Role of Agriculture

*Montek S. Ahluwalia**

India's strategy for reducing poverty and hunger has always placed a great deal of importance on the agricultural sector, reflecting the fact that 70 percent of the population live in rural areas and the overwhelming majority of them depend upon agriculture as their primary source of income. The focus of attention has of course changed over time.

Early Focus on Food Self Sufficiency

In the 1960s India was deficient in foodgrain production and dependent on imports of wheat, financed by PL480 assistance **from USA**. Understandably, the focus of Indian policy in this period was to increase foodgrain production with a view to ensuring food security. This objective was successfully achieved by the spread of the Green Revolution in the 1970s, beginning with wheat and then expanding to rice. This achievement must count as one of the major success stories in development, considering that influential groups such as the Club of Rome, in the early 1970s, had despaired of India being able to feed its growing population.

Agricultural Growth for Poverty Alleviation

In the 1980s, Indian policymakers shifted their focus from food self sufficiency to generating additional income in rural areas as a means of tackling the problem of poverty, which was concentrated in rural areas. Acceleration of agricultural growth, with a special focus on improving the position of small farmers and extending the productivity revolution to non-irrigated areas was seen as a critical part of the strategy for poverty alleviation. This effort was supplemented targeted anti poverty programs to address the needs of vulnerable groups who may not benefit sufficiently from general agricultural growth. India achieved considerable success with this approach in the 1980s. Growth of agricultural gross domestic product (GDP) accelerated to about 4.7 percent in the 1980s, compared with only 1.4 percent in the 1970s. This, agricultural growth, together with the beginning of economic reforms in the nonagricultural sector, pushed up the growth rate of overall GDP to around 5.8 percent in the period 1980-81 to 1989-90 compared with about 3 percent in the 1970s.

India's growth was disrupted at the start of the 1990s by a major balance of payments crisis which led to the adoption of an extensive process of structural reforms. It took time to regain momentum and it was only in 1993-94 that the economy got back on track, clocking an average growth rate of 6.8 percent in the three years 1993-94 to 1995-96. This acceleration in growth in the post reform period led policymakers to set a more ambitious GDP growth target of 8 percent a year for the Ninth Plan period (1997-98 to 2001-2002), to be supported by a growth rate of 4 percent a year in agriculture.

The projected growth of 4 percent per year in agriculture was clearly inline with the average growth of 3.8 percent achieved in the period 1990-91 to 1996-97.

However, actual performance since the mid 1990s has been disappointing. Agricultural growth slowed to 2 percent a year in the Ninth Plan period, and overall economic growth was only 5.5 percent, well below the 8 percent target. Since agriculture accounted for about 25 percent of GDP, the shortfall of more than 2 percentage points in agricultural GDP growth compared with the target accounts directly for a shortfall of about half a percentage point in GDP growth. If the indirect effects of more rapid agricultural growth on other sectors are taken into account, the total impact on GDP growth may have been as much as one percentage point.





These shortfalls were known, when the Tenth Plan (covering the period 2002-03 to 2006-07) was formulated, but it was assumed that the poor performance of agriculture was due to temporary factors such as poor monsoons and depressed agricultural commodity prices in world markets following the East Asian meltdown. The Tenth Plan therefore adopted the same targets of 8 percent growth in GDP

and 4 percent growth in agriculture. Experience in the first three years of the Tenth Plan period has sounded some alarm bells. GDP growth has averaged about 6.5 percent, but agricultural GDP in these years (2002-03 to 2004-05) has grown by only 1.1 percent per year. The loss of dynamism in agriculture explains most of the shortfall in aggregate GDP growth.

Slower growth in agriculture also has direct implications for poverty reduction in rural areas. Official figures suggest that the incidence of poverty fell from 36 percent in 1993-94 to 26 percent in 1999-2000. The comparability of these numbers has been questioned because of recent changes (ostensibly improvements) in the methods for measuring consumption in household surveys, but there is a broad consensus that if corrections are made to ensure comparability, the percentage of the population in poverty has declined significantly, though less than in the official figures. However, even the official figures show less decline than what had been targeted, and this is undoubtedly a reflection of the slowdown in agricultural growth. Slow growth in agriculture is also at the root of growing evidence of distress in the farming community. Surveys show that a large percentage of farmers want to leave farming because they find it is no longer sufficiently profitable. The uncertainty associated with farming has also increased and farmers lack effective means of insuring against such risks. There are larger market uncertainties associated with new crops and poultry because of greater vulnerability because of falling ground water levels. There is evidence of increased indebtedness arising from the inability to cope with risks.

Recognizing these problems, the Government has undertaken a comprehensive review of the strategy for agriculture in order to come up with a new deal for agriculture and the rural economy in general. Remedial action will be needed on several fronts including increased public investment in irrigation and rural roads, better management of existing irrigation systems and of water resources in dry land areas, a strengthened agricultural research system and more effective extension, improvements in the production and distribution of certified seeds, improvements in the credit delivery system, and innovative steps in marketing and contract farming to support the diversification of Indian agriculture.

Irrigation

Water is a critical constraint on raising agricultural productivity and much of the success of the Green Revolution came from improved productivity in areas of assured irrigation provided through canals or (much more significant) through ground water utilization. The scope for expanding irrigation through large and medium scale projects has yet



to be fully exploited. Out of the total of 59 million hectares that could be irrigated through such projects only 40 million hectares have been irrigated. The slow pace of exploitation of irrigation potential is due to lack of resources in state governments and the tendency to spread available resources thinly over too many projects. Additional public investments in this area are therefore essential for early utilization of the potential.

Effective maintenance of the existing system of canal irrigation also suffers because the irrigation departments of the states lack resources. This in turn is because water charges are kept too low, covering only 20-25% of the operations and maintenance cost of the system in most states. Poor maintenance leads to loss of water through seepage, with the result that water use efficiency is very low – around 25 to 40 percent instead of 65 percent that should be attainable. Low water charges also encourage highly water intensive crops at the upper end of the canal network, leaving tail-end portions starved of water.

The solution lies in rationalization of water rates to ensure adequate financial resources to cover maintenance and resort to participatory irrigation management to give farmers a stake in the operation and maintenance of the system. Some interesting experiments in these have promise. Maharashtra has recently established a Water Regulatory Authority to set water charges in a non-political manner. Several states are also experimenting with involving water user associations (WUAs) in the operation of the canal systems. Ideally the WUAs should be empowered to collect water charges and to retain a portion of the collection to maintain the portion of the distribution network operating in their area.

Ground water utilization played a major role in expanding irrigation in the 1980s but uncontrolled exploitation of groundwater has led to serious depletion of the water table in many parts of the country. Overexploitation is encouraged by the policy of massive under pricing of electricity for agricultural use, with a few states having made electricity for farmers completely free. Even where it is not free, the charge for electricity is a fraction of the average cost, and is not based on metered use. Instead there is a fixed charge for presumed usage, based on the capacity of the pump, an arrangement which implies that the marginal cost of electricity for pumping ground water is zero. Under pricing canal water and electricity are clearly highly distortionary, given the need to conserve water use. They are also distributionally unfair because the benefits of under priced water accrue disproportionately to upper end farmers whereas under priced power enables those able to afford larger pumps to lower the water table denying water to farmers who can only afford shallow wells.

The investment requirements of irrigation are massive. Completion of all unfinished projects alone is estimated to cost approximately US\$ 20 billion. In addition, provision must be made for new irrigation projects (large, medium and small), which together will require about US\$ 45 billion. The total requirement is therefore about US\$ 65 billion.

Water Management in rainfed areas

About 60 percent of India's cultivable area will remain dependent on dry land farming even after all irrigation potential is fully exploited. Productivity growth in these areas is obviously critical for rural income growth and poverty alleviation, and it depends critically upon better moisture conservation and the development of varieties suited to dealing with moisture stress.

Schemes for water retention, moisture conservation and groundwater recharge have been implemented for many years in India but with mixed results. Experience suggests some pointers for the future. Greater use of technology inputs can help a great deal. Satellite mapping by the Indian Space Research Organisation (ISRO) has been particularly helpful in planning watershed management schemes to achieve optimal results. It is also important to adopt a holistic approach. For example, if deforestation problems upstream are not tackled, water retention structures downstream will quickly silt up. Community participation is critical to impart ownership and ensure an acceptable distributional outcome. In the past, these multiple factors were not effectively integrated into watershed development schemes. Now a

National Rainfed Area Authority has been proposed to help coordinate the work of different implementing agencies.

The cost of treating rainfed areas to ensure optimum use of available water is approximately Rs.10,000 per hectare and the untreated area is about 80 million hectares, yielding a total cost of approximately US\$20 billion. If this amount is added to the cost of irrigation development and the target to be achieved over a 10-year period it would require a doubling of public investment in irrigation.

Other Inputs

Increasing agricultural productivity also depends on the efficient delivery of several other inputs. The quality of seeds and planting material needs to be greatly improved, and this calls for strengthening the research effort to make it more effective. Two expert committees have recently reported on how to restructure the agricultural research system to make it more results oriented and their recommendations are under consideration. The system for producing and marketing certified seeds of existing varieties at reasonable prices also needs to be improved. Seed replacement rates in most parts of the country are only one-third to one-half of what they should be, a situation which reflects partly a lack of knowledge of the importance of seed replacement and partly also a lack of availability of reliable seeds.

There is evidence that the use of fertilizers is at present highly imbalanced suggesting that scientific application of fertilizers holds potential for raising productivity. Nitrogen fertilizers are oversubsidized compared with phosphorus and potassium fertilizer. The structure of fertilizer subsidies should be rationalized to avoid excessive and wasteful use of nitrogen fertilizers. Lack of knowledge of micronutrient deficiency in the soil is also a serious problem. There is need for much more extensive soil testing to encourage balanced application of nutrients needs. Underlying these problems is the deterioration of the extension services, which makes it difficult to disseminate best farming practices. Strengthening the extension system therefore needs special attention.

The government has also identified credit to farmers as a critical area for corrective action. The public sector commercial banks are being pushed to provide credit to agriculture and have responded commendably. However, the cooperative credit system which was meant to be the backbone of agricultural credit, has become financially weak. Part of the problem has been the politicization of cooperative institutions as a consequence of interference by state governments. The central government is considering ways of reviving the cooperative credit system by recapitalizing the cooperative banks provided state governments agree to changes in the system of governance that would ensure professional management of cooperative banks without state government interference.

Agricultural Diversification

India's future agricultural strategy must also be oriented to the need for agricultural diversification. India's foodgrain production capacity has increased significantly over the years and there is evidence that household consumption patterns are changing away from foodgrain towards higher value crops such as vegetables, fruits, milk, eggs, etc. Future growth in agriculture must come from diversification into these non-food grain areas and this will pose a special challenge because marketing these perishable products is much more complicated than marketing food grains.

Horticulture development is currently constrained by poor marketing arrangements. The gap



between prices received by the farmers and those paid by urban consumers is large, reflecting inefficient marketing arrangements. Horticultural produce is typically collected from farmers by market agents, who sell it organised markets established under the Agricultural Produce Marketing Acts. Unfortunately these markets are controlled by a few traders and operate on highly non transparent basis. Facilities for grading and handling are poor and methods of price discovery in the markets are nontransparent. Wastage is high owing to poor logistics and the absence of cold chains. The net result is much lower realisation by the farmer.

It is necessary to amend outdated laws restricting the establishment of markets to allow cooperatives and private entrepreneurs to set up modern markets with grading facilities, cold storages and transparent auction procedures. Half a dozen states have already amended their existing laws on agricultural marketing to allow such markets to be established and a dozen others are in the process of doing so. These changes are being resisted by those who control the existing structure but this opposition will weaken over time.

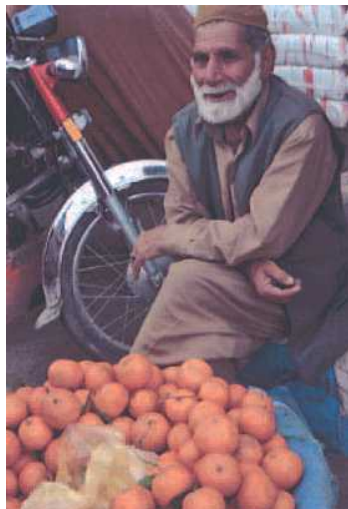
Contract farming is another innovation that has been introduced in many states and could accelerate diversification. India's laws on agricultural land do not allow corporate bodies to purchase land and operate large-scale farms – a national policy to prevent displacement of a large number of small farmers. – but corporate buyers who know what is needed in export markets, in high end domestic markets or in agro-processing, can engage in contract farming to procure high quality produce. Buyers select areas suitable for the crops they are interested in and organize farmers to produce these crops under contract, while providing planting material of the right quality and technical supervisory. The process enables the farmer to eliminate marketing risk while allowing the corporate buyer to ensure quality supplies by selecting planting material, and provide access to scientific advice on disease and other types of stress.

The development of agro-processing will be a spur agricultural diversification and the government is paying special attention to this area. At present, the proportion of India's agricultural output that is processed is very small compared with that in most developing countries and the demand for processed food is bound to increase as incomes rise. There are several obstacles to the more rapid development of food processing. Taxation structures often discriminate against food processing because processed food is the first stage for application of indirect taxes and the absence of tax rebate on taxes paid on inputs means the effective tax on value added is very high. Another impediment is the reservation of certain categories of products for small scale production. The absence of a modern food processing law has meant that this sector is governed by multiple laws, making it difficult to operate effectively. An Integrated Food Processing Law has been introduced in Parliament to replace and the passage expected in the current year will make a qualitative difference to the operating environment.

Targeted anti-Poverty Programs

While efforts to increase agricultural productivity and thereby increase farm incomes and employment are a major instrument for poverty alleviation, they will need to be supplemented by special targeted program aimed at improving the welfare of vulnerable groups in rural areas. Employment programs in rural areas have been the most important of these anti poverty programs and India has a long history of such programs. Building on this tradition, a Rural Employment Guarantee Act has been enacted which provides assurance of up to 100 days of employment at the minimum wage to each household in rural areas wishing to





make use of it. The employment would be provided on projects chosen by the elected village councils and the guidelines specify that top priority should be given to irrigation and water management schemes. Unlike earlier employment programs, this scheme includes a guarantee in the sense that if employment cannot be provided, unemployment compensation will be provided at least 25 percent of the wage. Although the program open to each household, actual demand for employment is expected to be limited to households below the poverty line. The coverage of the Act will initially be implemented to 200 of the most backward districts (about one-third of the total districts in the country). Together with other special programs relating to provision of housing for the poor, old age insurance, and schemes for supporting self employment, this program will provide an element of social

security that should help to reduce poverty.

The Role of Public Investment

An important implication of the new agricultural strategy is that it involves a substantial increase in public investment. This is an area where past trends need to be reversed. Public investment in agriculture began to decline in the 1980s, but initially the decline was offset by the fact that private investment in agriculture was increasing. Since the mid 1990s private investment in agriculture has stagnated while public investment has continued to decline. It is essential to reverse these trends, especially for public investment in irrigation and water resource management. It is also essential to increase public investment in rural roads and rural electrification. Success in these areas will stimulate private investment and contribute to a revival of growth momentum in agriculture.

** Montek S. Ahluwalia is Deputy Chairman of the Planning Commission, Government of India.*