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Agricultural Performance in India

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AGRICULTURAL PERFORMANCE IN INDIA*

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Agriculture in India accounts for about half of its national income, and provides employment to over 70 percent of its workforce. Despite the early emphasis on rapid industrial growth, agriculture is still over four times more important than industry as a proportion of national domestic product. As a result, the performance of the industrial sector and the economy as a whole is closely associated with the performance of the agricultural sector. This association arises mainly from the prices of raw materials like cotton and jute, and those of the wages goods like grains and oilseeds. These prices influence the level of costs, profits and savings in the industrial, banking and other services including government sectors, besides in the household sector. The price levels of these agricultural commodities in turn are dependent on how rapidly their supply can be increased. In a land scarce economy like India, technological change is the prime engine of growth in their supply, because aggregate output responds rather feebly to price. Moreover, market prices themselves would provide

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whatever incentives there are to the supply of agricultural commodities. This is because the demand for these commodities being relatively income elastic and price inelastic in the early stages of development would sustain the prices that are remunerative enough to increase their supply. These observations are particularly applicable to foodgrains^{1/} which account for 65 percent of the value of agricultural output in India. Rice alone accounts for nearly 46 percent. In terms of area, foodgrains still account for three-fourth's of the cultivated area. Area under crops like tea, coffee, chillies and spice and condiments which earned close to 60 percent of India's agricultural export earnings constitutes barely 2 percent of the cultivated land. Agricultural exports as a percentage of agricultural output in India unlike in many low income countries is very low; it being only 3 percent.

In the four decades prior to 1950, net national product (NNP) grew at less than one percent per annum. NNP from both agriculture and nonagriculture also increased at the same rate. Foodgrains production in the seven decades prior to 1950 grew at less than 0.5 percent per annum. Population during this period increased at 0.67 percent per year. Against such

^{1/} In India, foodgrains account for a major portion of total expenditures and exhibit sharply different marginal propensities to consume across income classes. These characteristics will maintain for countries with higher incomes than India if the subset of food items is defined sufficiently more broadly than foodgrains. Foodgrains refer to both cereals and pulses. Rice, wheat, jowar (sorghum), bajra (spiked millet), maize, ragi (finger millet), barley and small millets form the cereal group.

miserable past performance from 1951 to 1974, the annual compound growth rates of NNP, NNP from agriculture and NNP from nonagriculture were, respectively, 3.1, 2.2 and 3.8 percent. During this period the rate of increase in foodgrains production was 2.84 percent per year, a level which adequately covered the population growth rate of 2.1 percent per annum. In recent years, the country has witnessed a spectacular increase in foodgrains production; it being 5.7 percent per year during 1974-75 to 1976-77.

Despite such better growth rates, weather induced short-run fluctuations in foodgrains output and, hence, in other aggregate economic trends still continue to persist. In 11 out of 28 years from 1951, foodgrains production was below the trend level. Similarly, once in every five years, cereals production would deviate from the trend level of production by more than ± 9 percent. Corresponding numbers of the deviation from ± 6 to ± 9 percent, ± 3 to ± 6 percent, and less than ± 3 percent are 4.4, 3.2 and 3.7 years, respectively. A redeeming feature is that the peaks and troughs in successive years have been at higher levels.

Among the various constraints to agricultural growth in India, the most binding one is probably the water supply. Given the high degree of technical complementarity between moisture and nutrients, irrigation is a key input to accelerate and stabilize land productivity, besides the use of fertilizers and the high yielding seeds. Moreover, it also augments the

supply of cultivated land by promoting multiple cropping.^{2/} Presently, about 22 percent of net sown area^{3/} is irrigated as well as multi-cropped.^{4/} The country has a potential to irrigate nearly 60 percent of it's net sown area.

Yet another constraint to agricultural growth relates to the nature of available new technology for rice and millets. Unlike wheat, imported technology is unlikely to provide a solution for increasing rice production because it's success depends on many environmental factors. This is also true of the new varieties of sorghum, bajra, and maize which are largely grown under rain-fed conditions. Indian scientists are still struggling to evolve suitable technology for these grains for different soil-climatic conditions of the country.

The third set of constraints to agricultural growth emanate from non-neutral to scale^{5/} character of the institutions like tenancy, extension, research, credit, marketing,

^{2/} Multiple cropping here refers to the planting of successive crops on the same land throughout the agricultural year.

^{3/} Net sown area refers to the physical area sown in which each hectare is reckoned as one regardless the number of times it is sown.

^{4/} The index of multi-cropped area (122) for India compares unfavorably with those for Bangladesh, the Philippines and Korea, which ranged between 134 and 147, and for Taiwan which stood at about 180.

^{5/} Non-neutral to scale here means that the transactions for services and which goods of these institutions tend to concentrate on those who are relatively less risky and/or large in size.

etc. Some of the illustrations of this feature are: the extension and research funds tend to concentrate on crops like sugarcane and cotton for which evolving and transferring new technology is relatively less risky; extension agents may concentrate their efforts on large and/or less risky farmers to transfer new technology; owners of land may prefer relatively larger tenants than the smaller ones; formal credit agencies may concentrate their services on larger and/or less riskier farmers. Such feature of the rural institutions is caused by both the economic and non-economic factors. Imperfections in the markets often lead to the gap between profitability and effectiveness of the private entrepreneurs and those of the society. Public policies are often introduced to close this gap. But paradoxically some of the policies tend to exacerbate this gap. Illustrations of such policies can be found in the tenancy and usury laws, inappropriate price of irrigation water, credit, and financial services, inappropriate instruments of financial intermediation, restrictions on the interregional movements of commodities, and inappropriate price of rice and wheat procured by the government. Such policies lead to disincentives to the farmers and the decision makers in the rural institutions and thereby hinder healthy interface between them.

These apparently inconsistent policies get pursued due to a genuine difficulty of determining appropriate price and non-price policy instruments which would help reduce the gap

between the private and social profitability and/or producers' and consumers' welfare. This difficulty aggravates for some of the "quasi-public" and "public" goods and services in whose case the market forces fail to reflect their true scarcities. Markets for many goods and services needed for promoting rapid growth are either non-existent or imperfect and un-unified since time immemorial. Under these conditions, only those researches that apply economic theory to the entire economy rather than an individual sector provide some guide to correct distortions.

Public policies in India have over time attempted to ease each of the above mentioned constraints. For example, the share of public outlay on irrigation and flood control in the total outlay for agriculture increased from about 50 percent until the late sixties to about 57 percent since then. The corresponding numbers for agricultural research and education are 0.45 and 2.40 percent. These figures for explicit subsidies for the purchase of farm inputs and for supporting the development of rural institutions are about 15 and 9, and 18 and 12 percent, respectively. Implicit interest rate subsidy on rural credit averaged around 5 to 7 percent until 1973-74 and 1974-75 when the worldwide oil crisis accelerated inflation. Even in such abnormal years such subsidy remained under 1.4 percent of the national income. This was possible because of the periodical upward revisions in the interest rates. In

the two years that followed the unprecedented price hike, the rural borrowers have on an average, paid an implicit interest rate tax ranging from 2 to 5 percent. Another illustration is that the restrictions on inter-regional movements of grains have now been discontinued. Similarly, since the late sixties procurement price for wheat purchased by the government has adequately covered the cost of production of this commodity. For rice, though this price has remained lower than it's production cost, the gap between these two has narrowed over time. These results would change significantly if only variable instead of both fixed and variable costs of production of these commodities are compared with the procurement price. The preceding changes in policies have a potential to unify markets and ease the problems arising from various sources of market imperfections. Such changes with appropriate modifications need to be sustained and strengthened so that the objectives of growth and removal of unemployment and the absolute poverty^{6/} can be realized.

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Such poverty is defined as an inequality in the distribution of minimum caloric requirements.

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