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ON INDIA'S AGRICULTURAL GROWTH

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SUMMARY

An examination of recent agricultural growth shows that India's performance has not been all that unsatisfactory. Throughout the period 1950-64 the annual rate of growth in crop output exceeded the average rate of growth of population. However, this growth was grossly inadequate to meet the full food consumption demand. Hence reliance on imported food. The task of meeting the growing food deficit is a challenging one and the nation has rightly recognized it. The expansion of land under arable use has been an outstanding source of agricultural growth in India. The experience of Israel and Japan suggests that land reforms have been followed by the application of high yielding seeds, chemical fertilizers, pesticides and fungicides on a massive scale to achieve remarkable increases in crop yields. India, in contrast, is only going through the process of completing land reforms. Among the problems created by it is the possible emergence of small holdings. Land reforms in India uphold social justice and act more as a rehabilitation measure intended for the landless than a production-oriented change. The small farms may, however, enable fuller utilization of family and other so-called redundant labour under which no shift of labour from farm to factory would be essential. Minor irrigation schemes constitute a source of labour utilization which has a high yield potential. Though absolute shortages of high yielding seeds, chemical fertilizers and pesticides and lack of farmer response to the economics of fertilizer consumption are highly distressing, there lies no alternative for India. Field tests have shown that very high yields are feasible provided the inputs and plant nutrients are supplied. What the country needs is determination to achieve the yield revolution.

SOME ASPECTS OF THE MEASUREMENT OF AGRICULTURAL GROWTH IN INDIA

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SUMMARY

An attempt has been made to work out the production estimates for foodgrains, cotton, jute, sugarcane and oilseeds for 1965-66 on the basis of 'best fit' function out of linear, exponential and quadratic functions fitted to the time series data for the period 1952-53 to 1964-65. The level of these production estimates have been compared with the assumed base level of production given in the Draft Fourth Plan Report. It has been suggested that production estimates based on trend line approach should be critically examined in the light of "production potential estimates" worked out on the basis of inputs of various resources.

A STUDY OF THE GROWTH RATE OF PADDY (RICE) OUTPUT IN A REPRESENTATIVE VILLAGE DURING 1950-65

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SUMMARY

It is generally agreed that rapid increase in the agricultural output can be brought about only through increasing the productivity of land in the country. It has been observed that between 1949-50 and 1961-62 productivity in the case of foodgrains has risen at an annual rate of 1.8 per cent in the country. This is only the all-India average. Many areas in the country have not been witnessing such increase in productivity.

A study of growth in a representative village of an area reported to be suffering from a declining tendency in the yield rate and of the problems in the process of the growth of output was undertaken. The village (*i.e.*, Kharadiha) under study is situated in the Nilgiri Block-I in the Balasore district, Orissa. Out of the total number of 28 households in the village, the farmer-households (numbering 12) in the size-group of 5-15 acres were taken up for study. After taking into account the total paddy yield of these households in 1950 and in 1965 it has been seen that in each case of the 12 representative farmer-households there has been a fall in the total rice yield from their land holdings between 1950 and 1965. There has been a fall in the average per acre yield of these land holdings to the extent of 20 per cent between 1950 and 1965.

This decline in output appears to be more unfortunate when the fact of the use of improved local varieties of paddy seeds by the farmers is taken into account. The non-responsiveness of improved seeds in raising the output of land can be explained from the standpoint of unscientific seed collection practice, absence of regulated water supply facility, low level of manure use and the vagaries of nature.

It has been found that the check-embankments in the village do not contain regulatory systems for a regulated water supply. The farmers mostly use cow-dung as manure. Here again there has been inadequate use of manure. The average per acre use of cow-dung manure has come down to 3 to 4 quintals in 1965 as against 5 to 6 quintals used in 1950. All the farmers have gone on collecting seeds from the grains of the successive harvests since their first adoption of the nucleus improved paddy seeds. Moreover, throughout this period (*i.e.*, from 1950 to 1965) the farmers witnessed several natural calamities in the shape of floods, untimely and inadequate rainall and pest invasions. In the present context of the need for increasing foodgrains production it is, therefore, necessary to carefully analyse the problems of each of such areas and to adopt appropriate steps for not only arresting the declining tendency but also for securing an upward trend in the yield rate quickly.

CHOICE OF CRITERIA TO MEASURE AGRICULTURAL GROWTH

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SUMMARY

This paper attempts to analyse some well established criteria to measure agricultural growth. It however does not suggest any statistical formulae to measure the same. Criteria which represent different dimensional approach to measure agricultural growth in general are (i) production, output or yield rate and productivity rate in physical terms; (ii) farm income (*i.e.*, gross, net, and farm business income per capita or per acre); (iii) marketable surplus vis-a-vis distress sales, and procured deficit; and (iv) employment to agricultural workers.

Dividing Indian agriculture into two sectors, (*a*) subsistence sector and (*b*) commercial sector, suitable criteria have to be used to measure their growth. In the subsistence sector, normal incomes are inadequate even to offer quantitatively adequate diets. With lower farm prices, standards of living and maintenance of land and equipment deteriorate. Tribal agriculture based on primitive methods is a good example of subsistence sector in agriculture. To judge the relative importance of the two sectors, two indicators can be applied : (*a*) the numerical preponderance of subsistence farmers and (*b*) the share contributed by this sector to total agricultural output. The main characteristics of the subsistence agricultural sector include, among other things, (*i*) the phenomenon of distress sales, (*ii*) smallness of marketable surplus, (*iii*) producers' preference for food crops, (*iv*) static crop pattern, (*v*) low crop intensity and (*vi*) traditional methods of farming. The criteria to measure agricultural growth in subsistence sector therefore include (*a*) production, output or yield and productivity rate, (*b*) self-sufficiency, (*c*) employment opportunities to excess agriculture labour force, and (*d*) adoption of new technology in farming.

The commercial sector of agriculture is distinguished, among other things, by following characteristics : (*i*) modern methods of farming, (*ii*) high crop intensity, (*iii*) changing crop pattern based on relative profitability, (*iv*) capital intensity, (*v*) specialization on one or few selected crops, (*vi*) high farm income and short turnover, (*vii*) maximum marketable surplus and minimum distress sales, (*viii*) high rate of productivity and yield rate and (*ix*) low cost of production per unit.

Government seed multiplication and experiment farms and private small vegetable farms do not fall in either of the two categories listed above because the farmers apply latest improved agricultural technologies but do not aim at maximizing income by themselves; and the latter are more labour intensive but high income yielding farms. Rarely only the small vegetable farms of the suburban areas are found capital intensive in terms of the use of chemicals, better seeds and pump irrigation. However labour intensive characteristics of these farms still persist.

The growth of the commercial sector in agriculture can be measured on the criteria, namely, (*a*) agricultural production, output yield and productivity rate, (*b*) income, (*c*) marketable surplus, and (*d*) adoption of new farm inputs. The Planning Commission, Government of India, various States, agricultural economists, researchers and other individual experts in this field, have relied upon either of the above criteria during the last 15 years, without probing into the merit of one over the other. It can be concluded that although various criteria have different dimensional approach to measure agricultural growth, productivity criterion can help only little to measure the growth of the subsistence sector of Indian agriculture as it is difficult to impute the value of farm owned factor cost (*e.g.*, labour) in the light of little or no opportunity cost. Similarly all criteria hitherto chosen by various persons/experts to measure the growth of agriculture will do well except that of income criterion. This is a deceptive criterion due to mischievous play of money price.