



Concept of Agricultural Productivity in Karnataka: A Clarification

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Abstract

In recent years many attempts have been made to define the connotation of agricultural productivity and a considerable amount of literature exists on this subject. Productivity is not a synonym of 'fertility'. It is generally used to express the power of agriculture in a particular region to produce crops without regard to whether that power is due to the bounty of nature or to the efforts of man. On the other hand, fertility denotes the ability of soil to provide all the essential plant nutrients in available form and in a suitable balance for the plant growth.

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Introduction

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Agricultural productivity may be defined as the ratio of the index of total agricultural output to the index of total input used in farm production. It is measure of the efficiency with which inputs are utilized in production, other things being equal. According to Dewett, "Productivity expresses the varying relationship between agricultural output and one of the major inputs, like land or labour or capital, other complementary factors remaining the same....." It may be borne in mind, that productivity is physical rather than a value concept. The connotation of agricultural productivity engaged the attention of many economists at the 23rd Annual Conference of the Indian Society of Agricultural Economics. Some economists suggested, that the yield per acre should be

considered to indicate agricultural productivity. A number of objections were raised against this view because it considered only land which is just one factor of production while other factors are also responsible, therefore, it was arbitrary to attribute productivity entirely to land and express it per acre of land. It was suggested, for instance, that productivity could also be measured in terms of per unit of labour and different regions compared on that basis. It was pointed out further, that the average returns per unit of scarce resource does not depict the true picture, therefore instead of it, the marginal returns per unit of the scarce resource should be considered. This definition appears to be more meaningful than others, but gives rise to a lot of practical difficulties.

After a thorough discussion, it was generally agreed that the yield per acre may be considered to represent the agricultural productivity in a particular region, and that other factors of production be considered as the possible causes for the variation while comparing it with the other regions. Pandith has stated the connotation of productivity in these words, "Productivity is defined in economics as the output per unit of input..... the art of securing an increase in output from the same input or of getting the same output from a smaller input". He further suggests, that increases in productivity, whether in industry or agriculture, is generally the result of a more efficient use of some or of all the factors of production, viz., land, labour and capital. According to Saxon basically, productivity is a physical relationship between output and the input which gives rise to that output. Horring defines the term productivity, which it is generally used rather broadly to denote the ratio of output to any or all associated inputs, in real term.

There are many different concepts of productivity, and still more ways for computing it. The Chairman of the International Commission on Agricultural Typology, Prof. Kostrowicki, invited different views on this problem by sending a questionnaire to over 100 scholars throughout the world, which embodied the following two questions:

1. What methods, of measuring intensity of agriculture should be applied in typological studies of various orders?
2. What methods, measures and indices should be used to define land, labour and capital productivity of agriculture in typological studies of various orders?

About fifty Geographers and Economists from all over the world responded and suggested various approaches to the measurement of agricultural intensity and productivity. The Chairman of the Commission while evaluating the different views pointed out, that a special study for testing various methods and techniques to be used in the studies of various scales were needed.

Productivity of agriculture so far has been looked at from different points of view, such as productivity of land, labour and capital. These are the best known partial productivity measures.

a. Productivity of Land

Attention may specially be focussed on the productivity of land, because it is the most permanent and fixed among the three conventional categories of inputs (land, labour and capital) and in recent times has assumed special importance with the population explosions. Land on regional or unit basis expresses yield of crops in terms of output, and from a national point of view, it is desirable to secure the employment of the greatest number of persons. Productivity of land is obviously of primary importance in countries with a high density of population. Where land resources are limited, the principal means of raising production to keep pace

with the growth of population and the demand for improved diets is by raising yields per hectare.

Raising the productivity of land, however, does not mean only raising the yields of individual crops. It encompasses the whole output of a farm or country in relation to the total area of farm land, and may be raised also by changing the pattern of production toward more intensive systems of cultivation or towards higher value crops. The productivity of land may be increased by raising multiple crops in a year on the same land as the farmers of Japan, China (Taiwan), or United Arab Republic are doing. It may be increased also by progressively changing land from low-value crops to high-value crops.

Here a distinction must be made between the concepts of measurement of agricultural output in terms of calories (or, some other measurement of food values), and in terms of money values. For example, if in a certain region land is shifted from cereals to potatoes the output per hectare in terms of calories of human food is likely to be increased, but its productivity in terms of money value may be changed up or down according to the relative prices of cereals and potatoes. Again shifting of land from main crop potatoes to early season potatoes or to luxury vegetables may well increase its productivity in money terms, but will almost certainly reduce it in terms of calories. In developing countries with dense and fast-growing populations where food is in short supply, the first need may be to maximize the volume of the total output in terms of calories.

b. Productivity of Labour

Whereas the productivity of land is of primary importance as a determinant of the total level of food and agricultural production, the productivity of labour is mainly important as a determinant of the income of the population engaged in agriculture. The productivity of labour is a somewhat more complex concept than land productivity. It may be simply expressed by the hours of work needed to produce, e.g., a ton of wheat or cotton. But except where mainly monocultural agriculture is practiced such measurement have a limited meaning, and more commonly labour productivity is measured by the total agricultural output per unit of labour.

Labour input may be expressed as the total number in the labour force or, in order to take into account the intensity of labour, as the number of man-hours worked in agriculture. Similarly, the total agricultural output may be taken as the gross farm output, or it may be taken as the value added by labour and other factors in agriculture, i.e., the value of fertilizers, pesticides, fuel and other inputs from outside the agricultural sector is subtracted from the value of the output in order to determine the net contribution of agricultural sector. The more refined systems of measurement, in particular value added per man-hour, are of importance chiefly in economically advanced countries where it is intended to compare labour productivity in agriculture with that of other occupations, or where it is necessary for social purposes to compare the incomes and productivity of workers in agriculture with those in other occupations. They are of less importance in developing countries where there is commonly an abundance of farm labour, and where farm workers are often seasonally employed or underemployed except at times of peak labour demand, e.g., at harvest.

Labour productivity in agriculture has two important aspects. First, it profoundly affects national prosperity, i.e., the national income; secondly, it principally determines the standard of living of the agricultural population. National prosperity in the economic perspective is largely synonymous with the high output per man-hour. Therefore, if a country intends to increase its prosperity it needs: (a) to encourage technical assistance and improvement to the labour population, which help to increase productivity in the agricultural economy, and (b) to stimulate a continual transfer of labour from low productivity to high productivity regions. So far as

raising the farmer's standard of living is concerned, there are two ways: either he may be paid more than the prevailing regional or world prices for a given amount of work, or the steps can be encountered to raise his output, e.g., productivity from the same resources. Output per man can be improved in the agricultural economy: (i) by giving each farm worker more land and livestock to look after, and (ii) by making each unit of land and livestock capable of yielding a bigger output.

c. Productivity of Capital

Productivity measures of capital are particularly complicated to compute and difficult to interpret. This is largely because of both diversity of farms, and the purpose for which capital may be utilized in agricultural production process. It is generally utilized for the purchase of land, for land improvement, land reclamation, drainage, irrigation purposes, livestock purchase, feeds, seeds, fertilizers, agricultural implements and machinery, crops protection chemicals etc.,

Measurement of agricultural productivity depends upon conceptually consistent measures of aggregate agricultural output and input. The concept of inputs in productivity studies includes the resources committed to agriculture by the farmers. These inputs are subjected to control by the decisions of the farmers under the framework of government's policies. And these inputs may be classified as labour and tangible capital (including intermediate products which are purchased annually from the non-farm sources, such as fertilizer and processed feed and seed). Land, building, machinery, pesticide, livestock and purchased production services are tangible capital inputs. Choice of inputs mainly determines the increase in agricultural productivity with due regard to the qualities of inputs in a relative sense and the techniques and skills which are utilized in production process.

Stamp (1960) while attempting to measure crop productivity per unit area emphasized, that area differences in productivity are the result partly of natural advantages of soil, and partly of farming efficiency. Farming efficiency refers to the properties and qualities of various inputs, the manner in which they are combined and utilized in production.

In the United States, various hypotheses about the causes of increase in agricultural productivity have been advanced. For instance, Henry has mentioned, that it is primarily the result of an unusual abundance of land and natural resources. Loomis and Barton suggest, that real cause of increase in productivity has been new knowledge and technical change, and such closely related forces as changing relative prices, increased specialization, increased size of farm operation, changes in institutional structure of education, credit, transportation, processing and the economic activity, etc.

Conclusion

From the above it is clear that many attempts have been made to define the agricultural productivity and considerable amount of literature exists on this subject. There are many different exists on the subject. There are many different concepts of productivity and still more ways for computing it. Productivity of agriculture so far as has been looked at from different private of view, such as land, labour and capital. There are the best known partial productivity measures.

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