



AGRICULTURAL PRODUCTIVITY IN MAHARASHTRA (INDIA)

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Abstract

Agriculture has progressed a long way in India from an era of frequent droughts and vulnerability to food shortages, to become a significant exporter of a diversified basket of agricultural commodities. Maharashtra accounts for nearly 9% of the total agricultural income of the country. The state has major area under sugarcane. As per the figures available from Agricultural Department of the state almost 91.83% production is of sugarcane. The productivity of some of the food crops like wheat, rice, cereals and cash crops such as cotton has however remained low. The state government have invested substantial amount in agriculture infrastructure like irrigation, fertilizer industry. However, out of the 23% land under cultivation, only 16% of the land is under irrigation. Considering the fact of maximum use of available water in the last 10 to 12 years, drip irrigation has become most popular, particularly in crops like grapes, pomegranate, banana, sugarcane, cotton etc. Which results in 60% of the area under drip in the country is located in Maharashtra. Considering these facts present article is devoted to study the agricultural productivity in Maharashtra keeping in view the changing agricultural production.

Keywords: Agricultural, Productivity, Maharashtra.

Introduction

Agricultural productivity is measured as the ratio of agricultural outputs to [agricultural inputs](#). While individual products are usually measured by weight, their varying densities make measuring overall agricultural output difficult. Therefore, output is usually measured as the [market value](#) of final output, which excludes intermediate products such as corn [feed](#) used in the [meat industry](#). This output value may be compared to many different types of inputs such as labor and land (yield). These are called [partial measures of productivity](#). Agricultural productivity may also be measured by what is termed [total factor productivity](#) (TFP). This method of calculating agricultural productivity compares an index of agricultural inputs to an index of outputs. This measure of agricultural productivity was established to remedy the shortcomings of the partial measures of productivity; notably that it is often hard to identify the factors cause them to change. Changes in TFP are usually attributed to technological improvements. Measurement of Productivity and efficiency in agriculture has been a subject matter of interest and concern in the area of development economics. The main objective of the initiation of green revolution strategies for development in many developing countries was primarily meant to augment productivity and growth of agricultural sector in the five years plans adoption of green revolution. Such as High Yield Variety (HYV) seeds, chemical fertilizers, pesticides, extended use of irrigational facilities etc.

Importance of agricultural productivity

The productivity of a region's [farms](#) is important for many reasons. Aside from

providing more [food](#), increasing the productivity of farms affects the region's prospects for growth and competitiveness on the agricultural market, [income distribution](#) and savings, and labour migration. An increase in a region's agricultural productivity implies a more [efficient](#) distribution of scarce resources. As farmers adopt new techniques and differences, the more productive farmers benefit from an increase in their welfare while farmers who are not productive enough will exit the market to seek success elsewhere.

As a region's farms become more productive, that means agricultural products increases, which means that it can produce these products at a lower [opportunity cost](#) than can other regions. Therefore, the region becomes more competitive on the [world](#) market, which means that it can attract more [consumers](#) since they are able to buy more of the products offered for the same amount of money.

Increases in agricultural productivity lead also to agricultural growth and can help to alleviate [poverty](#) in poor and [developing countries](#), where agriculture often employs the greatest portion of the population. As farms become more productive, the wages of work in agriculture increases. At the same time, food prices decrease and food supplies become more stable. Laborers therefore have more money to spend on food as well as other products. This also leads to agricultural growth. People see that there is a greater opportunity earn their living by farming and are attracted to agriculture either as owners of farms themselves or as laborers.

However, it is not only the people employed in agriculture who benefit from increases in

agricultural productivity. Those employed in other sectors also enjoy lower food prices and a more stable food supply. Their wages may also increase.

Agricultural productivity is becoming increasingly important as the [world population](#) continues to grow. [India](#), one of the world's most populous countries, has taken steps in the past decades to increase its land productivity. Forty years ago, [North India](#) produced only [wheat](#), but with the advent of the earlier maturing high-yielding wheats and [rices](#), the wheat could be harvested in time to plant rice. This wheat/rice combination is now widely used throughout the [Punjab](#), [Haryana](#), and parts of [Uttar Pradesh](#). The wheat yield of three tons and rice yield of two tons combine for five tons of grain per [hectare](#), helping to feed India's 1.2 billion people.

Objectives of Study

The main objectives of the this research articles are

- 1.To determine the agricultural land productivity in Maharashtra.
- 2.To study the changing Agricultural production in Maharashtra , and
- 3.To determine the factors affecting on productivity of Maharashtra state .

Overview of the state

Maharashtra occupies the western and central part of the country and has a long coasting stretching nearly 720 kilometers along the Arabian sea. The sahyadri mountain ranges provide a physical backbone to the state on the west while the satpuda hills along the North and Bhamragad. Choroli-Gaikhuri ranges on the east serve as its natural borders.

Maharashtra is the second largest state in India both in terms of population and Geographical area (3.08 lakh sq km.). The State has a population of around 11 crores (census 2011) which is 9.3 percent of the total population of India. The state is highly urbanized with 45% people residing in urban area. The state has 35 districts which are divided into six revenue divisions; Viz. Kokan, Pune, Nashik, Aurangabad, Amravati and Nagpur for administrative purposes.

The state has 226.1 lakh hectares of land under cultivation and area under forest is 52.1 lakh *hectares*. Numbers of irrigation projects are being implemented to improve irrigation. A watershed mission has been launched to ensure soil and water conservation measure are implemented speedily in the un-irrigated area.

Causes of low Agricultural Productivity

There are many factors responsible for low productivity in Agriculture. The important among these are as follows.

i) Overcrowding in Agriculture

The increasing pressure of population is the main factor responsible for low yield in Agriculture. The area of cultivated land per cultivator has declined from 0.43 hectares in 1901 to 0.23 hectares in 1981. Hence Agricultural sector has become overcrowded and this has adversely affected the Agricultural Productivity.

ii) Discouraging Rural Atmosphere

The farmers living in rural area are generally tradition bound, illiterate, ignorant supersites and conservative. The Farmers are not prepared to accept anything new as a consequence modernization of agriculture becomes difficult.

iii) Inadequate non-firm services

Shortage of finance marketing and strong facilitates are also responsible for agricultural backwardness in Maharashtra. The co-operative and other institutional agencies have not been able to eliminate the village money lenders. Storage facilities for farmers are not still available to preserve their agricultural product for a better price.

iv) Natural Calamities

Agriculture is depending on the monsoon. If monsoon becomes favorable farmers have a good crop otherwise agricultural is affected by drought, flood and cyclone.

v) Size of land Holding

The small size of land holdings in Maharashtra creates a problem in the way of progressive agriculture. The average size of land holding in Maharashtra is less than 2 hectares. In case of very small farmers it is difficult to introduce new technology. Further due to fragmentation of holding a great deal of labor and energy is destroyed in cultivation.

vi) Poor Technique of Production

The technique of production adopted by farmers is old outdated and inefficient. The tradition-bound poor farmers have not yet been able to adopt the modern methods to get the best yield from their land. The seeds they use are of poor quality and the age-old traditional wooden plough still exists in agriculture. As the farmers do not enjoy the benefits of agriculture research and development programmes, production remains at a low level.

vii) Poor Irrigation Facilities

In Maharashtra out of the total cultivated land only 16% has irrigation arrangements and hence still agriculture is a gamble of monsoon

contented. Absence of irrigation facilities for their land has made the poor cultivator a helpless.

Concept and measurement of Productivity

Productivity refers to output(s) per units of input(s) used in production process. It is a descriptive measure and is independent of any 'benchmark' technology used. Higher productivity implies economy in resource use. Hence growth emanating from higher productivity deemed to be more desirable than that emanating from higher application of inputs. Total factor productivity or multi factor productivity is broadest measure of productivity and is measured as the ratio of real output (or real value added) to a "weighted sum" of input used in the production process.

The various approaches to measurement of productivity are described below.

i. Parametric Approach

The parametric approach requires econometric estimation. The two major methods used under this approach are through estimation of A) Production function B) Stochastic frontier production function. The former assumes an average technology whereas the latter is based on the assumptions regarding errors and benchmark technology.

ii. Non-Parametric Approaches

The Non-Parametric approaches are widely used and are

- a) Measurement of residual in the growth accounting frame work.

- b) Use of data envelopment analysis which enables both estimation of index of total factor Production as well as decomposition of the same into technological change and technical efficiency.

The thought of development of agriculture means to increase production from agriculture. It is need to preserve fertility and ability of soil to give more and more production for long time. Land, Labour and Capital are needful to agriculture. One hector or one acre land gives some production as its capacity. The following table shows fifty year ratio of some main crops in Maharashtra from the year 1960-61 to 2009-10.

It is observed from Table-I that per hector agricultural production of major crops is going on increasing in Maharashtra since 1960 to 2010.

Agriculture is back bone of Indian economy. In Maharashtra state, Agriculture is important in state economy also. The following table shows various crops production which is changed during the period from 1960-61 to 2009-10.

It is observed from Table-II and Graph-II that over all agricultural production of major crops in Maharashtra particularly cash crop such as sugarcane, cotton is very highly increased since 1960 to 2010 but on the other hand the productivity of some crops such as jawar and bajra is decreased considerably in 2009-10 as compared to production in 1960-61.

Table -1 Agricultural production of main crops in Maharashtra per hector (Kilogram)

Main Crops	1960-61	1970-71	1980-81	1990-91	2000-01	2004-05	2009-10
Rice	1054	1229	1587	1467	1277	1423	1485
Wheat	442	542	834	1049	1256	1345	1610
Jowar	672	273	681	941	783	762	854
Bajra	299	404	454	574	604	734	741
Cereals	637	459	788	964	865	462	1169
Pulses	421	264	304	442	460	493	702
Food grain	598	420	692	846	757	836	1039
Oil Seeds	-	438	426	666	820	811	725
Sugarcane	66924	86531	91742	86400	86267	73000	84866
Cotton	114	30	82	117	100	176	256

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Table - 2 Agricultural production of main crops in Maharashtra (production in 000 Tonnes)

Main Crops	1960-61	1970-71	1980-81	1990-91	2000-01	2004-05	2009-10
Rice	1369	1662	2315	2344	1930	2147	2183
Wheat	401	440	886	909	948	1017	1740
Jowar	4224	1557	4409	5929	3988	3623	3565
Bajra	489	824	697	1115	1087	1126	766
Cereals	6755	4737	8647	10740	8497	8863	10215
Pulses	989	677	825	1441	1637	1668	2370
Food grain	7744	5114	9472	12181	10133	10531	12585
Oil Seeds	-	753	728	1882	2099	2697	2814
Sugarcane	10404	14433	23706	38154	49569	23914	64159
Cotton	1673	484	1224	1875	1803	2939	5111

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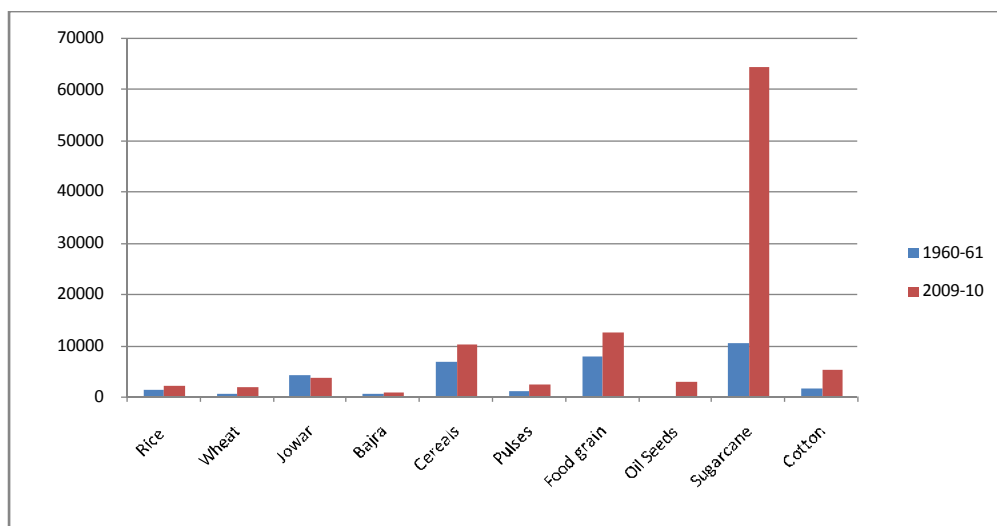


Figure 1-Agricultural production of main crops in Maharashtra (production in Tonnes)

Conclusions

1. In India, The production of Food grains as rice, Wheat, Bajra, etc. are more than Maharashtra
2. Cereals crop in Maharashtra production Higher than India.
3. Cash crop as Sugarcane and Cotton seeds production per hectore is greater than other states in Maharashtra.
4. Except sugarcane need of increase of other food grain and fodder crops in Maharashtra as fast as possible.
5. As compared main crops with the year 1960-61 and 2009-10 a large number of growth is seen in Maharashtra.

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