

## AGRICULTURAL PRODUCTIVITY OF WESTERN MAHARASHTRA AND KONKAN: A HISTORICAL PERSPECTIVE

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**Abstract** :- An attempt has been made here to study the agricultural productivity of Western Maharashtra and Konkan in its historical perspective. although agriculture was practised in Maharashtra since the latter parts of the Harappan Chalcolithic times, one comes across the readily available records regarding the measurement of productivity only from the latter half of the 17th century. Even these records are available only for a limited number of places in the study area. For the purpose of revenue collection, land was classified into different categories which indirectly reflected the level of productivity. Systematic investigations were first conducted during the early years of the British rule. Contrary to the belief that agricultural productivity was low in the past, it is observed that till about the first few years of the 19th century the average outturns of various food crops per hectare on average land were not less than those in contemporary England or in other European countries. A comparison of average yields of different crops in the beginning of the 20th century and those of the present times indicates that in most of the cases the yields have increased considerably.

### INTRODUCTION

The concept of the agricultural productivity in its spatio-temporal context has been studied by different scholars all over the world. With the availability of the agricultural statistics it becomes possible to understand the spatial variations in the productivity but its absence in the past makes it difficult to assess the past agricultural productivity. In such a situation one has to resort to indirect inferences.

The state of Maharashtra is divided into different administrative and physiographic units of which the area under study comprises of Western Maharashtra and Konkan.

### MEASUREMENT OF AGRICULTURAL PRODUCTIVITY IN THE 17TH AND 18TH CENTURY

Agriculture in Maharashtra dates back to the latter parts of the Harappan Chalcolithic times i. e. around 1500 B. C. According to widely accepted theory agriculture was discovered in 7500 B. C. in Western Asia during Neolithic period. From there this knowledge travelled to Baluchistan, Pakistan sind, Western Punjab, eastern Punjab, Haryana, Jammu, Uttar Pradesh, rajasthan, Gujrat, Madhya Pradesh and then to Maharashtra. The earliest record of sorghum cultivation is from Inamgaon site in south-western Maharashtra during 1370 B. C. - 1025 B. C. (Randhawa, 1980). This was the Vedic period. Besides, in Newasa in

Ahmednagar district, archaeological findings suggest the presence of agriculture on black soil.

In Maharashtra agriculture developed through out the historical periods but the records of the measurement of its productivity are not easily available. It is only during Chhatrapati Shivaji's times that some clear-cut records are found which give us an idea about the concept of agricultural productivity. In this period, between 1630 and 1680 A. D., agriculture as an occupation was the mainstay of the people. The cultivable land was considered an important aspect of the life of the people and they treated it as "Mother Earth". The net agricultural produce was shared by state officials, artisans and the actual tillers of the land. But the general conditions of the cultivators and of agriculture were very depressing. The unreliability of rains, constant battles, lack of credit facilities and heavy taxation made farmer's life miserable affecting agricultural productivity in general. The percentage of cultivable land to the total geographical area was very low. According to some of the available records (Kulkarni, 1967) Menoli village in Wai Tahsil had only 12 *cavars* (a *cavar* = 120 *bighas* = 80 acres = 32 hectares) as the total land under cultivation out of which only 2 *cavars* (16% of the total land of the village) was graded as the I rate land. In another record Nayagav (Sirval in Satara district) had only 1% of the total land of the village as its irrigated land. Agricultural productivity suffered because of lack of man power (as men were engaged in warfare), and lack of bullocks, ploughs and their accessories. There was plundering and destruction on account of incessant warfare. There are accounts of armies destroying the crops, plundering the bullocks, setting fields ablaze etc. Agriculture suffered. The cultivators could not get much return from their land. At the same time the state tried to extend help in the

form of loans on easy conditions and reduction in land revenue. The extending of inam grants to the officials involved in record-keeping of the agricultural land was to keep a generally good and encouraging environment for agricultural activities. It was a sort of punishable act for the official if the tillers left the village because of any kind of oppression.

For this period an attempt can be made to estimate the return from agricultural land with the help of certain accounts pertaining to land revenue. The records of Rahimatpur, a *Kasba* in Wai tahsil, helps us to arrive at some estimates of agricultural returns for the entire year of 1675 for this region. Here the total land of the *kasba* was 110 *cavars* and 3 *bighas* out of which 19 *cavars* were unclutivable. Thus only 91 *cavars* and 3 *bighas* could be used for agriculture. The irrigated land was a little less than 6 *cavars*. The state was getting Rs. 4858 as land revenue from this *kasba*. If we accept that it was  $\frac{2}{5}$  of the total agricultural produce, it meant that the total volume of agricultural production amounted to about Rs. 12150 (about Rs. 132 per *cavar* or Rs. 4.1 per hectare) excluding the lands which were exempted from land revenue. It can be compared with the money return for the 11 principal crops of Rs. 3221 per hectare in 1985. The rate of assessment varied with the quality of the soil. Thus, in a way the land revenue assessment was an index of the productivity of agricultural land. The basis of this assessment was that, first of all, a record of the arable land was prepared. The land of the village was then divided classwise such as I class, II class, III class and IV class land. Thus a record of holdings and the class to which each holding belonged was prepared.

The next factor affecting the assessment was the crop sown. A crop-wise estimate of the produce of the holdings of each cultivator was then made. The officers in charge of as-

assessment were also expected to add to it some supplementary information which helped to arrive at the probable total produce of the land. These estimates were handed over to the Finance Minister who would then inspect three villages of different types—one hilly, one marshy and one with black soil, to cross-check the estimates with the actual produce on the spot. Pargana officials, village officials and the villagers together had to agree upon the estimate of the produce of the village under consideration. Accordingly the revenue charged was indirectly an index of agricultural productivity then. Assessment varied not only with the type of land but also with the type of crops cultivated. Each crop had a different rate of assessment. Land under cultivation was not measured every year. Only when the accuracy of existing entries was challenged, then fresh measurements were made. Crop-yielding power of the holdings was considered and not their mere areas in units of measurement.

#### MEASUREMENT OF AGRICULTURAL PRODUCTIVITY IN THE 19TH AND 20TH CENTURY

By the middle of the 18th century Marathas had occupied most of the important and inhabited parts of Western India. The general administration and the policies of Maratha rulers at this time encouraged agriculture increasing its productivity. The agricultural data preserved in the Peshwa Daftar, Poona, support the view that till their country was passed on to the hands of the East India Company, there had been a general expansion of agricultural activity increasing its productivity. There had been an increase in the number of land holders and an increase in the village revenue collections. But it was checked in the first 15-20 years during the British rule i. e. around the beginning of the 19th century. But "curiously enough in spite of the lack of progressiveness in farming methods and the use of inputs, the

average outturns of various food crops per hectare on average land till about the first few years of the 19th century at least, were not less than those in contemporary England or other European countries. A number of detailed field investigations in Poona Collectorate, conducted in 1820 by Capt. Robertson, the then Collector of Poona, showed that the outturn of wheat on irrigated 'best' black land was about 2384 kg per hectare and on the average irrigated land it was 1994 kg per hectare or 32 English standard bushels per acre. On unirrigated black land the average was 1787 kg per hectare. In Scotland the prevailing average for wheat was 1788 kg per hectare (24 bushels per acre). Robertson observed that in Gloucester in England a farmer in 1784 reaped no less than 45 bushels of wheat per acre (i. e. 3353 kg per hectare) from his 50 acre wheat field, but that this was considered a very superior crop. As for *jowar*, the average outturn in unirrigated "best" land was 1141 kg per hectare, while *bajra* averaged a little less. In Talegaon near Poona in a good quality black land, a fine ear of *jowar* contained 2556 grains weighing 14 drachms or about 54.46 grammes, while, a fine ear of *bajra* contained 3018 grains weighing 5 drachms and 2 grains apothecaries, equivalent to 19.58 grammes. The outturn of rice in Maval Region in 1820 was 2492 kg per hectare where the crop was good, while the average outturn of an average crop was 1778 kg per hectare. Data for other areas and also for other numerous crops tally well with these figures of yields (Divekar, 1976).

The East India Company followed the land revenue system of Marathas, later systematizing it more on scientific basis. Mr. Pringle, the then Assistant Collector, Poona in 1827, introduced a new modified assessment system of land revenue. It consisted of (1) a field by field survey of all the cultivable lands; (2) the assessment of every field measured in this way. The latter operation was based on the

fact that the capability of agricultural production of different classes of soils is proportionate to their assessment. The agricultural production here meant the net produce after deducting the cost involved in that production. To arrive at this net produce Pringle divided the soil into various categories, ascertaining the amount of produce of each class and also ascertaining the average cost involved in that much of production. This helped him to arrive at the net produce. Theoretically this method looked sound but it failed to a large extent. The main causes of the failure of this indirect index of productivity in that period were: (1) the proper supervision of the large number of workers engaged in this work seemed impossible. (2) the enquiries were very intricate and misleading. (3) It did not help in reducing the amount of assessment which was desired. (4) a series of famines occurred disrupting all such activities.

As a result of Pringle's system becoming unsuccessful, a new and more moderate system was adopted. The first place where it was put into practice was Indapur in Poona District. The entire process involved (1) measuring, (2) classifying soils and (3) accounts. In doing so the measurers of the land initially assessed the returns of land which was then cross-checked by engineer officers and approved. Then the land was classified into three categories of I, II and III grades under each of the three types of (1) black (2) red and (3) *burrud* soil. This value was only an index to the productive power of the soil irrespective of any reference to the situation. Other facilities like nearness to roads, market etc which affect the total returns of the land, were considered in the final assessment of land. The scale adopted to bring out the relative productivity of the soil was as follows:

TABLE NO. I

	Reas	As. Ps.
I Black	300	12.0
II Black	240	9.7
III Black	170	6.10
I Red	200	8.0
II Red	130	5.2
III Red	60	3.0
I Burrud	100	4.0
II Burrud	50	2.5
III Burrud	35	1.5

After Indapur, such surveys and assessment were carried out in other parts of Western Maharashtra with modifications according to the local physical features and soil types. The result of these elaborate attempts to arrive at land revenue assessment and indirectly the agricultural productivity of the land came to be known as the Joint Report of 1847. The general principles of this Joint Report were (1) each field was separately treated; (2) it granted a long lease of 30 years; (3) assessment was not dependent on estimate but on actual value of lands.

This method had the following weak points :

- (a) Factors other than soil types which affect productivity are many and an attempt to consider all in assessing the land invariably leads to faulty results.
- (b) Too much was left to the discretion of the assessors and the classifiers.
- (c) No two fields, though similar in soil type etc. can have the same production because many factors and their combinations work invisibly.

However, this new system of assessment, which helps to gauge the agricultural productivity, brought order and betterment in assessing agricultural productivity. This system, more or less on the same principles with slight modifications, was carried on in the rest of the 19th century. Regular survey and assessment reports, their regular revised forms too, improved the system. It started giving a better overall picture of agricultural productivity. Though this study of the development of the system of recording agricultural productivity, directly or indirectly, is based on the records available for Western Maharashtra but more or less the same system prevailed in the other parts too. In Konkan, for example, at the beginning of the British rule, 5 leading forms of assessment of cropped land were there : '*Bighoti*' or *bigha* rate, *dhep* an unmeasured lump of land, *mogham* or vague, '*ardhel*' or

half share, and *nangar* or *koyta*. The first form of assessment varied from place to place within Konkan. Under the second form the measurement of land was not done, instead half of the average yield for 3 years was fixed as its rent. According to the third, some charge was levied on the cropped land but without any reference to its yield or area (Choksey, 1960). On the lands reclaimed from the sea, half of its produce was fixed as its rent. The fifth form applied to the wilder parts of Konkan.

Going back, during the times of the last Peshwas only rice land was classified into regular grades according to their productivity i. e. according to the standard of the standing crops then. Fifteen different grades of soil had different assessment rates according to their productivity ranging from 10 *maunds* of grain per *bigha* to 3.3/4 *maunds*. The rate of other cereals was 3 *maunds* for *nagli* or *vari* and 1.3/4 *maunds* for *sava* or a crop of pulse.

Around 1821-29, according to some available records (Choksey, 1958) about 1/6th of the total produce of the land was fixed as the govt.'s share. During Shivaji's time, in Konkan, for assessment purposes, the rice land was classed into the following categories.

This categorisation throws some light on productivity levels of various types of agricultural land. Similarly '*Wurkus*' or dry land was having its assessment at 1/3 or 1/4 of its produce, *ragi* lands according to 2 levels of fertility had 3.3/4 *maunds* and 3 *maunds* rates respectively, *Wari* had 3 *maunds* and 2.1/2 *maunds*, *Hureek* had 3 *maunds* while all other types of dry cultivation had 1.1/4 *maunds* as its rate. Thus the type of crops also determined the level of productivity. Further, sugarcane, turmeric, hemp also had different rates. There were separate regulations for garden cultivation.

To repeat, in general, the agricultural productivity was assessed by a proportionate land

TABLE II

## CLASSIFICATION OF RICE LANDS CALLED DHEP

		Maunds	Pylees
I	Class	12	6
II	Class	10	0
III	Class	8	0
IV	Class	6	3
	Land called		
V	<i>Bawel</i>	6	3
VI	<i>Kharwat</i>	7	6
VII	<i>Ruhoo</i>	5	0
VIII	<i>Khuree</i>	6	3
	<i>Kwuat</i> of two kinds		
IX		6	3
X		5	0
XI	<i>Rampal</i>	8	0
XII	<i>Toor</i>	5	0

TABLE NO. III

## AVERAGE YIELDS OF THE PRINCIPAL CROPS IN DIFFERENT PARTS OF BOMBAY PRESIDENCY, 1917. (KG/HA).

Districts	Jowar	Bajra	Rice	Wheat	Gram	Tur	Cotton	S. Cane	Gr. Nut
W. Khandesh	730	561	1213	674	561	1078	124	7859	2807
E. Khandesh	730	561	1213	674	561	1078	124	7859	2807
Nasik	584	404	1213	516	393	1078	112	7859	2807
A. Nagar	606	382	1168	516	427	1078	101	7859	2807
Poona	561	382	1257	393	359	898	101	7859	2807
Solapur	606	359	1010	449	404	1078	101	7859	2807
Satara	808	404	1257	539	427	1347	101	7859	2807
Thane	786	382	1347	449	449	415	-	7859	2807
Kolaba	-	-	1482	-	427	460	-	4491	-
Ratnagiri	-	449	1145	-	359	483	-	4491	-
Bombay	752	449	1381	646	460	579	-	-	-
Presidency									

Remarks: (1) Figures of average yields of grains per acre of cereals have been taken from the quinquennial report for the quinquennial ending 1917. (2) The original data in the Bulletin NO. 109 for 1921 was given under the columns of total acreage and outturns in lbs. These have been converted into hectares and kgs and finally into kgs per hectare for comparability with the present yields.

TABLE NO IV

**AVERAGE YIELDS OF THE PRINCIPAL CROPS IN DIFFERENT PARTS OF BOMBAY PRESIDENCY FOR THE PERIOD 1906-1920 (KG\HA)**

Districts	Avg. for 14 years from 1906-1920					Tur Avg for 10 years	1909 to 1918-19	
	Jowar	Bajra	Rice	Wheat	Gram		Cotton	S. Cane
W.Khandesh	529 (748)	362 (707)	871 (683)	469 (1011)	416 (491)	865 (945)	93 (139)	6620 (5959)
E.Khandesh	690 (1359)	357 (624)	725 (1312)	516 (858)	433 (583)	738 (886)	86 (142)	6540 -
Nasik	315 (652)	265 (451)	925 (1359)	356 (827)	264 (462)	661 (898)	77 (262)	7178 (8676)
A. Nagar	349 (494)	235 (403)	824 (1025)	295 (1123)	218 (484)	600 (561)	68 (178)	7070 (6895)
Poona	347 (564)	244 (310)	1043 (1574)	312 (949)	227 (381)	483 (745)	55 (216)	6762 (9266)
Solapur	387 (362)	145 (272)	525 (1176)	269 (907)	194 (253)	554 (198)	47 (252)	6485 -
Satara	597 (788)	256 (200)	827 (1452)	369 (1043)	278 (908)	822 (891)	63 (236)	6532 (7187)
Thana	475 -	227 -	1205 (1497)	342 -	353 -	308 (316)	- -	7101 -
Kolaba	522 -	324 -	1409 (1629)	- -	321 -	376 (375)	- -	4154 -
Ratnagiri	674 -	268 -	932 (1434)	- -	232 -	296 (333)	- -	3742 -

*Remarks:* (1) These yields in their original form were given in lbs. per acre. These were converted into kg/ha for comparability with the present yields. (2) Figures in brackets indicate the average composite yields of 1979-80.

revenue everywhere. Later, Season and Crop Reports, Agricultural Census etc. became more regular and better in their enumerations successively. According to the Government Bulletin number: 109 for 1021 for Bombay Presidency (Patil, 1921) about 713 lbs (324 kgs) of

cereals and pulses were being produced per head of population. This amounts to 1134000 calories for a year—more than a standard nutrition unit normally accepted for the people of a country like India. This estimate is based on what are supposed to be normal yields,

which are only attained in good years. These normal average yields were as shown in Table No. III and IV

By the time the British rule came to an end the entire system of land records for yields, areas, productions, prices were in a good

shape. Even after independence, with each successive agricultural census and the annual season and crop Report, we find betterment in records helping us to arrive at agricultural productivity in a better and relatively more accurate manner.

#### REFERENCES

- Bhandarkar, R. G. (1975) : *Early History of the Dekkan*. Bhartiya Publishing House.
- Choksey, R. D. (1945) : *Economic History of the Bombay Deccan and Karnataka*.
- Choskey, R. D. (1955) : *Economic Life in the Bombay Deccan (1818 - 1939)*.
- Choskey, R. D. (1960) : *Economic Life in the Bombay Konkan*.
- Choksey, R. D. (1958) : *Ratnagiri Collectorate*.
- Divekar, V. D. (1976) : *Cambridge Economic History of India*, Vol.2.
- Kulkarni, A. R. (1967) : *Maharashtra in the age of Shivaji*.
- Patil, P. C. (1921) : The Crops of the Bombay Presidency : Their Geography and Statistics, *Bulletin No. 109*.
- Randhawa, M. S. (1980) : *History of Agriculture in India*, Vol. I.
- Sukthankar, B. R. (1988) : *Nineteenth Century History of Maharashtra*, Vol. I.

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