

**A STUDY OF THE AGRICULTURAL INCOME
OF MAHARASHTRA. 1951 - 52 TO 1958 - 59**

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I N T R O D U C T I O N

An attempt is made in this study to estimate the agricultural income of Maharashtra by districts. It is not the purpose of this effort to indicate the rate of growth in the agricultural sector in either Maharashtra or separately in the different districts over the period selected. The object is to analyse the structure of Maharashtra's agricultural income as it evolved in the years 1951-52 to 1958-59. When variations in the growth rate are the focus of enquiry it would be essential to estimate income or product at constant prices. However estimates at current prices would be quite useful for the purpose in view here. After all what is described as income at current prices represents the income actually distributed among the productive resources concerned from year to year over the period in question.

It needs to be explained at this stage as to what we mean by the structure of agricultural income. Given the method of estimation employed in this study income from agriculture turns out to be the sumtotal of the value of crops and byproducts. It will be observed later that the owners of productive resources among whom the total

value of crops and byproducts is distributed are in most cases likely to be the residents of the region in which the productive agricultural activity occurs. This would be particularly so when the region in view is the whole State rather than a district within a State. In such a case it may be meaningful to characterise the aggregate value of crops as income accruing mostly to a group of persons roughly classifiable as a distinct section known as 'agriculturists', and to study the distribution of this income among the different groups within this section. No attempt is made here to highlight this aspect of the composition of regional agricultural income.

However, the value of crops and byproducts in Maharashtra is built up district by district. One then gets the distribution of Maharashtra's agricultural income by districts. This also is a matter of composition--or, we may say, structure--of the region's agricultural income. We limit ourselves to a study of structure in this sense. The attempt then is to focus attention on the inter-district diversities within Maharashtra viewed over a period of eight years.

Further, we obtain for every district the division of its agricultural income by at least the more important crops. It is then possible to analyse the differences

between districts not merely with reference to income from agriculture as a whole but also to income separately from the principal crops. In this connection attention is confined only to diversities in respect of income from foodgrains and that from cashcrops. It is true that the measures being used for comparison here have their limitations, but these limitations may be characterised, borrowing a phrase from Kuznets, as "qualifications, not negations, of the significance of the measures."¹

In addition to elucidating the structure of the agricultural income of Maharashtra it is also a purpose of this study to analyse the sources of data available for making estimates for Maharashtra. At the all-India level the National Income Committee (NIC) analysed at length the sources of data available in the early fifties. In a recent publication, viz. "National Income Statistics -- Proposals for a revised series of National Income Estimates for 1955-56 to 1959-60" (1961)² the Central Statistical Organisation (C.S.O.), Government of India made an elaborate analysis of the sources of data that

¹ Simon Kuznets : 'Some Conceptual Problems of Measurement', in Bernard Okun and Richard W. Richardson (edt.) : Studies in Economic Development (Holt, Rinehart and Winston, 1964), p. 241.

² This publication will be referred to hereinafter as NIS.

have eventually become available for estimation of the income of the whole country. However, the various State Bureaus which estimated income of the respective States merely applied the methods used by the NIC without subjecting to special scrutiny the existing sources of information from the particular points of view of the States concerned. The general practice has been just to mention the sources of information without commenting on the extent of coverage and reliability of the information furnished in the sources. In particular, in the case of prices to be used for evaluation it is necessary to explain the type of data required and make a selection in the light of this explanation. We find the different State Bureaus using diverse kinds of prices for evaluating the agricultural output, and still hardly any of the Bureaus has indicated the reasons for using one kind of price rather than another. In the estimation of regional income in India an analysis of the sources of data from the point of view of the region concerned appears to be necessary.

Maharashtra is composed of areas which belonged previously to three different States, viz., Bombay, Madhya Pradesh and Hyderabad. As such there is some diversity in the sources of data which needs to be considered. Further, as we shall see, there are some differ-

ences in data for the different districts in respect of coverage and reliability. Then again, the adjustment of boundaries of a few of Maharashtra districts would also raise problems of reliability. It is therefore intended to examine the sources of data from the points of view of scope and reliability, and indicate methods of adjusting the data in order to obtain the maximum possible accuracy in estimates.

In Chapter I we consider briefly the significance of the concept of national income itself. A view that the concept of national income in vogue in advanced countries is not quite relevant in an underdeveloped country, is examined in this context. Clearly if this view were correct the work of income estimation in underdeveloped countries would be rendered meaningless. We however conclude that the basic argument urged in favour of this view does not appear to be convincing. Further, in this chapter we indicate some special aspects of the concept of regional income as contrasted with that of national income, and then explain why we shall be opting for a series of gross, rather than net, income in agriculture for the purpose of this study.

Chapter II spells out some of the issues that arise in connection with the estimation of the agricultural

income of Maharashtra. One such issue relates to changes in district boundaries. It will be seen that though some 'correction' of available data would be necessary to allow for these changes, there is reason to believe that the possible margin of error that may be introduced in our estimates due to the need for adjustment of data is likely to be quite small. In the next place, the choice of a specific period viz., 1951-52 to 1958-59, for study is explained, and reasons are given for estimating and analysing income only in the agricultural sector of Maharashtra. The problem of estimational method raises an additional issue. Though in U.S.A. the techniques of allocating State totals among counties have been used to some extent, the method of apportionment is found to be of little value for the present study. Finally, we consider one aspect of the reliability of estimates, viz., reliability of estimates for Maharashtra as compared to those for the whole country. It is concluded that in all probability estimates for Maharashtra are likely to have an edge of superiority over those for India in point of reliability.

As a step towards estimation of agricultural income we must obtain area and outturn of crops in the districts. Since it is customary to divide the twenty-six districts of Maharashtra into four broad regions, viz. Konkan,

Deccan, Vidarbha and Marathwada, we consider the problem of estimation of area and outturn of crops separately in the four regions. Chapter III analyses the sources of data on area and outturn of crops in Konkan and Deccan districts as most of these sources are common to these two regions. Data are available for a wide variety of crops. Though the estimates based upon these data are not likely to be reliable in equal degree for all the districts it appears that the degree of reliability is quite large for the districts concerned. In Chapters IV and V we estimate area and outturn of crops as also the outturn of byproducts respectively in Konkan and Deccan districts. Adjustments in data are made to account for alterations in the boundaries of Thana district in Konkan and Dhulia in Deccan. As will be seen later no adjustment is called for in^{the}/case of Kolhapur in Deccan.

Chapter VI deals with the sources of data on area and outturn in Vidarbha districts. In respect of coverage and reliability of data used we reach for Vidarbha districts a conclusion broadly similar to that for Konkan and Deccan districts. In Chapter VII the area and outturn of crops in Vidarbha districts are estimated taking into account the enlargement of one of the Vidarbha districts in 1959, viz. Chanda. Similar estimates for Marathwada districts on the basis of an analysis of sources

of data are attempted in Chapter VIII. While preparing these estimates we take note of the fact that two of the Marathwada districts, viz., Nanded and Osmanabad, underwent some change in boundaries.

In Chapter IX we turn to the estimation of the gross income in the agricultural sector in the different districts of Maharashtra. The initial problem that has to be faced is the type of prices data that need to be used for evaluation of the agricultural output. We give reasons for opting in favour of data on farm (harvest) prices. From the point of view of availability of prices data we can divide the crops into three categories :

(i) those for which year-to-year data are available, though with some gaps, (ii) those for which, though the relevant data are not there, we have some scattered data for a few of the years which have to be adjusted to yield the type of information we require, and (iii) those for which no prices data whatsoever are to be obtained. In addition there are the byproducts.

In the case of data on prices of crops coming under (i) the main problem we face is that relating to gaps in information. We make a distinction between what we characterise as a 'district gap' and as a 'year gap'. Methods are suggested for handling separately the two

types of gaps. We then consider the problem of obtaining value of crops coming under (ii) and (iii). In the case of residuary crops falling under (iii) it is customary to estimate the value on the basis of an assumed value yielded per acre. It is not proper to just copy the formulae on per acre values used at the all-India level by the NIC or C.S.O. For the more important residuary varieties in any case an attempt is made to derive value per acre by postulating a relationship between value per acre of some main crop and that of the residuary category, in determining which use is made of some scanty data on prices of the relatively important item under the respective residuary categories in Maharashtra districts. Finally, the methods of evaluating the outturn of by-products are specified.

Chapter X analyses the structure of agricultural income by districts as estimated in Chapter IX. Chapter XI makes a review of Maharashtra's agricultural income on the basis of analysis and results of the earlier chapters.

The body of the text is followed by a few Appendices. Appendix I gives the meaning of the different abbreviations used in the thesis. In Appendix II we give in one place the districts respectively in the four regions of Maharashtra, i.e. Konkan, Deccan, Vidarbha and Marathwada.

Appendices III, IV and V show income per acre under cotton, groundnut and tobacco respectively. The relevant income per acre is estimated for the purpose of deriving the value of average yield per acre under the corresponding residuary variety such as fibres, oilseeds, or drugs and narcotics. The data on income per acre of the three cashcrops are provided by way of appendices merely for information. As the three crops (cotton, groundnut and tobacco) were of little consequence in Konkan districts, no data for these districts are given in the three appendices. In the same way in the case of each crop a district in which the crop was not grown is evidently left out of the relevant appendix. Finally, an attempt is made in Appendix VI to discover the extent to which the ranking of districts made in Chapter X is influenced by the fact of differences in the price of a crop in the several districts in any year. This is done by evaluating a district's outturn of major crops in 1951-52 and 1958-59 respectively at the weighted average prices in Maharashtra as a whole.

CHAPTER I

INCOME - NATIONAL AND REGIONAL

Since we shall be constructing in the present study an income series, though relating to a specific sector of activity, it would be worthwhile to indicate briefly the significance of income estimation. This point is of special importance because, as we shall cite presently, there is a view that the concept of national income employed in advanced countries is of little value in underdeveloped countries. Further, as our study relates to sectoral income within a region it would be necessary to touch upon the special nature of regional-sectoral income as distinct from national income.

National income is "the net value of all economic goods produced by the nation."¹ As such it is a formal composite index with little substance of its own. In the ultimate analysis it is designed to reflect certain other composite entities, viz. a community's (economic) welfare as also the productivity of the factorial resources

¹ Simon Kuznets : National Income and its Composition, 1919-1938, (National Bureau of Economic Research, New York, 1954), p. 3.

owned by the community. Clearly national income has to be expressed as a sum of money-values paid and received in return of productive services. But these money-values are meaningful because they are presumed to constitute a useful index of the aggregate of actual goods produced. Thus national income is to be regarded as a meaningful sum of quantities of goods produced by resources owned by a community and hence distributed among the members of the community--quantities which from a strictly physical standpoint are not addible. It is in this sense that national income is a formal composite index possessing little substance of its own.

It follows from the preceding formulation that national income of a country is of little consequence in itself. Its meaningfulness is derived from the significance of the income-generating activities from the point of view of purpose(s) that the national economy is expected to subserve. It is important to note that the very term 'production' which is quite crucial in the definition of 'national income' itself involves the primacy of a purpose. In Western economic writings satisfaction of individual wants in a framework of given tastes is conceived to be the main purpose of production. Thus Professor Kuznets affirms: "The goal of economic activity is to satisfy wants of individual consumers who are members of the

nation, present and future. This is the only goal that seems to underlie the performance of a variety of economies and the only one that can be associated with the economic aspect of social welfare."² With this conception of the economic activity in view it has been urged that the concept of national income in vogue in advanced countries is not quite relevant in the underdeveloped regions of the world.

It is argued that the economist's abstract world of individuals seeking to maximise "personal" gain has some semblance with reality, if at all, only in an advanced country. Here it is considered reasonably valid to assume that more "income" means more "utility" which is an important ingredient in the aggregate welfare of an individual. The evidence of this generally cited is that in such a country a higher reward will ordinarily call forth a larger effort. Thus the argument presumes that the nature of the economic incentive mostly operative in an advanced country is such as to render the maximization hypothesis employed in modern economic theory workably realistic.

2

Simon Kuznets, "Government Product and National Income," *Income and Wealth, Series I*, International Association for Research in Income and Wealth, Bowes and Bowes, Cambridge, 1951, p. 180.

According to the view being outlined here, the picture in an underdeveloped country is very much different. "In the economically 'backward' communities economic activity cannot possibly be regarded as governed by highly refined individual choices or abstract evaluations directed towards increasing individual mental satisfaction. For the most part these peoples are engaged in narrow economic pursuits circumscribed by an environment from which they have, as yet, learned to wring only a precarious existence in accordance with the traditional social and economic precepts to which they still cling. To speak in their case of the creation of income in a monetary, a psychological, or even an individual sense is to apply a foreign symbolism to express, or to account for, activities which are not conducted in terms of such symbolism, and cannot be expressed by it."³

It is further stated that in these societies activities are directed to "the production of goods and services to satisfy the 'concrete' needs of immediate or seasonal consumption and not in any sense to the creation of 'rights' to goods and services or 'values' in the abstract -- such

³
S. Herbert Frankel : The Economic Impact on Underdeveloped Societies, Essays on International Investment and Social Change (Oxford, Basil Blackwell, 1953), pp.34-35.

as the right to an abstract stream of 'income' in an accounting or proprietary sense."⁴ Under the circumstances it is expected that a higher reward will call forth not more but less effort. We are told that this is because "what stimulates the people concerned is the achievement of particular limited purposes -- purposes which are socially determined by custom and tradition."⁵ Hence, so goes the argument, to add up a sum of money values in order to derive an aggregate signifying welfare in an underdeveloped country is not a legitimate procedure. To be sure, it is agreed that there has to be an approach to the study of welfare patterns in such a country but it is suggested that there is no point in doing this through the construction of a formal index such as 'national income' in imitation of practice in advanced countries.

Clearly the difference between the developed and the underdeveloped countries implicit in this context is believed to hinge upon the operation or otherwise of the specific economic incentive which ensures that people work more for higher rewards. This difference is supposed to reflect a basic contrast between the purposes which

⁴ S. Herbert Frankel, op.cit., p. 35.

⁵ ibid., p. 35.

economic activities are intended to promote in the two types of societies.

It is thus seen that the answer to the question whether the concept of national income current in advanced countries is appropriate for the underdeveloped countries or not will depend very much on empirical data bearing upon incentives to economic activity relevant in the latter group of countries. There is strong room to doubt whether the backward-sloping supply curve of effort can be regarded as a satisfactory description of the typical income-effort relationship in an underdeveloped country. Probably the rapidity with which the want-patterns of an advanced country make an impact on those in an underdeveloped country reinforces this doubt. Thus commenting on the possible difference in the want-patterns in developed and underdeveloped countries Dr. V.K.R.V.Rao doubts "that this so-called difference in attitudes to wants between, for example, India and the United States really exists on the scale imagined." He adds further that "to the extent that it does, it is, largely speaking, not of a static or permanent character resulting from some deep-rooted tendencies of the Indian people but is the result of ignorance and lack of education to some extent, but much more the result of lack of opportunity."⁶

⁶ V.K.R.V.Rao: Essays in Economic Development (Asia Publishing House, Bombay, 1964), p. 91.

Then again, it is necessary to remember that a "series of individual backward sloping supply curves does not necessarily produce a backward sloping aggregate supply curve"⁷ as there are considerable individual differences.

Theoretically it seems important to analyse the probable economic motivations that underlie the gain-maximising behaviour. What a backward-sloping supply curve of effort means in effect is that the individual or the group to which it applies is ordinarily not willing to strive for anything more than a certain maximum amount of income. One would feel that this statement is true of an advanced country as well. The difference that may presumably be pointed out would be that whereas in advanced countries the maximum in question would normally be a substantial income, a mere pittance would be adequate in the underdeveloped regions. The real question is whether underlying this presumed difference is a difference in economic motivations.

To say that an average Westerner, for instance, is likely to work more for a higher reward is a crude generalization. What in fact is conveyed at the level

⁷ P.T.Bauer and B.S.Yamey : The Economics of Underdeveloped Countries (James Nisbet and Company Limited, Digswell Place, Welwyn, Herts and the Cambridge University Press, 1957), p. 85.

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of appropriate abstraction is that he weighs income and effort at the margin and strives for maximum gain with minimum effort. Ordinarily, given the relatively high rating he places on goods that income fetches, this behaviour on his part yields a supply curve of effort which rises over realizable ranges of income. Probably in underdeveloped countries in the case of some sections of population the rise in the curve comes to an end relatively early. This however need not betray a different economic motivation. The relevant motivation may still be to obtain maximum gain with minimum effort but owing to special circumstances it may be yielding different results. Consider, for example, the case of a poorly-paid labourer working long hours. A rise in the rate of remuneration would make possible some desired reduction in the toil which may be promptly availed of. In the language of the economist, at a lower price of 'income' in terms of effort, less of 'income' is demanded, i.e., 'income' as against 'leisure' turns out to be an 'inferior good' in the relevant range. Clearly "Giffen's paradox" is not incompatible with economic motivations that are presumed to underlie gain-maximizing behaviour in advanced countries.

It will be seen that the above argument does not necessarily belittle the difficulties of comparison of

incomes of countries in different stages of economic development. As Prof. Kuznets pointed out long back, the very fact that at extremely low levels of income in underdeveloped countries the populations of the advanced countries would be dead suggests that the income-welfare scales in advanced countries are probably different from those in underdeveloped countries rendering inter-country income comparisons valueless.⁸ But clearly the differences in the income-welfare scales need not mean, ipso facto, that whereas income-welfare relationship is positive in the advanced countries it is not so in the underdeveloped regions.

The point made earlier is twofold. It is probably incorrect to portray the income-effort relationship in underdeveloped countries by means of the backward-sloping supply curve of effort. Secondly, even if it were not so, one would doubt whether such a curve indisputably signifies the operation of an altogether different incentive. The view therefore that the income concept current in advanced countries is inapplicable to underdeveloped countries does not seem to be convincing.

⁸ Simon Kuznets : 'National Income and Industrial Structure' in Economic Change, Selected Essays in Business Cycles, National Income, and Economic Growth, (W.W.Norton and Company, Inc., New York, 1953), p. 151.

An estimate of income of the whole country is construed at once as an index of the economic welfare of an identifiable group of persons, viz., the nationals of the country, and a criterion of productive efficiency of the factorial resources in use. "It is possible to speak of the national income as an aggregate of individual incomes received by transactors whose national identity is plain, and correspondingly of the national product as an aggregate of final outputs produced by individual firms and government agencies whose national identity is equally well defined."⁹ At the level of the nation it is customary to distinguish between 'national' product or income and 'domestic' product or income. The former concept which is 'political' in nature refers to the income received by the nationals of the country and hence provides primarily a welfare index. The latter on the other hand is a 'geographical' concept indicating the income produced by factorial resources employed within the territorial confines of the country and hence it gives us mainly a productivity index.

the

Since data relating to/flow of productive resources

⁹ Werner Hochwald: "Conceptual Issues of Regional Income Estimation" in Regional Income, Studies in Income and Wealth, Volume Twentyone, by the Conference on Research in Income and Wealth, Princeton, 1957, p. 24.

across national boundaries are readily available it is possible to separate international transactions from domestic business by a rest-of-the-world account which in the form of 'balance of trade' has been an ancient social accounting device. We can thus estimate for a country both its national as well as domestic product or income. What is more important, in the case of a country like India where the net exchanges with the outside world are very much less significant as compared to the productive activity within the country, national income and domestic product would almost coincide. Thus both in the conventional series of income estimates for India as well as in the revised series prepared by the C.S.O., Government of India in NIS, there is hardly any difference between the net domestic product at factor cost and the net national output at factor cost (i.e. national income). Under the circumstances more or less the same total would signify productivity as well as welfare.

The situation seems to be different in the case of regional income. The ownership of resources across regions of a country is likely to be far more common than ownership across national boundaries. Ordinarily, "the relative importance of transactions crossing area boundaries increase as the size of the area decreases."¹⁰

¹⁰ Werner Hochwald: op.cit., p. 13.

It therefore becomes pertinent to make a conceptual distinction between 'income originating in' and 'income accruing to'. With the help of income estimates for 1958 drawn from C.S.O. sources and consumption data relating to 1957-58 taken from the National Sample Survey (N.S.S.) an attempt was made by Dey, Mukerjee and Roy to rank the States in India roughly according to per capita income from commodity production and per capita household consumption. The results are shown in Table 1.1.

To the extent that the results in the above table indicate at least a broad picture it is seen that 'income originating in' which is an index of the productivity of resources within the region may diverge significantly from 'income accruing to' which signifies the welfare of the residents of the region. As the data required for estimating income received by the residents of a region are likely to be highly unsatisfactory it is customary to estimate income produced within the region. It is important to realize that this is not a welfare but a productivity index. It refers not to the welfare of a conveniently identifiable group of persons but to the productivity of factorial resources whose regional identity is fairly well demarcated. The significance of such a product estimate lies in the fact that it "is a very

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TABLE 1.1 : RANKS OF STATES ACCORDING TO PER CAPITA
 INCOME FROM COMMODITY PRODUCTION AND PER
 CAPITA HOUSEHOLD CONSUMPTION

States	According to per capita income	According to per capita household consumption
Andhra	7	10
Assam	1	4
Bihar	11	13
Bombay	2	7
Delhi	13	1
Kerala	6	12
Madhya Pradesh	4	5
Madras	9	8
Mysore	5	6
Orissa	12	14
Punjab	14	2
Rajasthan	8	3
Uttar Pradesh	10	9
West Bengal	3	11

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B. Dey, M. Mukerjee and B. Roy : Certain problems concerning estimation of income, output and expenditure aggregates as well as preparation of social accounts at a regional level. (Paper submitted to Indian Conference on Research in National Income, Seminar on State Income, December 1962.) (Mimeographed)

useful indication of aggregate changes in the regional economy."¹²

What is true of regional income also applies to the income from a particular sector of activity such as agriculture, manufacturing industry and so on. 'If we were to assume that the owner of productive resources earns income only in one sector then clearly income produced within a sector is the same as income accruing to owners of resources employed in that sector. In actual fact owners have composite incomes drawn from different sectors. It is then customary to refer only to those owners of resources employed in a sector who obtain their income mainly in this sector, as belonging to the relevant occupation. Thus an agriculturist is not one who gets some income from agriculture, howsoever small, but one who is mainly dependent on the agricultural sector. In this sense all income produced within agriculture may not go to 'agriculturists', and 'agriculturists' may earn a part of their income from non-agricultural occupations. Only if the non-agricultural income of the 'agriculturists' exactly balances the agricultural income of 'non-agriculturists' shall we be justified in arguing as if the

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Werner Hochwald: op.cit., p. 19.

'agriculturists' received the whole of the agricultural income and that much only. Income originating in the sector would be the same in amount as the income accruing to persons belonging to the relevant occupation. But the possibility of such an exact balance is very small. What is worse it is also conceivable that even the bulk of the income produced within agriculture is received by 'non-agriculturists'. This may happen, for example, if rents form a large part of income from agriculture but a small part of income of rent-receivers who then would be classed as 'non-agriculturists'. All this means that sectoral income as usually estimated is an index primarily of productivity.

When a study relates to sectoral income within a region (as the present study does), it is clear that income has to be interpreted principally, as an index of productivity. It is however likely to be true that non-residents own hardly any resources employed in the agricultural sector within a State in India. In that case income originating in the agricultural sector of a State would accrue almost wholly to residents. But still this income may be different from the income of a conveniently identifiable class such as 'agriculturists'. Further, we are interested in this study in making district estimates of agricultural income for the purpose of

elucidating inter-district diversities. What is true for the whole State would not certainly apply with equal force to a district since non-residents are more likely to own resources employed within agriculture in a district. The study of district agricultural incomes is therefore mainly a regional-sectoral study in which income is more appropriately interpreted from the standpoint of productivity.

It is true that whether as an index of welfare or of productivity net income estimate is better than estimate of gross income. We shall however construct series only of gross agricultural income in order to obtain a detailed quantitative view of the inter-district diversities in the agricultural productivity in Maharashtra over a period of eight years. Several considerations have guided our choice. For one thing estimation of net agricultural income requires (a) data needed to estimate gross agricultural output and (b) those on deductible costs. Districtwise data coming under (a) are both elaborate and fairly reliable. The same cannot be said about those falling under (b).

The items for which deductions are generally made to arrive at net agricultural income are (i) seed, (ii) manures, (iii) water charges, (iv) cost of feed of live-

stock required on farm, (v) depreciation of implements and other fixed assets and (vi) marketing charges. Year-to-year districtwise data are not available for any of these items. All the same the position as regards data availability is not unsatisfactory with respect to seed. The 'Studies in Economics of Farm Management' in Bombay and Madhya Pradesh provide data for four districts, viz., Nasik, Ahmednagar, Akola and Amravati. Further, the 'Technical Report of the All-India Rural Credit Survey' furnish^{es}/in addition information relating to Ratnagiri, West Khandesh (i.e. Dhulia), Poona, Kolhapur, Parbhani, Osmanabad, Nagpur and Chanda. Then again, a publication of the former Government of Hyderabad, viz., 'Agricultural Statistics (Quinquennial)' shows seed rate per acre for a large number of crops in each of the five Marathwada districts though, it is true, the data relate to an earlier period, viz., 1940-41 to 1944-45. Finally, the several reports on surveys of villages prepared by the Gokhale Institute of Politics and Economics, Poona (GIPE) could be used to obtain supplementary data.

Data on manure are not comparably satisfactory. As we go to other items we are struck by the total absence of districtwise data. Probably as deductible costs these other items are quite important. Thus if we are to accept the estimates of deductible costs for the whole

of the Maharashtra State for the years 1955-56 to 1958-59 prepared by the Bureau of Economics and Statistics, Government of Maharashtra¹³ it appears that items (iv) and (v) above account for as much as 60 per cent of the total deductible costs.¹⁴ Allocations of these costs by districts will have to be extremely arbitrary. Probably the net income estimates would be subject to substantially wider margin of error than gross income estimates.

There is a further consideration. We are interested not merely in inter-district comparisons of aggregate agricultural incomes but also in districtwise productivity in terms at least of the more important categories of crops. This means that the estimation of net income would require the allocation of deductible costs as between the major categories of crops. This may be possible in the case of seeds and, to some extent, manure but certainly not in case of the other items. The problem is not just one of availability of suitable type of data; it is basically conceptual in nature. Several of these costs are

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This Bureau will be referred to hereinafter as BESM.

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M.A.Telang and B.W.Chavan: Report on the State Income of Maharashtra, 1955-56 to 1958-59 (Quarterly Bulletin of Economics and Statistics, Bureau of Economics and Statistics, Government of Maharashtra, July-September, 1961), p. 74.

overheads which are not relatable to any specific type of cultivation. It would clearly be inadvisable to make cropwise deductions for some of the items and not others. Allocation of the overheads among crops would be arbitrary and hence would subject the net income estimates at the level of districts to a further margin of error. It is thus more useful to use gross agricultural income, rather than net agricultural income, as the index of productivity though, in strict theory, the former is inferior to the latter.

CHAPTER II

A REGIONAL INCOME STUDY OF MAHARASHTRA -- SOME ISSUES

As a constituent State of the Indian Union Maharashtra came into existence in May, 1960. It is made up of 26 districts. Before the reorganisation of States in November, 1956, 13 of these districts were in the old Bombay State, 8 in the old State of Madhya Pradesh and 5 in Hyderabad State which was disintegrated as a part of the scheme of reorganisation. In 1956 all these districts along with those of the present State of Gujarat were brought together to constitute the bilingual State of Bombay, which will be referred to hereinafter as the reorganised Bombay State. This new Bombay State was divided in 1960 into States of Maharashtra and Gujerat.

Of the thirteen districts of Western Maharashtra (which formed a part of the old Bombay State before 1956), four, viz. Thana, Bombay Suburban, Kolaba and Ratnagiri, are generally known as the Konkan region of Maharashtra. The remaining nine, i.e. Dhulia, Jalgaon, Nasik, Ahmednagar, Poona, Sholapur, Satara, Sangli and Kolhapur, are grouped together here as Deccan. The eight districts of

the former Madhya Pradesh State which are now in Maharashtra are ordinarily cited collectively as Vidarbha. The districts are Buldhana, Akola, Amravati, Yeotmal, Wardha, Nagpur, Bhandara and Chanda. Finally the five districts of the old Hyderabad State now in Maharashtra, viz. Aurangabad, Parbhani, Nanded, Bhir and Osmanabad, are together referred to commonly as Marathwada.

Table 2.1 shows the geographical area of the different districts as also of the districts-groups, viz., Konkan, Deccan, Vidarbha and Marathwada, which may be loosely described as the regions of Maharashtra.

The table gives the territorial dimensions of the area-units being considered for comparison in this study. It is seen that Deccan and Vidarbha are comparable in size. Marathwada is somewhat smaller and Konkan the smallest districts-group in size. Among the districts Chanda is the biggest in size whereas Bombay Suburban is negligibly small. In fact, as we shall see later, the latter district is absolutely unimportant from the point of view of agricultural income. The other districts are broadly comparable in size though Kolaba, Sangli, Kolhapur and Wardha are the relatively smaller-sized while Nasik, Ahmednagar, Poona, Sholapur, Aurangabad and Osmanabad are comparatively big in size.

TABLE 2.1 : GEOGRAPHICAL AREA OF MAHARASHTRA BY DISTRICTS

Districts	Geographical area (in sq. miles)	Proportion of area of a district to that of Maharashtra (per- centage)
Thana	3552.1	3.1
Bombay Suburban	169.0	0.1
Kolaba	2712.3	2.2
Ratnagiri	4982.8	4.2
KONKAN	<u>11416.2</u>	<u>9.6</u>
Dhulia	4850.3	4.1
Jalgaon	4392.0	3.7
Nasik	6013.0	5.1
Ahmednagar	6471.9	5.5
Poona	6023.0	5.1
Sholapur	5813.5	4.9
Satara	4029.7	3.4
Sangli	3317.1	2.8
Kolhapur	3188.4	2.7
DECCAN	<u>44098.9</u>	<u>37.3</u>
Aurangabad	6454.9	5.4
Parbhani	4846.7	4.1
Nanded	3989.7	3.4
Bhir	4216.9	3.6
Osmanabad	5510.3	4.6
MARATHWADA	<u>25018.5</u>	<u>21.1</u>
Buldhana	3766.0	3.2
Akola	4091.0	3.5
Amravati	4691.0	4.0
Yeatmal	5219.0	4.4
Wardha	2434.0	2.1
Nagpur	3834.0	3.2
Bhandara	3623.0	3.1
Chanda	10088.3	8.5
VIDARBHA	<u>37746.3</u>	<u>32.0</u>
MAHARASHTRA	<u>118279.9</u>	<u>100.0</u>

Source: Census of India, 1961, Vol. X (Maharashtra), Part II-A, Pp. 126-127.

In this study we shall be preparing estimates of agricultural income of three sets of territories: (a) the districts as constituted at present, (b) the districts-groups, and (c) the whole State. Of these estimates the more important for us are those for the districts and the districts-groups since the main purpose of this enquiry is to obtain a quantitative view of Maharashtra's agricultural economy over eight years in the light of year-to-year inter-district differentials as also those between the districts-groups.

Changes in district boundaries

Clearly one fact that needs to be noted at the outset is the one relating to the changes in the boundaries of districts that have occurred since 1951-52, the initial year of the period selected for study here. Data in many cases are available not for districts as constituted today but as they existed at the time data were collected. It will be seen that alterations in district boundaries have been of two types. Firstly, there were readjustments of boundaries as between some of the districts of the present Maharashtra State only. These will be referred to as 'internal' readjustments though they occurred even before Maharashtra was formed. If district-wise data compiled prior to these readjustments are not

suitably revised the income estimates for the districts concerned would be inaccurate though, of course, the estimate for the whole State -- or even for a districts-group, if the relevant districts belong to the same districts-group -- would not suffer.

The other set of alterations are those in relation to some of the adjoining districts in the neighbouring States and may be appropriately described as 'external' readjustments. If these are ignored not only the district but State estimates will also be subject to error. If our interest were only in State estimates there was no need to take note of the former type of readjustment of boundaries. However, we are in fact mainly concerned with estimates for the districts and therefore we must revise data wherever necessary to allow for both the sets of alterations. It may all the same be noted that it is the 'external' readjustments which have been quantitatively very much more significant.

The districts which have been subject to revision of boundaries some time or other since 1951-52 are :

(a) Thana and Bombay Suburban in Konkan, (b) Dhulia, Kolhapur, Satara and Sangli in Deccan, (c) Chanda in Vidarbha, and (d) Nanded and Osmanabad in Marathwada.

In order to lend perspective to the study it may be pointed

out that in^{the} case of 17 districts out of 26 there has been no alteration in boundaries and hence data are not required to be adjusted on this account. Further, the 'internal' adjustment between Satara and Sangli whereby a village with an area of 7.1 sq. miles was transferred from Sangli to Satara in July, 1958,¹ is evidently insignificant. We ignore this completely in this study. Thus the problem raised by boundary revision has to be considered in relation to only seven districts of which Bombay Suburban is of little consequence from the point of view of agricultural income.

Thana district with a geographical area of 3756.4 sq. miles before 1956 was reduced in size in that year with the transfer to Bombay Suburban district of an area of 78.2 sq. miles consisting mostly of Borivali taluka.² The 'loss' in territory for Thana was thus 2.1 per cent. Further, in 1960 when Maharashtra was formed the erstwhile geographical area of Thana of 3678.2 sq. miles was further cut down by another 126.1 sq. miles, i.e. 3.4 per cent, with the transfer of this territory to Gujerat State. Thus as compared to the geographical area of Thana before

¹Census of India, 1961, Volume X (Maharashtra), Part II-A, General Population Tables, p. 127.

²Data on changes in geographical area of districts cited hereafter are drawn from Census of India, 1961, Volume X (Maharashtra), Part II-A, General Population Tables, pp. 126-127.

1956 its geographical area now is less by 5.4 per cent.

Dhulia 'lost' villages in four talukas (viz. Akalkuva, Taloda, Nandurbar and Nawapur) to Gujerat State in 1960 with the formation of Maharashtra. The 'loss' was to the extent of 554.9 sq. miles which works out to 10.3 per cent of the geographical area of Dhulia before the change which was 5405.2 sq. miles. As for Kolhapur Chandgad taluka with an area of 394.0 sq. miles, formerly in Belgaum district, was transferred to this district in 1956. Its erstwhile area of 2794.4 sq. miles rose by 14.1 per cent.

When States were reorganized in 1956 three talukas of Bidar district in the former Hyderabad State (viz. Ahmedpur, Nilanga and Udgir) with an area of 1777.8 sq. miles were transferred to Osmanabad district of Marathwada. As a result the geographical area of Osmanabad, viz. 3732.5 sq. miles, increased by 47.6 per cent. In a similar way Nanded with an area of 3875.8 sq. miles 'gained' some territory in 1956 and 'lost' some. The net 'gain' was 890.2 sq. miles, i.e. 23 per cent. Later in February 1959, Rajura taluka (which at the time of States reorganisation in 1956 was taken away from Adilabad district now in Andhra State and joined to Nanded) was transferred to Chanda district in Vidarbha. Allowing

for this 'loss' of territory of 776.3 sq. miles Nanded 'gained' as a result of these two changes a net area of 113.9 sq. miles only. The geographical area of Chanda which was 9312.0 sq. miles before the change increased by 8.3 per cent.

It will be seen that the most significant change has been in the size of Osmanabad district. The position in respect of Thana is slightly complicated by the fact that there were two changes at two different dates, one of them 'internal' and the other 'external'. The same applies to Nanded with the additional fact that percentage change in territory in each of the two years was not of a quite small order. In the case of Dhulia, Kolhapur and Chanda the adjustment of boundaries was of one variety only, either 'internal' or 'external' occurring at one point of time but the change in territory involved was not insubstantial. We may however point out that we shall not be required to revise data on area and outturn of crops in all these districts in the relevant years. Revised data for earlier years relating to some of the important crops are already provided in some of the official publications. Later, we shall take the alteration of boundaries into account to 'correct' the remaining data appropriately. In conclusion, it seems proper to believe

that the need to 'correct' some data for only six districts would not introduce a significant element of error in the estimates even for these six districts, much less for Maharashtra.

The concept of a Region

It may be objected that region as contemplated in this study is only an administrative unit which is not the same as an economic region. It is however worth noting that the study of administrative divisions considered as regions has its own significance in view of special considerations. "Two considerations limit the otherwise infinite diversity of regional demarcations. First, a region's boundaries must follow those of the major areas used in tabulating general-purpose statistics, if such tabulations are to be used effectively in analysis, planning or administration for the region. Secondly, a region considered with any reference to possible action by State or local government authorities must logically follow the boundaries of such jurisdictional units. There can surely be very few really useful projects of regional research that do not carry some implication of possible action based on the finding."³

³ Edgar M. Hoover and Joseph L. Fisher: 'Research in Regional Economic Growth' in S. Kuznets (ed.): Problems in the study of Economic Growth (National Bureau of Economic Research, New York, 1949) (Mimeographed), p. 179.

It may also be stated that several attempts to demarcate the agrarian regions of India appear to indicate that Maharashtra as constituted today is composed of several regions and subregions the outermost boundaries of which roughly correspond to those of Maharashtra State.⁴ Among these Konkan and Deccan are generally shown as separate regions. Finally, it has been customary in this part of the country to regard Konkan, Deccan, Marathwada and Vidarbha as somewhat separate collectivities with some degree of emotive significance. In fact one of the problems often discussed in Maharashtra is that of emotional integration between these different constituents of the State. It thus makes sense to subject Maharashtra as also the divisions and the subdivisions forming it to a regional income analysis.

Choice of the Period

It is necessary to explain why we have chosen the specific period, 1951-52 to 1958-59. The reason for the choice of the end-point is relatively simple. Official data are available with a time-lag. When the present study was in an advanced stage of data-collection the firm

⁴ See Daniel and Alice Thorner : Land and Labour in India (Asia Publishing House, Bombay, 1962), pp. 39-47, for different attempts to demarcate agrarian regions.

data for the latest year available related to 1958-59. It was therefore thought proper to limit the study to a period upto 1958-59 and not extend it to later years even when the revised data for the succeeding years eventually became available.

The year 1951-52 as the initial point has been selected for a variety of reasons. For one thing it is the first year of the First Five Year Plan and as such marks a point of departure in the economic development of this country. Secondly, some time after Independence of the country in 1947 the Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India⁵ started devising new schemes for the collection and compilation of agricultural statistics by the States. These were designed to effect a uniformity in definitions and an improvement in the quality of the data reported. Thus the DESAg evolved soon after Independence new standardised definitions relating to categories of land utilization to be reported by States. Then again, a scheme for improving collection of statistics on agricultural prices was circulated to the States in December, 1947. All these schemes were eventually adopted by

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Following the practice of the National Income Committee (i.e. NIC) we shall refer to this Directorate hereafter as the DESAg.

Bombay, Madhya Pradesh and Hyderabad, i.e. the States which then included the districts that constitute Maharashtra at present. However, the adoption and efficient operation of the new schemes by the three States was not necessarily concurrent in time. All the same it appears that since 1951-52 in any case data in all the three States have been reported on the improved lines.

Thirdly, since Independence, an important change in the estimation of outturn of crops has taken place as a result of the progressively increasing use of crop-cutting surveys for the purpose. Here also we find that the use of this more dependable method of outturn-estimation was initiated in the three States in different years with gradual extension of the method to additional crops. However, by 1951-52 the importance of cropcutting surveys in estimational work in the three States had grown substantially though, as we shall note later, there was, to be sure, some divergence in the degree to which this method had become important by 1951-52 in the estimation of outturn of crops respectively in Konkan, Deccan, Marathwada and Vidarbha, as judged by the number and the type of crops which were brought within the scope of these surveys.

Finally, the independence of India initiated the

process of merger of former princely States in neighbouring areas. It is well known that the reporting of data in these princely States, barring a few exceptions, was much more unsatisfactory than that in the old Indian provinces. After merger of the princely States into Bombay and Madhya Pradesh these States "took immediate steps for extending the system of reporting to areas merged into their States by establishing suitable machinery."⁶ Clearly some time must have elapsed before data reported for merged areas under the new conditions compared well with those for the States concerned in point of coverage and accuracy. To allow for this fact we choose 1951-52 as the initial year assuming that by this time the required improvement had taken place in the quality of data compiled for areas merged into Bombay and Madhya Pradesh.

Why Agricultural Income?

After explaining the choice of a specific period we may state why only the agricultural income of Maharashtra, and not the whole of the State Income, is being studied here. One reason is the availability of the appropriate

⁶ S. C. Chaudhri : 'A Survey of the Improvements in Agricultural Statistics since Independence', in V.K.R.V. Rao and others (edt.) : Papers on National Income and Allied Topics, Vol. I, (Asia Publishing House, Bombay, 1960), p. 9.

kind of data for all the eight years. To estimate gross agricultural income we require data on area, output and prices of crops. Fairly reliable data of this variety are available for all the eight years. The same cannot be said about many other sectors of the regional economy. What is more important our interest is in district-level estimates. Data adequately comprehensive and reliable at this level are being furnished only for the agricultural sector.

It may be further pointed out that even if the requisite data were available many sectors of a regional economy would raise a problem almost non-existent in the case of the agricultural sector, at least in India. The problem is that of allocating to a region the value of product created by supra-regional enterprises such as, for example, the Railways or industrial enterprises with branch offices in many parts of the country. This problem does not arise in the case of income produced in the agricultural sector of Maharashtra. Thus the estimates of agricultural income are likely to be far more accurate than those for many other sectors -- particularly for districts. Given the further fact that in India agriculture accounts for a substantial proportion of the aggregate income, we may be warranted in assuming that the inter-area differentials within a region indicated by a series of estimates

of agricultural income would, for most districts, be a nearer approximation to inter-area diversities of economic conditions in general than a comparable series for non-agricultural sectors.

There is a further point which applies particularly to Maharashtra. It is well-known that Maharashtra is among the most industrialised States in India. It has had a per capita income significantly higher than the national average.⁷ However, it has been duly pointed out that this industrial development of Maharashtra is confined for most part only to one area, viz. Bombay City and its immediate vicinity.⁸ In order to get a proper view of Maharashtra's regional economy it would be advisable to prevent this lopsided industrial development from reflecting itself in estimates. The best course therefore is to concentrate on the contribution to income by a sector which is of primary importance in itself in the different districts and still will leave out a large part of the income produced in Bombay City and nearby region which would mostly be in the field of manufacturing

⁷ See National Council of Applied Economic Research (NCAER), New Delhi : Techno-Economic Survey of Maharashtra (1963), p. 212.

⁸ Ibid., p. 7. See also K.R.Ranadive: 'Pattern of Industrial Development in Maharashtra' in Indian Committee for Cultural Freedom : Problems of Maharashtra (1960), pp. 39-65.

industry, commerce and finance. Such a sector evidently is agriculture.

Lastly, as was pointed out in the preceding chapter it is most likely that in India income produced in the agricultural sector of a region accrues almost wholly to the residents of the region only, unlike income from any other major sector. If, further, agriculture contributes a substantial proportion of aggregate income and provides at the same time income to a large majority of population then variation in income from agriculture indicates a corresponding variation both in the largest component of aggregate income as also in the income received by the majority of residents of a region. In that case agricultural income may serve as something more than just a productivity index.

The Problem of Estimational Method

Some work has been done on the estimation of small area incomes, e.g. county incomes, in U.S.A. Two methods have been employed in making these income estimates. One method consists in using the statistical data available for a county itself to construct the estimates. Alternatively there is the method of apportionment whereby State income is allocated among the constituent counties on the basis of specific indicators. "This approach avoids

the limitations imposed by the inadequacy of certain types of county data, permits more valid comparisons among counties, and has the advantage of forcing the investigator to recognise more fully and state more explicitly his underlying assumptions."⁹

However, even in the context of the United States the latter method has limitations. Clearly the accuracy of the county estimates will depend upon (a) the reliability of the State estimates and (b) the appropriateness of the allocators used. So far as the estimate of agricultural income of Maharashtra State is concerned the only one available is that prepared by the BESM as a part of its estimate of State Income.¹⁰ Estimates are made for the years 1955-56 to 1958-59. Thus a part of the period chosen by us is not covered by the estimates of the Bureau. That itself should make them of limited use to us even if satisfactory allocators are to be discovered.

But more fundamentally the BESM estimates are unsatisfactory in many ways. Since the BESM was interested

⁹Walter Isard : Methods of Regional Analysis - an Introduction to Regional Science (The Technology Press of the Massachusetts Institute of Technology and John Wiley and Sons, Inc., New York, 1960), p. 92.

See also W.M.Adamson: Measurement of Income in Small Geographic Areas (The Southern Economic Journal, April 1942), pp. 481-82.

¹⁰ The NCAER has also estimated the agricultural income of the States for the year 1960-61. cf. NCAER: Agricultural

in estimating the income of the whole State there was clearly no need to take into account the alterations in district boundaries due to 'internal' readjustments. But the Bureau seems to have ignored even the 'external' readjustments, particularly in the case of Thana and Dhulia. Then again, some of the byproducts are not evaluated at all. This becomes clear if we compare the list of byproducts mentioned in C.S.O.'s NIS and that in the Report on Maharashtra State Income prepared by the BESM.

Further, there is one important inaccuracy in the BESM estimates. We are told that the value of cotton is derived on the basis of data on outturn and price of cotton available with the Department of Agriculture, Government of Maharashtra. However, in these data which the Department publishes in its 'Season and Crop Reports' (SCRs) the outturn relates to cotton (lint) and price to cotton (unginned). It appears that the Bureau has used the price of cotton (unginned) to evaluate the outturn of cotton (lint). This seems to be intriguing because earlier the Bureau -- at that time, the Bureau of Economics and Statistics, Government of Bombay (BESB) -- had, in its

Income by States, 1960-61 (Occasional Paper No. 7, August 1963). As the estimate relates only to one year and that too a year outside the period selected by us the NCAER estimate need not be considered in the present context.

work on the Income of the Reorganised Bombay State for the year 1954-55, had correctly converted outturn of cotton (lint) into that of kapas (seed-cotton) and then evaluated^{the} ¹¹latter.

Moreover there is a degree of vagueness about the methods followed in some contexts. Thus, for example, we are given the impression that outturn of crops is evaluated districtwise at district prices. But as we shall see later there are gaps in data on prices in districts. No indication is given as to the way the gaps are handled. In view of all this we should be wary of using these State aggregates for obtaining district series even if accurate allocators were available.

It will also be further noted that for the major crops in Maharashtra in any case elaborate district-level data are available, and these crops presumably account for an overwhelming proportion of agricultural income. As for the remaining crops data are lacking not only for the districts, they are lacking for the State as well. Under the circumstances it seems more advisable to use the more direct method of estimation of income of districts than the alternative method of apportionment.

¹¹ See Bureau of Economics and Statistics, Government of Bombay : Report on State Income of Reorganised Bombay State, 1954-55, (Quarterly Bulletin of Economics and Statistics, Bombay, July, 1959), p. 20.

There is an additional point about estimational method. It is a variant of the Net Output method which is being used here. In theory an alternative is to add up incomes paid out to or received by productive resources engaged in the sector. This is the Income-distributed method. One may even say that as a method of estimation the former is likely to be less reliable than the latter. The reason is that the Net Output method requires two series of estimates, one of gross value of output and one of deductible costs, with the result that the "possibilities of error are doubled."¹² All the same the use of the Income-distributed method to compute agricultural income is found to be difficult even in advanced countries. This is because "the factor shares in agriculture are not clearly differentiated, except where agriculture is carried on by corporate enterprise or by cooperatives."¹³ Probably the nearest approach to the use of this method for estimating agricultural income is to utilise farm wage data in order to frame indicators for allocating agricultural income of a larger area (e.g. a State) among its constituent units (e.g. the counties).¹⁴

¹² Paul Studenski: *The Income of Nations, Theory, Measurement and Analysis : Past and Present* (New York University Press, 1958), p. 257.

¹³ Paul Studenski : op.cit., p. 252.

¹⁴ See John L. Fulmer : 'Measurement of Agricultural Income of Counties', in *Regional Income, Studies in Income and Wealth, Volume Twenty-one*, by the Conference on Research in Income and Wealth (Princeton University Press, 1957), pp. 343-376.

However, in the case of the present study even such a course is ruled out though we are concerned with the agricultural income in small areas, viz. districts. For one thing we do not have any estimates of agricultural income for the State of Maharashtra for a part of the period in question. As for the available State-level official estimates for the remaining years, they need revision in several respects, as was pointed out earlier. Secondly, we have hardly any reliable year-to-year data on farm wages which can be of use in constructing possible indices of allocation. But what is fundamental is that even if these data were available in an adequate degree they would have failed to provide satisfactory allocators as farm wages are an unimportant element in the income distributed in the agricultural sector in India. The Income-distributed method is thus of little use to us. In fact, if dependable estimation by the Income-distributed method were possible we would have used net income series for inter-district comparison. But the difficulty of using this method and the arbitrariness of data on deductible costs for the districts have compelled us to employ gross, rather than, net income for the comparison in view.

Reliability of Estimates

There was considerable divergence in India during the 'fifties between the States in point of coverage and reliability of agricultural statistics. In the different States diverse methods with differing degrees of reliability were employed for reporting figures of area under crops and estimating their outturn. Definitions of prices as also the methods of averaging quotations used were not always uniform in the States. The All-India estimates of agricultural income were made on the basis of area and outturn statistics available separately for the States. It seems therefore that the estimates of agricultural income of the States for the 'fifties prepared with the utmost care would spread themselves about those for India, some being more and some less, accurate than those for the whole of India.

The estimates of income from agriculture for the whole of India are mainly based upon¹⁵ three types of data : (a) those supplied by State agencies, (e.g. "Area, Production and Average Yield per acre of Principal Crops in India" issued by the DESAg draws its figures from returns forwarded by the State governments), (b) those

¹⁵ The reference is particularly to the estimates prepared by the C.S.O. and published in the NIS.

collected independently by Central government organisations, e.g. Marketing Reports (MRs) on various agricultural products prepared by the Directorate of Marketing and Inspection, Ministry of Food and Agriculture, Government of India; or Studies in Economics of Farm Management published by the DESAg and so on, data in these reports being ordinarily available Statewise, and (c) those furnished in the several reports of the N.S.S., the data being supplied for the country and by population zones, each zone consisting of several States.

It will be seen with respect to data under (a) that those for some States are obviously more reliable than those for others. Since All-India income estimates are based upon data coming from all States it is clear that on this score estimates for some States would be superior to those for the country. As we shall see later the area statistics available districtwise for Bombay, Madhya Pradesh and Hyderabad States between 1951-52 and 1955-56 and for reorganized Bombay from 1956-57 to 1958-59, collected as they were by the method of complete enumeration of fields under crops, were more reliable than the corresponding data for many other States. Similarly outturn of some important crops in these States was estimated by the crop-cutting surveys during the period. This also gives outturn data for the States an edge over similar data

for several other States. The same can broadly be said about prices data. Presumably therefore estimates of agricultural income for Maharashtra are superior to those for India to the extent that the two sets of estimates are based on sources of data cited under (a) above.

As for sources listed under (b) data therein are available as much for arriving at State estimates as those for the country. However, the relevant MRs give data not for Maharashtra (which came into existence only in 1960) but for Bombay, Madhya Pradesh and Hyderabad. A larger element of arbitrariness is involved in using data relating to these States for the different divisions of Maharashtra. But we have not made much use of MRs in preparing our estimates. The surveys on Economics of Farm Management were also conducted in Bombay and Madhya Pradesh States. The data relate to selected districts, and fortunately all the four districts in the two States selected, are from Maharashtra. However, this point is of little interest. The data in Studies in Economics of Farm Management are ordinarily used, if at all, for deriving estimates of some of the deductible costs. We are not required to use these data as we are constructing a series only of gross income.

The data grouped under (c) give to All-India estimates

a lead over State estimates as the data are available for the country as a whole and by population zones but not Statewise. To the extent the N.S.S. data are collected more systematically the national estimates would have a measure of superiority over estimates for any State. However, the N.S.S. data have been used by the C.S.O. in NIS for two purposes : (i) for arriving at the value of byproducts and (ii) for estimating some of the netting items or deductible costs. We shall be arguing in the next chapter that the use of N.S.S. data by population zones to evaluate the byproducts in districts will not in all probability introduce a significant margin of error in estimates. If this be true it would probably be more ^{the} so in/case of estimates for a State. The N.S.S. data on netting items are of no relevance to us as we shall be estimating only gross, and not net, agricultural income. It seems reasonable to conclude that carefully-prepared estimates of gross agricultural income of Maharashtra are likely to be superior to those for India.

Our interest however is not in estimates for Maharashtra as such but in those relating to districts and districts-groups. Technically what is true of a State estimate need not apply to a district estimate. However, the State estimates here are built up mostly with the help of estimates separately for the districts, much

of the basic data needed being available district-wise. We shall also explain later why our district estimates are such as should inspire a reasonable measure of confidence.

CHAPTER III

AREA AND OUTTURN OF PRINCIPAL CROPS IN THE DISTRICTS OF KONKAN AND DECCAN -- SOURCES OF DATA

It was pointed out in the preceding chapter that an output method will be employed in this study for estimating the income from agriculture in the districts of Maharashtra. Looked at from the Production angle income originating in the agricultural sector is the net value of the agricultural produce. This means that we shall have to estimate the outturn of various crops the gross value of which is then to be derived by utilising the appropriate data on prices. Thereafter the net value could be arrived at by deducting values of certain items. We shall, however, stop only with gross value, for reasons already explained. Since we are interested in making elaborate estimates to the extent possible at the district level it would be convenient to devote this chapter and the next few only to the question of deriving figures of area and outturn of crops.

In the present chapter we concern ourselves with the problem of sources of data on the area and outturn

of crops only in the districts of Konkan and Deccan. The main reason for treating these two districts-groups together is that several sources of data to be used in their case are common and are distinct from those relating to Vidarbha and Marathwada. This is clear in the case of publications of the old Bombay State which give districtwise breakdown of data. This should also apply to publications such as, for example, MRs. which give data Statewise, and not districtwise. As MRs. give areas of concentration in the different States for the selected crops they could be of use, though marginal, even for a district-level analysis. Evidently in that case data relating to the old Bombay state in such publications could be serviceable, if at all, in making estimates relating only to the districts of Konkan and Deccan. It is thus convenient to consider these two districts-groups together.

In order to derive outturn of crops one requires data on (a) area under different crops and (b) average yield per acre for each crop. Where total outturn figures respectively for the various crops in a district are available on a reliable basis there would ordinarily be no need for gathering separate information on (a) and (b) above in respect of the relevant crops. However, we shall prepare district area tables also as area figures would

be required later for interpretative purposes.

The sources of basic data which can be conveniently used for the period under review are mostly official ones. As a result of extension in coverage and improvement in the mode of collection of basic facts over the last decade and more it has become possible to utilise official data with a greater degree of confidence. The same could not have been said about official estimates prior to Independence with the result that one needed then to make considerable adjustments in official figures before rendering them serviceable in an adequate degree.

Probably it would be convenient to classify the available sources of data on area and outturn into (i) primary, and (ii) secondary ones. Primary sources would mean publications which provide figures drawn directly from the primary records of the departments concerned or from surveys such as, for example, those of the N.S.S. A good example of such a source is the Season and Crop Report (SCR) of a State government. By secondary sources we mean publications which give the data available in the primary publications at a second or third remove, e.g. Statistical Abstract (SA) published by a State government.

In relation to Maharashtra a further distinction between the two sources of data is conceivable. As we

have already noted in the preceding chapter districts of Maharashtra have passed through three different stages of alignments during the period under review. The primary sources would broadly be those which give data in the framework of the specific alignment at the time. Thus before 1956-57 it was the Season and Crop Report, Madhya Pradesh (SCRMP) which was one of the primary sources for Vidarbha data whereas from 1956-57 to 1959-60 its place was taken by Season and Crop Report, Bombay State (SCRB). On the other hand, a secondary source may give data for the given districts (as presently constituted) for a series of years to cover periods of changing alignments. Thus, for example, Statistical Abstract, Bombay State (SAB), 1957-58 gives data for different districts of Maharashtra (and Gujarat) even for years before the reorganised Bombay State was formed. Such a source is likely to prove very useful in some contexts.

We shall list the more important primary and secondary sources of data for the districts of Konkan and Deccan. The former include : SCRB; 'Estimates of Area and Production of Principal Crops in India', Vol. II¹ ('Estimates') issued by the DESAg; Indian Agricultural

¹

Volume II is cited as it gives data districtwise.

Statistics (IAS) also published by the DESAg; MRs for different crops; to some extent, 'Agricultural Situation in India' (ASI), a monthly issued by the DESAg; Reports on village surveys conducted by the GIPE, and so on. Among the relatively important secondary sources we have : SAB; Statistical Abstract for Maharashtra (SAMh); 'Estimates of Area, Average yield and Production of Principal Crops of Maharashtra State' (EMh) published by the Department of Agriculture, Government of Maharashtra; 'Basic and Current Agricultural Statistics of Maharashtra State' (BCAS) issued by the same agency; Maharashtra and Gujerat Agricultural Statistics (MhG) published by the DESAg; 'Agricultural Life in Maharashtra - A Statistical Picture' (in Marathi) by the GIPE, and so on.

It is true that since Maharashtra was formed of areas which formerly belonged to the three States of Bombay, Madhya Pradesh and Hyderabad involving several readjustments in district boundaries, it was essential for the secondary publications to revise figures for earlier years for several districts as provided from time to time by the primary sources. Thus in the case of Konkan and Deccan districts, boundaries of three districts (viz. Thana, Dhulia and Kolhapur) were revised under the reorganisation of States. In this context some of the derived sources have come to possess an element of

'primary reporting'. They have revised some of the figures for earlier years to allow for boundary readjustments. This, for example, is the case with EMh and BCAS. Clearly this revision was made by consulting the primary records of the relevant departments of the State governments.

One may however point out that the element of 'primary reporting' in this sense in the secondary sources is not very substantial. For one thing this has been possible only in the case of Kolhapur district since a whole taluka was joined to this district. No such modifications have been attempted with regard to data for Thana and Dhulia districts since these districts 'lost' villages. Then again, even in respect of Kolhapur district it may be pointed out that the revised figures relate to data for years before 1956-57. From 1956-57 onwards the SCRB itself gives the 'primary' data for the enlarged district. Further, it is true that EMh and BCAS have made some corrections in SCRB figures but such corrections are minor in character though certainly we have to take note of these alterations. We have thus to turn to secondary sources only when the primary sources fail to provide the required information in a revised form or where secondary sources are known to have made changes in view of earlier misreporting in the primary publications.

Though we shall be turning to the secondary sources as required the basic question really is : which of the primary sources should be depended upon and to what extent in order to obtain data on area and outturn? Clearly the sources must be analysed with reference to (a) coverage of data and (b) reliability of estimates. Let us consider the problem of coverage first. The problem of coverage is particularly important for this study. Firstly, we are interested in results at the district level. Many sources of data used for income estimation at the national or state level may be of little use to us. Secondly, we are constructing series for the districts of Maharashtra. Many sources give data for old States of Bombay, Madhya Pradesh and Hyderabad. Hence even if allocation techniques could be devised for breaking down State totals into those respectively for districts and therefore theoretically State data could be employed for a district-level analysis, the sources mentioned would be unsatisfactory in point of coverage for this study. We are trying to obtain the figures of outturn of crops respectively in the different districts of Maharashtra from 1951-52 to 1958-59. This means that we have to analyse coverage in respect of (i) outturn, (ii) crops, (iii) districts and (iv) years.

It will be seen that sources such as ASI and MRs

are of limited use to us. ASI ordinarily gives outturn data for a large number of crops -- even minor crops. So also do MRs. But the usefulness of the former is restricted by the fact that it provides data Statewise and not districtwise. Then again, the State in question for the period under review is the old or reorganized Bombay State, not the State of Maharashtra. A similar handicap applies to data in MRs. In addition, for a given crop data of the MRs do not cover all the years from 1951-52 to 1958-59.

That leaves mainly SCRB, IAS and 'Estimates'. In respect of outturn and crops, SCRB and 'Estimates' would score over IAS because IAS gives only area figures whereas the other two provide outturn figures in addition. It may be noted that figures of area are presented in IAS with a breakdown more detailed than that in the 'Estimates', for example, with respect to 'condiments and spices', 'fruits and vegetables' and so on. However SCRB gives an even more detailed breakdown of area figures than the IAS.

It is true that besides giving a more detailed breakdown by crops IAS also provides data that are more complete than those in 'Estimates'. "For example, 'Estimates' exclude data for unimportant areas which are either not available in time or the collection of which entails

undue labour. The returns of Agricultural Statistics which present a complete picture of cropping pattern, take into account all areas sown to the crop."² One more reason why coverage of area statistics in IAS is wider than that in the 'Estimates' is that for inclusion in the 'Estimates' statistics of both area and outturn would be essential which is not the case with IAS.³ At the same time we may also note that "in some cases cropped areas in 'Forests' are reckoned for purposes of crop estimates under the respective crops, but are included under forests in Land Utilisation Statistics."⁴ One does not know whether this applies in the case of Konkan and Deccan districts and if so, for which crops. Presumably area under crops, if any, so unaccounted for is insignificant. One would therefore feel that coverage of area figures in IAS is wider than that in 'Estimates'. But the same degree of completeness in coverage marks area statistics in SCRB as well since the returns furnished for IAS are published in SCRs with a more detailed breakdown and with later revisions. Hence if figures of area under any crop left out in the 'Estimates' are required SCRB is likely to be more useful than even the IAS.

²DESAg: Guide to Current Agricultural Statistics (Revised Edition) (1962), p. 16.

³R.C.Desai : Standard of Living in India and Pakistan, 1931-32 to 1940-41 (Popular Book Depot, Bombay 7, 1953), p. 2.

⁴ DESAg : op.cit., p. 16.

We must therefore make a comparison between SCRB and 'Estimates' in the matter of coverage as related to outturn of crops. For the districts of Konkan and Deccan we get both from SCRB as well as the 'Estimates' outturn data over the period in question pertaining to crops which accounted for a substantially large proportion of area under cultivation. All the same the coverage in SCRB is seen to be wider than that in the 'Estimates'. SCRB provides outturn figures separately for different types of residuary cereals, viz. Italian millets, kodra, little millets and common millets, as also several kinds of pulses other than gram and tur, viz. mug (green gram), udid (black gram), horse gram and masur, which the 'Estimates' do not give. The SCRB should thus be more useful on this account, if the data are reliable. In the estimation of national income for India data relating to these crops are derived from ASI but this source is hardly of any use to us as the data are available Statewise and not districtwise.

On the other hand, the 'Estimates' unlike SCRB provide districtwise figures of outturn of the following crops: pepper (black); ginger (dry); and jute. However, of the above crops jute is hardly grown in any of the districts of Konkan and Deccan, and the outturn of

pepper and ginger in some of these districts where the crops are grown, is quite small. There is a further point. The 'Estimates' give outturn data relating to non-forecast crops such as bananas, papaya, sweet potato, tapioca, turmeric, sann-hemp, indigo, opium and lac as also on plantation crops, viz. tea, coffee, rubber and coconuts. We do not get outturn data pertaining to these crops in the SCRB. However, some of these crops such as opium, indigo, tea, coffee and rubber are not grown at all in the districts under consideration. What is more important, the 'Estimates' do not provide figures by districts and hence the data are of little direct use for our purpose. In the matter of coverage with respect to outturn and crops then the SCRB seems to be the most serviceable from our point of view. One may however note that this difference in the coverage in the two publications is somewhat narrowed in point of usability by the fact that year-to-year data on prices of some of the crops (e.g. most of the minor cereals) are not available.

As regards coverage in point of years both SCRB and the 'Estimates' provide data for all the years in question. We shall therefore consider the coverage in respect of districts. Clearly those publications which provide data Statewise and not districtwise are inferior from our

point of view. We must therefore compare SCRB and the 'Estimates' which give data by districts. One requirement is that data should relate to districts as they are constituted today. In this case both SCRB and the 'Estimates' are equally satisfactory or unsatisfactory. Data relating to Kolhapur district prior to 1956-57 and those pertaining to Thana and Dhulia districts for the whole period in the two sets of publications need to be properly adjusted. Here we have to depend partly on secondary sources such as the EMh and BCAS. Even then the data for Thana and Dhulia districts remain unadjusted and hence we shall be required to process the available data as will be seen later.

Another conceivable reason for inadequacy with regard to coverage in the present context is that prior to merger of former princely states the official publications provided data for districts exclusive of the areas of these states. Then again discrepancy in year-to-year figures which later reporting of the merged areas would possibly engender is important from our point of view since we are interested not just in income in a given year but over a period. Such a discrepancy would vitiate comparability. This problem is probably not important in relation to the two districts-groups being considered here. By 1951-52 the princely states in Deccan and

Konkan had merged, and official figures since then relate to districts inclusive of merged areas. We are also told that the State government of Bombay took immediate steps for extending the system of primary reporting of agricultural statistics to these merged areas.⁵ If so, this has presumably improved the coverage of data adequately for Deccan and Konkan districts by 1951-52, the initial year of the period selected here.

There is also an additional reason why we can regard SCRB as fulfilling coverage requirements more adequately than the 'Estimates'. The outturn figures in the 'Estimates' relating to crops other than cereals and pulses leave out of account any estimates for 'non-reporting' areas. This is not the case with SCRB.⁶ That would give SCRB data an edge over those in the 'Estimates'. Thus from the point of view of coverage SCRB seems to be the most useful among primary sources of data.

The problem of reliability is twofold. There is firstly the need to compare alternative sources in the matter of reliability, and secondly, the question of the degree of reliability in the best possible source. It

⁵S.C.Chaudhri : 'A Survey of the Improvements in Agricultural Statistics since Independence', in V.K.R.V. Rao and others (edt.) : Papers on National Income and Allied Topics, Vol. I, (Asia Publishing House, Bombay, 1960), p. 9.

⁶C.S.O., Government of India : NIS, p. 20.

will be seen that issues that arise here pertain to the mode of collection of data. We may note at the outset that MRs do not fare well in this respect. The data in the MRs are collected not by the method of complete enumeration or that of sample surveys but by means of personal enquiries with several agencies dealing with a given crop. This may leave room for a substantial margin of error. These data should therefore be used only as a last resort. It may be that data provided by ASI are reliable in a greater degree but these are mostly unusable for our purpose because of the coverage difficulties which they raise.

We are thus brought back to SCRB, 'Estimates' and IAS. The first two give data on area and outturn for several crops, the last on area only. This does not necessarily mean that ^{the} in/case of crops for which SCRB and 'Estimates' give outturn data IAS should not be considered at all. Theoretically, if there were reasons to believe that the IAS area data for these crops were more reliable than the area data in the other two publications, the need to use the IAS data with whatever reliable figures of average yield that are available elsewhere, would be clearly indicated. Fortunately such a need does not arise. The area data in SCRs are mostly the same as those published in IAS; if at all, the former give the

latest figures received after submission of returns for the compilation of IAS.⁷ This indicates a superiority of SCRB area figures over those of the IAS and even of the 'Estimates'.

Even then a selective use of IAS area figures would be recommended if (a) IAS gives figures of area under crops for which SCR provides neither area nor outturn data, and also if (b) ^{the} in/case of these crops the area figures in the 'Estimates', though available, are not as reliable. The problem however does not arise in ^{the} case of Konkan and Deccan districts of Maharashtra. It is true that SCRB does not give outturn data pertaining to crops such as pepper, ginger, jute etc. whereas 'Estimates' do. But apart from the fact noted earlier that these are crops absolutely unimportant in Konkan and Deccan districts there is the further fact that SCRB gives area data for these. In fact so far as area data pertaining to Konkan and Deccan districts are concerned there is not a single crop for which IAS provides data and SCRB does not, the breakdown by crops in the latter publication being far more detailed than that in the former. Hence if area data for these districts are required to be used one need not turn to IAS. We are thus left with

the comparison between SCRB and 'Estimates' from the point of view of reliability.

Our basic interest is in outturn figures. But total outturn as shown in the two sets of publications are arrived at by multiplying the estimated average yield into area under the given crop. It is thus necessary to consider separately the reliability of the area figures and that of figures of average yield. Clearly comparison has to be made on the basis of methods employed for estimating area under crops and average yield of each crop. One aspect of the methods relates to the agencies responsible for collecting and processing data. It will be seen that the problem here is not so much that of comparison between SCRB and 'Estimates' since both the sources draw upon data made available by the same set of agencies. It is more a question of the degree of reliability of the data from the best available source.

As regards the existence of primary reporting agency, Bombay, of which Konkan and Deccan formed a part, was one of the States in India which possessed primary reporting agency throughout the period of interest to us. Besides, it was stated above that the agency was also extended without delay to merged areas formerly belonging to princely states. One point in relation to agencies

which is pertinent here is as regards the efficiency of work of these agencies. It is partly a matter of sincerity and honesty of work. Expressions of doubts in this respect are not uncommon. Thus the National Income Committee probably implies as much when it states as follows : "It is suspected that patwari records of land utilisation may become conventional in the sense that year to year fluctuations are not always recorded and the estimates of area under any crop, therefore, tend to become serially correlated to a large extent."⁸ Presumably the incidence of this factor, if it is operating, is uneven in the different parts of India or even a State. But it would be palpably impossible to obtain even a rough idea about this and to judge therefrom the extent of inaccuracies that might have possibly crept into the area and outturn statistics of the districts in question. We may however note that according to one view "evidence is steadily accumulating through recent sample surveys that the (patwari) system on the whole provides an accurate picture of land utilisation and crop acreages. Direct sampling checks that have been made of the pat-

waris' record in the last one or two years lead to the same conclusion."⁹ This means that probably we can have greater confidence in area statistics than in those relating to outturn.

Efficiency in work is partly also a matter of competing demands on the time of the respective agencies and their training. We are told that as a result of the efforts of the DESAg burden of work on the primary reporting agency has been reduced so that it can devote more attention to the work of collecting agricultural statistics, and further that facilities have been provided for training of officials in the work of collection and processing of agricultural data.¹⁰ To the extent this has progressively improved reliability from year to year it will raise for us the problem of comparability of the yearly estimates.

Probably the problem is not quite significant in relation to the districts-groups under consideration. Even as early as in 1949-50 a 'talathi' in the Bombay State was in charge of only three or four villages --

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V.G.Panse and V.R.Rao : System of Agricultural Statistics in India (Reprinted from the Bulletin of the International Statistical Institute, Vol. XXXIII : Part V), p. 147.

¹⁰S. C. Chaudhri : op.cit., pp. 18-19.

a burden which was comparatively lighter than in many other parts of India.¹¹ In SCRBs of earlier years, viz. 1951-52 and 1952-53, we do find references to discrepancies in figures for successive years due to error in reporting and due to the fact that primary reporting agency had not fully assimilated the new standardised definitions relating to categories of land utilisation introduced by the DESAG for the first time in 1950-51.¹² All the same errors in reporting of figures in an earlier year relate to hardly a district or two in Konkan and Deccan. Further, there is no mention in SCRB, 1953-54 onwards of discrepancies due to lack of adequate assimilation by the primary agencies of the standardised definitions. Then again, it appears that the discrepancies occur in large part for items under non-cropped areas, the breakdown for which was made more elaborate under the new definitions and hence was probably not adequately mastered by the reporting agency. Presumably therefore comparability would be vitiated, if at all, on this account only in a small degree.

We shall now consider reliability separately in

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See Coordination of Agricultural Statistics in India (Report of the Technical Committee) (Government of India, Ministry of Agriculture, 1949), p. 4.

¹² See SCRB, 1951-52, p. 4 and SCRB, 1952-53, p. 5.

respect of figures of area and those of average yield. It will be seen that since a primary reporting agency existed in the districts of Konkan and Deccan all throughout the period in question the method of estimation of area under crops as shown in official publications has been that of the field-to-field enumeration by the talathi during harvest inspection. Clearly this method would yield better results than, say, the chowkidari system which prevailed at one time in Bihar, Bengal and Orissa. It is even likely to provide more reliable figures than the method of sampling, particularly for a type of analysis in which we are interested here, viz. the district-level analysis. "The method of random sampling for acreages cannot be a substitute for the complete enumeration method. For, although the sample survey can give reliable estimates of area under principal crops for the province as a whole, it will not yield accurate figures for smaller administrative units such as tehsil or district and in respect of minor crops."¹³

There is however a further aspect of the reliability of area data, viz. that relating to estimates for un-

surveyed and/or non-reporting areas. Data pertaining to unsurveyed areas are clearly less reliable than those for surveyed ones. The former are generally arrived at on the basis of "distribution of crops in the neighbouring surveyed villages as well as opinions of leading men of the villages."¹⁴ All the same presumably such areas are relatively unimportant in Konkan and Deccan districts. It is mentioned in the 'Co-ordination of Agricultural Statistics in India' (1949) that the whole area in the Bombay State was surveyed "but for some Inam and alienated villages."¹⁵ But probably the reference here is to Bombay exclusive of the merged areas of the former princely states. We get in the "Guide to Current Official Statistics (Bombay State)" (1955) a distribution of unsurveyed villages in the districts of the State inclusive of merged areas.¹⁶ One notes that all districts of Konkan and Deccan except West Khandesh (i.e. Dhulia) figure in the category of districts with less than 5 per cent of villages unsurveyed and in which these villages were distributed in most of the talukas in the district. Only in the case of the district of Dhulia the relevant proportion was more than 5 percent

¹⁴ Bureau of Economics and Statistics, Government of Bombay : Guide to Current Official Statistics (Bombay State), 1955, p. 20.

¹⁵ See, p. 5 of the Report.

¹⁶ BESB : op.cit., p. 19.

and the villages were concentrated in one or two talukas. But the proportion was not very much higher than 5 per-cent, and we may note that none of the districts of Konkan and Deccan came under a yet third category with a high proportion of villages unsurveyed. Thus the fact that acreage data for unsurveyed villages are comparatively less reliable is not likely to vitiate significantly the usefulness of the area statistics relating to Konkan and Deccan districts.

In the 'Classification of Area' table of the SCRB we get a division of total area under any category of utilisation into 'reported' and 'non-reported', i.e. area for which no returns exist. This raises several problems. If a detailed breakdown by types of utilisation of a part of 'non-reported' geographical area is not available, then to the extent that some portion of this land is actually under crops, there would be an underestimation in the area under crops. Thus the 'Classification of Area' tables of SCRBs, 1952-53, 1953-54 and 1954-55 indicate that for a substantial portion of 'non-reported' geographical area in Dhulia district in these years detailed breakdown by uses was not available. However, in the SCRBs of later years in which a detailed breakdown is shown one finds that whereas the aggregate 'non-reported' geographical area did not vary much from

year to year, the 'non-reported' under 'Forest' showed a significant increase in the later years almost to the same extent as the 'non-reported' geographical area unaccounted for in the three earlier years. This probably means that not much of this 'non-reported' area unaccounted for was under crops and hence a disregard of the same would not lead to an underestimation in the area under crops. Further, even when a detailed breakdown of all 'non-reported' geographical area is shown there would be an underestimation of outturn if the 'non-reported' shown under "Gross Cropped Area" is less than the actual. There is, however, no way of ascertaining this. We may ignore this consideration.

Finally, there is the problem of the 'non-reported' area under crops as a proportion of the gross cropped area. This is an area for which no returns exist, and hence estimates pertaining to it are rough in character. Under the circumstances if we obtain outturn of a crop by multiplying the area under the crop, both 'reported' and 'non-reported' together, by per acre yield on 'reported' area there would be an overestimation (underestimation) of outturn if the per acre yield on 'non-reported' area were actually lower (higher) than that on 'reported' area. There is no way of knowing how actual per acre yield on 'non-reported' area stood in

relation to that on 'reported' area in the districts of Konkan and Deccan.

However, the possibility of distortion of estimates on this account is worth taking into account only if the proportion of 'non-reported' area under crops to gross cropped area was significantly large.¹⁷ From the SCRBs we find that there was no area under crops shown as 'non-reported' in any of the years in question for Jalgaon and Sangli districts of Deccan. In the case of Nasik and Ahmednagar districts the proportion of 'non-reported' to total area under crops was less than 0.5 percent throughout the period. For the remaining districts of Deccan the proportion varied between 1 and 3 percent mostly, the only exceptions being 3.9 percent in Dhulia district in 1953-54, 3.7 percent in Poona district in 1951-52 and 4.5, 4.6 and 3.2 in Satara district in 1951-52, 1952-53 and 1953-54 respectively. Thus in no district in Deccan in any year the proportion exceeded 5 percent. Probably, therefore, it is not unreasonable to conclude that the fact that returns did not exist for a part of the area under crops is of little importance in the case of Deccan districts.

Coming to the districts of Konkan the proportion did not rise above 1.5 percent from year to year for the

¹⁷It may be argued that the estimate of the 'non-reported' area under crops is itself of a rough nature, and hence the proportion of such area to gross cropped area will not indicate the full magnitude of the element in area statistics which is a likely source of error. But this consideration is of little importance unless there is reason to believe that the estimate of the 'non-reported' area under crops errs in a very substantial degree.

district of Thana. As regards Kolaba district the proportion was in the neighbourhood of 4 percent in some of the years. Presumably the fact of 'non-reporting' is unimportant for these two districts also. The proportion was significantly high for the remaining two districts, viz. Bombay Suburban and Ratnagiri. This is shown in the table below.

TABLE 3.1 : PROPORTION OF 'NON-REPORTED' AREA UNDER ALL CROPS TO GROSS CROPPED AREA IN BOMBAY SUB-URBAN AND RATNAGIRI DISTRICTS, 1951-52 TO 1958-59

(Percentages)

Year ->	1951- 52	1952- 53	1953- 54	1954- 55	1955- 56	1956- 57	1957- 58	1958- 59
Districts								
Bombay Suburban	20.2	20.5	21.7	21.7	21.7	12.1	12.0	12.8
Ratnagiri	48.3	39.3	32.7	31.4	25.2	19.6	3.4	2.9

N.B. :- Proportions are calculated on the basis of data in SCRB, 1951-52 to 1958-59

We may ignore Bombay Suburban district as the agricultural income here was relatively very small. In Ratnagiri district the proportion was extremely high in some years. What is equally important, it declined continuously throughout the period. This means that comparability as

between year-to-year estimates is likely to be vitiated. Further, the 'non-reported' area was not distributed evenly over all crops, major as well as minor. As could be expected this area category was confined mainly to a few important crops of the district such as rice, ragi, and some of the 'small millets'. All this may possibly introduce some element of error in the estimates of output of crops in this district. Our only hope is that the actual per acre yield on 'reported' and 'non-reported' areas were not so divergent as to subject official estimates to a wide margin of error. If that be so the possibility of under- or over-estimation would be limited.

The reliability of average yield figures may now be analysed. The estimates of production both in SCRB and 'Estimates' are based partly upon the traditional annewari method and partly on crop-cutting experiments. The traditional method of yield estimation is to calculate the normal yield of a crop for a district, generally once in five years and multiply the normal in any year by what is known as the 'condition factor' in that year. The normal yield is arrived at on the basis of crop-cutting experiments, and the 'condition factor' relates to the village official's eye-estimate as to the proportion which actual yield bears to the normal yield, the proportion being expressed in anna-equivalents.

The method however suffers from a number of drawbacks. For one thing there was no obligation that the normal yield for a crop in a district had to be estimated once in five years, with the result that in many cases the normal calculated many years back continued to remain in vogue. The position in the old Bombay State is stated in the 'Guide to Current Official Statistics (Bombay State)' as follows :- "These standard normal yields were originally based on the results of crop cutting experiments and modified every five years, if considered necessary, on the advice of the local revenue and agricultural officers of the districts concerned."¹⁸ We do not know whether quinquennial modification of the normal yield was 'considered necessary' in recent times in the case of Konkan and Deccan districts. Then again, one should not be misled by the fact that the normal yield is based upon crop-cutting experiments. As the NIC pointed out "the crop-cutting experiments conducted by the district authorities are based on purposive sampling and not on a strictly random sample basis. Neither the size of the plot nor the number of experiments is adequate for the purposes of generalisation. The normal thus fixed becomes the normal yield for the entire district irrespective

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BESB : op. cit., p. 21.

of variations within the district."¹⁹

As for the 'condition factor' the scope for a subjective bias here is considerable. The talathi expresses the yield of a crop in a year in anna-equivalents it being presumed that the standard normal crop is to be taken at 12 annas.²⁰ It is however important to note that what the talathi regards as the normal is not necessarily the same as the normal recorded in the Department of Agriculture. Under the circumstances applying the 'condition factor' derived on the basis of talathi's eye-estimation to normal yield as specified by the Department is likely to result in inaccuracies in outturn estimates apart from the errors in eye-estimation of the talathi.

It has also been pointed out that the method of eye-estimation is likely to make the talathi underestimate the yield in good years and overestimate it in lean years. The crop-cutting surveys in the Bombay State conducted by the Imperial Council of Agricultural Research (ICAR) before 1948-49 seem to provide some corroboratory evidence in this respect. These surveys reveal that in the case of rice annual official figures of average yield during 1945-46 to 1948-49 were underestimates ranging upto

¹⁹ Final Report of the National Income Committee (The Department of Economic Affairs, Ministry of Finance, Government of India, February, 1954), p. 27.

²⁰ BESB: op.cit., p. 21.

7.2 per cent, with the exception of the official estimate in 1946-47 which exceeded the estimate by crop-cutting surveys by 4.8 percent. As for wheat there was a consistent overestimation in the Bombay State ranging upto 42.0 percent during 1943-44 to 1948-49. It is said that the low actual yield was largely due to severe rust epidemics on wheat that occurred during this period. It is interesting to note that in Deccan division when the wheat crop was almost a failure in 1946-47, the official figure was an overestimate as compared to that derived by crop-cutting survey by 377 percent.²¹

It is further pointed out that "the average of the condition factors taken over a series of years works out at a figure less than the corresponding anna equivalent of the normal."²² Probably this would give the impression that official yield figures are underestimates. However, "there is reason to believe that the normal yields which were fixed long time ago are pitched at a higher level than what they should be."²³ One does not know whether these two elements cancel each other out. But

²¹V.G.Panse : Why Crop Cutting Surveys? Comparison of yield estimates prepared on the basis of traditional and crop-cutting methods - A Rejoinder (Indian Journal of Agricultural Economics, Vol. XVIII, No. 2, April-June, 1963), pp. 35-36.

²²Co-ordination of Agricultural Statistics in India (Report of the Technical Committee) (Government of India, Ministry of Agriculture), 1949, p. 12.

²³Ibid., p. 12.

the general belief seems to be that there is an under-estimation bias in official yield figures. Clearly yield estimates based upon random sampling technique would be more dependable than the traditional ones. The NIC in its Final Report makes considerable use of ICAR estimates drawn from crop-cutting surveys. However, the ICAR estimates would be of little use to us in view of their limited coverage in point of years, districts and crops studied.

We may note that during the period under review the Department of Agriculture, Government of Bombay estimated yields of some of the crops (later reported in SCRB) on the basis of results of crop-cutting surveys inspired by the work of ICAR in this field. In the districts of Konkan and Deccan of Bombay State yield estimates for the following crops have been based upon crop-cutting experiments since 1951-52 : rice, jowar, bajri, wheat, gram, cotton, groundnut and tobacco.²⁴ In addition the estimate of yield of ragi in Ratnagiri district has also been arrived at in the same way over the period in question. It would be worthwhile to examine the significance of this fact for the reliability of our estimates of

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Hereafter we shall designate crops covered by crop-cutting surveys as "specified" or "selected" crops.

agricultural income for the districts of Konkan and Deccan. As it is, the district outturn estimates based upon random sampling techniques are believed to be subject to a wider margin of sampling error than estimates for the State as a whole.²⁵ It would therefore be useful to analyse the further possibility of distortion in our income estimates in view of the fact that only a few crops are covered by crop-cutting surveys. For this purpose we must gauge the importance of these crops in the agricultural economy of the respective districts.

From the point of view of availability of outturn data the crops can be divided into three categories: (a) the 'specified' or 'selected' crops, (b) crops, the estimates of outturn of which are based upon the traditional annewari method²⁶ and (c) crops, mostly residuary in character for which no outturn data are available, in any case from year to year.

An obvious course is to study the proportion^{of}/area respectively under the three categories of crops to gross cropped area in each of the 13 districts of Konkan and Deccan. But it needs to be pointed out that to infer

²⁵ BESB, op.cit., p. 23.

²⁶ In the case of Konkan and Deccan these crops are: cereals other than rice, jowar, bajri and wheat; pulses other than gram; sugarcane, potatoes, chillies, sesamum, rape, mustard, linseed and castor. In the list for Ratnagiri ragi is to be excluded from category (b).

from these proportions the relative degree of reliability of agricultural income estimates is to make two assumptions. One is that the area data are fairly reliable so that when it is said, for example, that the 'specified' crops accounted for, say, 75 percent of the gross cropped area in a district, the impression that a large proportion of area under crops in the district was covered by crop-cutting surveys, is correct. Clearly this impression would be wrong if area data were faulty. However, there is sufficient reason to believe that these data for the districts in question are fairly dependable. A primary reporting agency has existed in each of the districts all throughout the period selected. The method of collecting the data has been that of complete enumeration. The unsurveyed and/or 'non-reported' area in these districts was proportionately quite small, with the exception of Ratnagiri district as has been seen already. Furthermore, we wish to use proportions derived from these area data only as rough and general indicators of the degree of reliability in income estimates. Probably the extent of dependability in area data is adequate for this purpose.

The second assumption implied is that area under crops is a satisfactory index of the relative contributions of the crops to agricultural income. One may dispute this assumption on the ground that the contribution to agricul-

tural income of a crop depends, besides area under the crop, on its per acre value, i.e. average yield multiplied by the price of the crop. It is conceivable that a crop accounting for a significant proportion of area may have so low a per acre value that its contribution to income turns out to be small. The more sophisticated way of countering this view is to resort to a marginal productivity explanation. Land utilisation in equilibrium should make marginal value productivity equal for all uses of land. This means that if a large amount of land is used for a crop A and a small amount for a crop B, then with an equal value productivity at the margin for both crops, the aggregate value productivity of A would be quite larger than that of B. This conclusion is vitiated if conditions of competition are absent for then the marginal productivity theory itself would be inapplicable. Further, the conclusion would be invalidated even under competitive conditions if the marginal value productivity of B falls precipitously whereas that for A declines gradually for in that case even with a small area under B its aggregate value productivity may be relatively higher than that of A. It may be urged that competitive conditions are less uncommon in agriculture than elsewhere. As for the other contingency mentioned it may be argued that the same is not likely as that would require a violent fluctuation in relative prices and/or relative average

yields of crops in the event of a change in the pattern of land utilisation, which may be treated as improbable. If it is objected that the marginal productivity theory applies in static conditions it may be countered that conditions in agriculture in a country like India over a period of eight years may be presumed to be more or less static and can thus be regarded as a fit case for the application of the theory.

The above analysis would be faulty since it implies a high degree of 'mobility' of land as between different uses in agriculture, which is certainly not true. Thus howsoever the value productivity of land under, say, cotton increases, land in Konkan districts under other crops can hardly be diverted to cotton. Under the circumstances land utilisation may be dictated more by considerations of possible use than those of value productivity. The marginal productivity explanation has thus to be rejected.

All the same the distribution of area by crops may still be a useful indicator. If the proportion of area under 'specified' crops was very high, say, 80 to 85 per cent, the conclusion that a considerably large proportion of income estimate was based upon fairly reliable outturn data is reasonable. This inference would be open to

question only if per acre values of crops accounting for the remaining 15 to 20 percent of gross cropped area are known to have been significantly higher than those of crops covered by crop-cutting surveys, because in that case the proportion of contribution to agricultural income by the "selected" crops might be substantially less than the proportion of area under these crops. Further, even when the proportion of area under "selected" crops was substantial, say, 55 to 60 percent, a meaningful analysis of the significance of the crops in the agricultural economy could be made in the light of probable relative per acre values of the 'specified' crops as a group and those of the rest. It will, however, be seen that our conclusions in both the cases would lack firmness, if the data on prices of 'selected' crops are known to be very defective. Probably this is not so.

There is one more point to consider. Even if we were to conclude that the proportion of area under 'specified' crops (or category (a) crops) was indicative of the relative significance of these crops from the point of view of value added by all crops, we shall only be judging the reliability, not of estimates of agricultural income, but of those of total income from all crops. Agricultural income includes besides the value of crops, value of by-products (such as straw, sticks, grass, etc.) also. In the

revised estimates of national income of India prepared by the C.S.O.²⁷ about 9 to 11 percent of the agricultural income was accounted for by the byproducts. Clearly the accuracy of this proportion itself depends upon the reliability of estimates of value of byproducts. One, however, gets the impression that byproducts as a whole contribute not an insignificant proportion to agricultural income.

In relation to estimates of value of byproducts a few facts may be noted. Straw yielded by the different foodgrains seems to account for more than half of the aggregate value of byproducts. Recently the N.S.S. has made available more dependable data on ratio of outturn of straw to that of a crop. Data however are for the whole country and by population zones. Use of these at the level of districts is somewhat arbitrary. Probably this would not distort income estimates much. Basically the accuracy of the estimates of value of byproducts would depend on the reliability of three types of data: (i) those relating to outturn of crops, particularly foodgrains, (ii) those giving the ratio of outturn of the byproducts to that of a crop, and (iii) data on prices of byproducts. As for (i) the estimates of outturn of the more important foodgrains have been based upon crop-cutting experiments, in Konkan and Deccan since 1951-52. Probably

27 The reference is to NIS.

the ratios listed under (ii) do not diverge from region to region so violently as to introduce a large margin of error in value estimates even if data for a larger region are used in/case of a smaller one. It is true that the prices data are more scanty. But clearly prices of by-products in agriculture have been quite low. This perhaps reduces the possibility of error on account of adoption of an arbitrary price. We may thus consider the problem of reliability of estimates of value of crops and assume that our conclusions also apply with regard to the whole of the agricultural income.

We shall proceed with a study of the proportion of area under the respective categories of crops to gross cropped area in each of the 13 districts. Strictly speaking, we should consider proportions in every district for all the eight years, but we are choosing only three years, viz. 1951-52, the initial year of the period selected, 1955-56, a middle year and 1958-59, the final year. The reason is that the proportions for the three years can probably be regarded as representative for our purpose here, particularly because, as we shall see presently, proportions in the three years for any district did not diverge much.

Data on gross cropped area and on area respectively

under the three categories of crops (a), (b) and (c) are needed for calculating the required proportions. We use here the figures shown in area tables given at the end of Chapters IV and V. The sources of data being used are specified in those chapters. It will be seen that we have adjusted figures of area under some of the crops in Thana and Dhulia districts to allow for revision of their boundaries. The analysis of area distribution by crops relating to these two districts thus suffers from an additional handicap. It is hoped that this does not distort the picture in any significant degree. Ignoring decimals we present the proportions in the following table (Table 3.2 on page 94).

As between categories (a) and (b), outturn data relating to crops in the former category are more reliable than those pertaining to crops in the latter group. Further, as will be seen later, districtwise data on prices of all the crops in the category (a) are available for almost all the years in question. As regards the category (b) price data for some of the crops are not available in a suitable form. These considerations would suggest that the estimates of income from crops in the category (a) are likely to be more dependable than those of income from crops in category (b). As for the category (c) this mostly includes residuary crops such as, for example,

TABLE 3.2 : PROPORTION OF AREA UNDER EACH OF THE CATEGORIES OF CROPS (a), (b) AND (c) TO THE GROSS CROPPED AREA

(Percentages)

Districts	1951-52			1955-56			1958-59		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
1. Thana	51	19	30	52	20	28	51	18	31
2. Bombay Suburban	43	-	57	44	-	56	33	-	67
3. Kolaba	63	22	15	61	21	18	61	19	20
4. Ratnagiri	54	19	27	53	19	28	51	18	31
KONKAN	55	19	26	55	20	25	53	18	29
1. Dhulia	80	19	1	82	16	2	80	18	2
2. Jalgaon	71	26	3	77	20	3	77	20	3
3. Nasik	67	19	14	70	17	13	70	17	13
4. Ahmednagar	76	14	10	80	11	9	79	11	10
5. Poona	65	12	23	68	9	23	68	10	22
6. Sholapur	85	7	8	83	9	8	83	9	8
7. Satara	63	13	24	65	12	23	65	12	23
8. Sangli	74	12	14	75	12	13	79	12	9
9. Kolhapur	53	27	20	53	26	21	53	27	20
DECCAN	72	15	13	74	14	12	74	14	12

'other condiments and spices', 'other oilseed' and so on. Generally no data on outturn and prices are available for separate items under these in all the districts for all the years. It is customary to multiply into area under a residuary group a per acre value derived by a specific formula. It, therefore, seems reasonable to say that the value of output of crops belonging respectively to categories (a), (b) and (c) would be in a descending order of reliability. Further it is also probable that as between estimates for categories (a) and (b) on the one hand and those for (c) on the other there is a sharp break in the degree of reliability.

It will be seen that in Deccan districts as a whole the area under 'selected' crops accounted for between 72 and 75 percent of the aggregate gross cropped area. The corresponding proportion for Konkan districts ranged between 53 and 55 percent only. Then again, the proportion of area under category (c), estimates relating to which are likely to be more rough in nature, was quite substantial in Konkan districts, that in Bombay Suburban district being overwhelmingly large. One may note that Bombay Suburban district is agriculturally quite unimportant. The gross cropped area in this district in each of the three years was in the vicinity of 1 percent of the aggregate gross cropped area of Konkan region as a whole. Considering

that Konkan itself is the smallest districts-group in Maharashtra the preceding fact would indicate how insignificant this district has been from the agricultural point of view. It is, however, clear that Konkan was less satisfactorily covered by the more dependable method of yield estimation than Deccan.

Among the three districts of Konkan the proportion of area under 'selected' crops was higher in Kolaba than in Thana or Ratnagiri, but none of them seems to be covered by crop-cutting surveys to the same extent as any of the districts of Deccan with the exception of Kolhapur. In fact the proportion for none of the three Konkan districts in any year reaches even the average for Deccan as a whole. We shall, however, take a closer view of the distribution of area by crops since the analysis here is made relatively simple by the fact that the agricultural economy in Konkan districts has been dependent on a handful of crops only.

From the area and outturn data in the SCRBs we find that of the "selected" crops wheat, bajri, cotton and tobacco were not grown at all in any of these districts. As for the remaining "selected" crops rice in Thana and Kolaba districts, and rice and ragi in Ratnagiri district accounted for almost the whole of the area under this

category of crops. Further the SCRB data reveal that in each of the three years nearly 96 to 97 percent of the area under crops in Thana and Kolaba districts, and approximately 93 percent in Ratnagiri district was under three major groups of crops taken together, viz. cereals, pulses and fodder crops. Of the remaining 3 to 4 percent of the gross cropped area in Thana and Kolaba districts about 1 percent was under each of the two categories, viz., fruits and vegetables, and oilseeds. In Ratnagiri district oilseeds accounted for nearly 3.5 percent, fruits and vegetables, between 1.5 and 2 percent, and condiments and spices, a little less than 1 percent.

We must try to link up the foregoing analysis with some idea about the probable relation between the per acre value productivity respectively of 'selected' crops as a group on the one hand and of the remaining crops on the other. Clearly we can form only a rough judgement. It is true that since per acre value is a product of average yield and price, both of which are likely to change from year to year, this value itself is subject to fluctuations over a period. All the same it is probably not incorrect to say that during the period in question there have been broad relationships between the per acre values respectively of several crops of interest to us.

We may say, for example, that such values in the case of major fruits have been higher than those of cereals or pulses.

Moreover, what is needed for analysis here is some knowledge of the maximum possible degree in which per acre value of a crop under consideration is likely to have diverged from that of 'specified' crops taken together. For this purpose probably data of a rough nature would be useful. In fact one may even say that though firm estimates of per acre values of different crops ('specified' or otherwise) in the districts of Maharashtra, if available, would place the comparison being attempted here on a sounder footing, these would also make such a comparison pointless. Firm estimates would mean that outturn and price data for the crops are fairly accurate and it would, therefore, not be necessary to comment on the reliability of income estimates from this point of view. It is thus necessary for us to content ourselves with a rough comparison between estimates of per acre values for the 'selected' crops and those for the remaining ones, the two sets of estimates possessing different degrees of firmness.

To begin with, it will be seen that some of the crops such as plantation crops, jute and so on, which have been

far more income-yielding in the country than cereals and pulses are not grown in Konkan districts at all. The more important in the high-income-yielding category of crops in these districts would be fruits and vegetables, coco~~n~~ut among oilseeds, and betelnut among condiments and spices. All these crops fall under category (c). On the basis of income estimates to be made in a later chapter, we deduce the gross income per acre from paddy--i.e. the overwhelmingly important 'selected' crop--accruing to producers in Thana²⁸ and Kolaba districts, and weighted average income per acre from paddy and ragi, to producers in Ratnagiri district. The results are shown in Table 3.3.

It will be seen that the per acre value of paddy accruing to producers separately in Thana and Kolaba districts varied from Rs. 200 to Rs. 430 and from Rs. 190 to Rs. 340 respectively whereas the per acre value of rice and ragi together going to producers in Ratnagiri district ranged approximately between Rs. 140 and Rs. 210. As for per acre values of crops other than 'selected' we get some data in N.S.S. No. 32 (Parts I, II and III)²⁹, relating to the period 1952-53. But there are no data on

²⁸ It will be noted that figures of area and outturn of paddy in Thana district are deflated in view of the 'loss' of territory. It is hoped that this does not make per acre values of paddy in Thana less reliable than those of the 'selected' crops in other districts.

²⁹ The National Sample Survey : Some Aspects of the Cost of Cultivation (Number 32), Parts I, II and III (1960).

TABLE 3.3 : PER ACRE VALUES OF PADDY IN THANA AND KOLABA DISTRICTS, AND OF PADDY
AND RAGI TAKEN TOGETHER IN RATNAGIRI DISTRICT

(in Rupees and Paise)

Districts	Years							
	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Thana	199.16	285.10	310.02	241.95	242.26	271.18	372.70	430.73
Kolaba	213.38	244.79	281.84	191.18	244.37	237.41	267.87	337.19
Ratnagiri	136.32	164.83	176.33	143.64	143.83	179.09	175.93	212.48

coconut or fruits and vegetables. Per acre values could be deduced only for 'spices' as a group.

There is some reliable data on value per acre in several Maharashtra districts of 'fruits and vegetables' which, as a category, was comparatively more important among the relatively lucrative variety of crops in Konkan. The BESM conducted type studies in a few Maharashtra districts with a view to obtaining yields of different kinds of fruits and vegetables. The studies covered a wide variety of fruits and vegetables. "The estimate of value of yield per acre of fruits and vegetables for the year 1957-58 was Rs. 1140."³⁰ Even if we assume that in Konkan districts the composite value per acre of the more lucrative crops taken as a group was in the range of Rs. 1200 to Rs. 1500 in 1957-58 this value would be about 3 to 4 times that of paddy in Thana, 4 to 5 times that of the same crop in Kolaba and 6 to 7 times that of the weighted value per acre of paddy and ragi in Ratnagiri. Probably we may assume this to be the maximum degree in which the value per acre of the lucrative crops diverged from that of the more important 'selective' crops in Konkan districts in the period 1951-52 to 1958-59.

³⁰ M.A.Telang and B.W.Chavan : Report on the State Income of Maharashtra, 1955-56 to 1958-59 (Quarterly Bulletin of Economics and Statistics, Bureau of Economics and Statistics, Government of Maharashtra, July-September, 1961), p. 22.

Against the background of relationship between the respective per acre values set out in the preceding paragraphs it would be instructive to study the area distribution in Konkan districts. So far as the districts of Thana and Kolaba are concerned it may be noted that at the most 2 percent of the gross cropped area was shown in SCRBs as area under the more lucrative crops under consideration here. At the same time, of the total area under crops about 45 percent in Thana and roughly 35 percent in Kolaba was devoted to (i) fodder crops and (ii) cereals and pulses other than those included among the 'specified' crops. The composite per acre value of categories (i) and (ii) must have been lower -- perhaps very much lower -- than that of paddy respectively in Thana and Kolaba. In that case it is quite likely that the value per acre of all the crops other than the 'specified' ones taken as a group was not higher than that of the 'specified' crops. If that be so, it may not be unreasonable to say that the proportion of the area under 'specified' crops to the gross cropped area represented the floor to the proportionate contribution of these crops to the agricultural income in the respective districts. Though the proportion was not very high it was not insubstantial either. Then again, it is highly conceivable that in actual fact the proportionate contribution

of the 'specified' crops to agricultural income was even higher than the proportion of area under these crops.

The position with regard to Ratnagiri district was a little less satisfactory. The per acre value of 'selected' crops was relatively lower here and at the same time the SCRB area data indicate that about 4 percent of the gross cropped area was under fruits and vegetables, coconut and betelnut taken together. All the same even in this district the remaining crops with a composite per acre value lower than that of paddy and ragi together accounted for 40 to 45 percent of the gross cropped area. It may also be noted that according to SCRB data the proportion of area in Ratnagiri under the fodder crops which have presumably been low-yielding crops was 21.5, 23.1 and 26.4 percent in 1951-52, 1955-56 and 1958-59 respectively. All this may suggest that even in this district the proportions shown in Table 3.2 represented more or less the floor to the proportionate contribution of the 'selected' crops to the income from agriculture with the actual proportionate contribution being probably even larger. Hence considering the fact that estimates of income from the 'selected' crops appear to be fairly reliable we may reasonably conclude that not an insubstantial proportion of estimates of agricultural income in Konkan districts have rested upon basic data quite firm in nature.

For districts of Deccan as a whole the proportion of area under 'specified' crops to the gross cropped area was in the neighbourhood of 75 percent. There were, however, significant divergences as between proportions in the different districts. In the case of Konkan districts the analysis was relatively simple as it related to only three districts which depended mostly on a handful of crops. As regards Deccan, the analysis has to cover nine districts with a comparatively greater variety in the cropping pattern. We shall, therefore, content ourselves merely with indicating briefly the area distribution by crops so as to obtain a rough idea of the possibility of distortion in estimates of agricultural income. One thing may be noted. If the proportion of area under category (a) as well as that under the relatively low-yielding crops not coming under (a) was substantially high and the proportion relating to the lucrative crops not covered by crop-cutting surveys, insignificantly low, then it is a reasonable inference that the proportionate contribution of 'selected' crops to the agricultural income of a district was at least as high as the proportion of area under these crops. In that case income estimates would turn out to be reliable in a substantial degree. For a study of area distribution we shall use the area data in SCRB for the years 1951-52, 1955-56 and 1958-59

assuming that the picture in other years was not very different.

It is seen that crops which have been relatively high-income-yielding in India, such as the plantation crops, jute, coconut and arecanut are hardly grown in any of these districts. Judging by the data on probable per acre values of certain crops scattered in the village survey reports of the GIPE we get the impression that fruits and vegetables, sugarcane and chillies which did not come under category (a) have been relatively high-income-yielding crops in these districts. The N.S.S. No. 32 does not give per acre values of fruits and vegetables. It gives data for spices relating to West India, i.e. the population zone which included Deccan districts. Per acre value of this category of crops was significantly higher than that of cereals or pulses or cotton in the same zone. Per acre value of sugarcane is shown, but not for this zone. The value, however, was relatively very high. It will be noted that N.S.S. values were calculated on the basis of farm prices at harvest time. This means that N.S.S. data give us broad idea of the relationship between per acre values of different crops accruing to producers. The impression about the broad relationship between the per acre values of crops is further reinforced by data supplied by the Agricultural

College Experimental Station, Poona, which are tabulated below :

TABLE 3.4³¹ : GROSS VALUE PER ACRE OF SOME CROPS IN MAHARASHTRA

Crop	Gross Value Per Acre in Rs.
Jowar	250
Bajri	132
Wheat	300
Groundnut	320
Cotton	330
Sugarcane	2250
Chillies	1080
Potato	360
Oranges	500
Tomato	2500

We shall now consider the area distribution by crops. In the districts of Dhulia and Sholapur the proportion of area under 'selected' crops to gross cropped area was as

³¹ Quoted in Samaj Prabodhan Sanstha : Agro-Industrial Balance (An expository survey of Sirur Taluka) (Popular Prakashan, Bombay, 1964), p. 87.

high as about 80 percent. Of the remaining 20 percent of area under crops hardly 2 percent in all was devoted to sugarcane, condiments and spices, and fruits and vegetables taken together. The bulk of the remaining area was under (i) cereals and pulses other than rice, wheat, jowar, bajri and gram, and (ii) oilseeds other than groundnut. Then again, the proportion of area under category (c) was 1 to 2 percent in Dhulia and 8 percent in Sholapur.

In the remaining districts of Deccan other than Kolhapur the area under 'specified' crops formed 65 to 75 percent of the gross cropped area. The aggregate area under sugarcane, condiments and spices, and fruits and vegetables in the respective districts was in the neighbourhood of 2 to 3 percent. In Poona and Satara where the proportion of area under 'selected' crops was near-about 65 percent and the proportion relating to category (c) was particularly high, the low-yielding category of fodder crops coming under (c) accounted for about 18 to 20 percent of the gross cropped area. Considering all these facts one may probably be permitted to have an adequate degree of confidence in estimates of agricultural income pertaining to the districts of Deccan other than Kolhapur since a substantial proportion of this income was probably yielded by 'selected' crops, outturn (and

even prices) data for which are quite reliable. It will, however, be remembered that figures of outturn of some crops in Dhulia district will be adjusted to allow for 'loss' of territory. It is hoped that this will not introduce in our estimates for this district an arbitrary element in any significant degree.

The position with respect to Kolhapur seems to be somewhat less satisfactory. The proportion of area under 'selected' crops was 53 percent and that under category (c) was as high as 20 percent. At the same time the high-income-yielding crops, viz. sugarcane, condiments and spices, and fruits and vegetables, not coming under category (a), accounted for 7 to 8 percent of the gross cropped area. We may however, state one or two additional facts. About 18 to 20 percent of the area under crops in this district was devoted to fodder crops which means that almost the whole of the area under (c) was accounted for by fodder crops -- a low-yielding variety. This also indicates that most of the high-income-yielding crops not covered by crop-cutting surveys, came under the category (b), estimates relating to which are probably more dependable than those for crops under (c). Further 20 percent of the gross cropped area was under cereals and pulses other than rice, wheat, jowar, bajri and gram -- a group of crops which presumably yielded a

a composite income per acre lower than that of the 'selected' crops.

Then again, it needs to be noted that generally speaking, among the cereals, paddy and wheat have had comparatively higher per acre value than jowar, bajri and others. In Kolhapur paddy accounted for a major proportion of area under cereals unlike in the other Deccan districts where jowar and bajri were the relatively more important cereals. Moreover, another relatively high-income-yielding crop, viz. tobacco, was much more important in this district than in any other Deccan district. This also was a 'selected' crop. In consequence the composite per acre value of 'selected' crops seems to have been much higher in Kolhapur than in any other Deccan district. Calculations based upon income estimates to be made in a later chapter seem to indicate that whereas the relevant value per acre varied between Rs. 30 and Rs. 120 in 1951-52, 1955-56 and 1958-59 in the other Deccan districts, it was Rs. 164.55, Rs. 181.14 and Rs. 213.96 in Kolhapur in the three years respectively. Unless the composite per acre value of sugarcane and other lucrative crops not coming under (a) was correspondingly higher in Kolhapur, the forementioned fact suggests that the per acre value of high-income-yielding crops on the whole was a lower multiple of the value of

'selected' crops taken as a group in Kolhapur than was the case in other Deccan districts. If that is so we may be warranted in assuming that the proportionate contribution of 'selected' crops to the agricultural income of this district was even higher than the proportion of area under these crops. Thus probably income estimates relating to Kolhapur are also substantially reliable.

On the whole it seems reasonable to assume that estimates of outturn of crops contributing a substantially large proportion to the agricultural income of the respective districts are fairly reliable. This should justify us in placing a good measure of confidence in the estimates of agricultural income relating to Konkan and Deccan districts. Clearly this conclusion would apply more in the case of gross income than net income since the latter requires additionally data on deductible costs -- data which are not available on a reliable basis from year to year. Our concern, however, is with gross income.

There is an additional point in respect of reliability which may be touched upon briefly at this stage. This relates to estimates for mixed crops. There are two systems of mixed sowing : one, where the sowings are in different or alternative rows and second, where the sowings

are completely mixed together. Evidently determination of area under each crop is much easier in the first case than the second. SCRB takes these mixtures into account when reporting area but one does not know which method of sowing is more common in the different districts of Konkan and Deccan -- for that matter, of Maharashtra -- and what is the margin of error, if any, in the area reported on this account. A further point is that to secure outturn of a crop under mixture its area is multiplied by the average yield of the 'pure' crop. This involves the assumption that average yield of a 'pure' crop is the same as that of the very crop in a mixture. One does not know if this assumption is true in the case of the districts, not only of Konkan and Deccan, but of Maharashtra.

The analysis thus far of sources of data from the points of view of coverage and reliability indicates that SCRB has an edge over 'Estimates' in respect of coverage. Then again, the area data in the former publication are more dependable as they incorporate the latest revisions. As for reliability of the outturn data the two publications are on par. On the whole SCRBs are more useful to us than 'Estimates'. EMh reproduces SCRB data on area and outturn of the principal crops with slight corrections, wherever necessary.³² The data pertain to the whole

³² The crops are: rice, wheat, jowar, bajri, ragi, total cereals, gram, tur, total pulses, sugarcane, cotton, groundnut, sesamum, rape and mustard and linseed, and tobacco.

period in which we are interested. A later version of EMh, viz. BCAS, gives the same data from 1953-54 onwards. When it is decided to use SCRB data it is better to draw upon EMh/BCAS³³ for data on crops included in these publications since they have corrected a few errors of misreporting in the SCRB.³⁴ Further, we shall also have to fall back on SAs, MRs and other sources for specific purposes as will be mentioned in the appropriate contexts.

³³ Wherever we cite EMh/BCAS hereafter we mean that EMh is to be used for data pertaining to 1951-52 and 1952-53, and BCAS, for those relating to the period, 1953-54 to 1958-59.

³⁴ There are a few misprints in BCAS also. These are corrected by comparison with EMh and SCRB.

CHAPTER IV

AREA AND OUTTURN OF CROPS IN THE DISTRICTS OF KONKAN -- ESTIMATION

After having analysed in the last chapter the probable sources of data from the points of view of coverage and reliability we now turn to the actual estimation of area and outturn. A comparison between Konkan districts on the one hand and those of Deccan on the other reveals two important differences. For one thing, the cropping pattern in the former districts-group has been different from that in the latter. Relatively speaking, there has been a greater variety in the cropping pattern of Deccan districts than in that of the districts of Konkan. Secondly, the scope of alternative methods of estimating outturn during the period as reported in the official publications, was also somewhat different in the two districts-groups. As we saw in the preceding chapter the proportion of area under 'selected' crops in the different districts of Konkan fluctuated between 50 and 60 percent whereas in Deccan districts with the exception of Kolhapur the relevant proportion ranged between 65 and 85 percent. A similar observation can be made about the scope of the annewari method of yield-estimation.

We therefore devote this chapter to the estimation of area and outturn in the districts of Konkan leaving the problem of estimation in relation to Deccan districts for consideration in the next chapter.

We shall begin with the problem posed for estimation by the readjustment of boundaries of some of the Konkan districts. As we have already stated in an earlier chapter, a comparison between the geographical area of Thana district at present with that before 1956 shows that the area of the district as it existed before 1956 was reduced on the whole by 5.4 percent by 1960. In 1956 the district area was reduced by 2.1 percent through transfer of some territory to Bombay Suburban district. This was the district of Thana which formed a part of the reorganised Bombay State. In 1960 this district 'lost' territory to the neighbouring State of Gujerat to the extent of 3.4 percent. Clearly data for Thana district in SCRBs from 1956-57 onwards must be exclusive of those pertaining to areas 'lost' through 'internal' readjustment as between Thana and Bombay Suburban districts. However, the data in SCRBs for the whole period under review in this study evidently do not allow for the 'external' adjustment in relation to the neighbouring State since this adjustment came in 1960. EMh/BCAS reproduce the figures in SCRBs, hence they are of no

additional use. It is thus necessary to make some corrections in the area and outturn data in official publications.

Ideally speaking, production estimates should be framed by making a full and separate allowance for the actual area, average yield, and value, of different crops in the territories 'lost' by taking into account crops, yields, prices etc. in those territories. This is palpably impossible. Any such exercise will require village-level data for the whole period. Apart from whether the data are available, the trouble involved in making use of them would not probably be worthwhile.

One simple method is to deflate the value of crops in the district before 1956-57 by 5.4 percent and from 1956-57 onwards by 3.4 percent. A corollary to this would be that amount of value constituting 2.1 percent of the gross agricultural income of the district from year to year before 1956-57 should be added to the aggregate value of crops in Bombay Suburban district. What is more, since our interest lies in the contribution to agricultural income in the districts by different major crops the respective rates of deflation have to be applied to each major crop. This will involve a number of assumptions.

It will be seen that if the ratio of value of a crop in the 'lost' territories to the corresponding value in the older district is to be regarded as the same as the ratio of the geographical area of villages 'lost' to that of the older district then we shall be making certain alternative assumptions about the following relationships: (a) the proportion, in the villages 'lost', of area under a crop to geographical area relatively to the corresponding proportion in the older district; (b) the average yield of that crop in the former territory relatively to that in the latter; and (c) the average price of the crop in the villages relatively to that in the older district. One possible assumption we may be making is that though the proportions under (a) and the quantities under (b) and (c) in the two respective territories (i.e. the district and the villages transferred) were not the same, the differences were so inter-compensatory that value of a crop in the villages was in the same proportion to its value in the older district as the geographical area of the former territory was to that of the latter. This is clearly an assumption difficult to defend.

Alternatively we may be making the simple assumption that the respective proportions and quantities listed were the same for both the territories. Probably it may not be

very erroneous to assume that the average yield and the price of a crop respectively were the same in the villages 'lost' and the older district. For want of data such an assumption may be excusable. But to assume that the proportion mentioned under (a) was the same for both the territories is to ignore the probable differences in the cropping pattern in these territories. Unless there are some data suggesting its probable validity this assumption is better avoided.

We shall consider an alternative method. For this purpose the problem of deflation necessary on account of the 'external' adjustment is taken up first. The Socio-economic Review and District Statistical Abstract (DSA) of Thana district, 1961-62 issued by the BESM gives data on area under different crops in 1959-60 and 1960-61 by talukas in the district as constituted after the formation of Maharashtra. Talasari Mahal, mentioned in this publication, is the component unit constituted by territories in the former Umbergaon taluka other than those transferred to Gujarat State. Probably it is much less unreasonable to assume a similarity in cropping pattern in the villages 'lost' on the one hand and Talasari Mahal on the other. We select such crops in the district as, on an average of two years, each accounted for at least 1 percent of the average gross

cropped area. The crops¹ are: rice, ragi, residuary cereals (i.e. other than rice, jowar, ragi, and kodra),² tur, residuary pulses (i.e. other than gram and tur), fruits and vegetables, and fodder crops. We then calculate the proportion of area under each crop or category of crops, averaged for two years, in Talasari Mahal to the corresponding average area in the district, the area data used for the purpose being those provided by the DSA. The results are presented in the table below :

TABLE 4.1 : THE PROPORTION OF AVERAGE AREA UNDER CROPS IN TALASARI MAHAL TO THE CORRESPONDING AVERAGE AREA IN THANA DISTRICT (AVERAGE FOR 1959-60 AND 1960-61)

(Percentages)

Rice	Ragi	Residuary cereals	Tur	Residuary pulses	Fruits and vegetables	Fodder crops
4.0	1.4	0.6	6.0	4.3	2.7	10.0

Now a conceivable method of making allowance for the 'loss' of territory is as follows. We know that the geo-

¹ We consider a category of crops if data on items under the category are not separately available, e.g. fodder crops.

² It will be noted that cereals like wheat, bajri, barley and maize were not grown in this district at all.

graphical area of villages 'lost' is 126.1 sq. miles whereas that of Talasari Mahal is 95.8 sq. miles.³ This means that the former is 131.6 percent of the latter. If we multiply into each proportion in the preceding table, 131.6 percent, i.e. 1.316, we would get the likely proportion of average area under a crop in the 'lost' territories to the corresponding average area in the district on the assumption that cropping pattern in the villages transferred was the same as that in Talasari Mahal. These proportions (ignoring decimals) are tabulated below :

TABLE 4.2 : THE PROBABLE PROPORTION OF AVERAGE AREA UNDER CROPS IN THE 'LOST' TERRITORIES TO THE CORRESPONDING AVERAGE AREA IN THANA DISTRICT
(Percentages)

Rice	Ragi	Residuary cereals	Tur	Residuary pulses	Fruits and veget- ables	Fodder crops
5	2	1	8	6	4	13

If we deflate the area as well as value of each crop

³ See Census of India, 1961 (Volume X), Maharashtra, Part II-A, p. 52 and p. 126.

in the district from 1951-52 to 1958-59 by the respective proportion in the preceding table we shall be assuming that per acre value (i.e. average yield x price) of a crop in the territories transferred to the neighbouring State was the same as that in the district. This assumption seems to be unavoidable. It was indicated earlier that we shall be assuming additionally that the proportion of area under a crop to the geographical area was the same for the 'lost' territories on the one hand and Talasari Mahal on the other. This would imply that the cropping pattern in the villages transferred was the same as that in the Mahal. Probably this is a less objectionable assumption than a corresponding assumption with respect to the cropping pattern in the villages ~~and~~ and the district. Finally, the fact that we are treating the average picture for 1959-60 and 1960-61 as being applicable to all the years in the period chosen hides one more assumption. In actual fact there may have been variations from year to year in the cropping pattern in the territories concerned, viz. the district on the one hand, and Talasari Mahal and the villages transferred on the other. We are however assuming that these variations were negligibly small. Probably this assumption is not unreasonable.

We shall deflate by respective proportions in Table

4.2 the area and outturn of each crop in Thana district to allow for the 'loss' of territory through 'external' adjustment. Strictly speaking, there should have been a further step. The proportions in Table 4.2 indicate a probable relationship between area under the respective crops in the villages transferred and the corresponding area in the district exclusive of these villages. This is so because the DSA data relate to the new district of Thana. In order to effect deflation we must relate area under the crops in the villages to that in the older district inclusive of the villages. But the alterations necessary in the proportions in Table 4.2 would be so small that this point may be ignored. The rates of deflation are applied to data on area and outturn of rice, ragi, residuary cereals, tur and residuary pulses taken from EMh/BCAS and data on area under fruits and vegetables and fodder crops drawn from SCRB.

We shall now consider deflation necessary on account of 'internal' readjustment of the district boundaries. It seems that there is no alternative to the method of blanket rate of deflation given by the ratio between the geographical area of the territories 'lost' and that of the district before the change. The territories 'lost' through 'internal' adjustment mainly consist of one taluka, viz., Borivali taluka. It is, however, difficult

to get an idea directly of the cropping pattern in this taluka as there is no DSA for Bombay Suburban district to which almost the whole of this taluka was joined. As we have seen the method of blanket deflation involves the assumption of a common cropping pattern for the district and the 'lost' territories -- an assumption which is better avoided. However, the proportion involved is small so far as Thana district is concerned. It is true that the amounts to be correspondingly added to the respective values in Bombay Suburban district would be proportionately larger, but this fact is of little consequence as the total agricultural income of this district was negligibly small.

We find from the DSA, Thana that in Thana district as well as separately in the talukas composing the district rice and fodder crops together accounted for bulk of the area under crops. Further, area tables in SCRBs from 1951-52 to 1958-59 reveal that in Bombay Suburban district also the same crops accounted for almost the whole of the gross cropped area. This presumably means that transfer of territory from Thana to Bombay Suburban district made a difference mostly to area under rice and fodder crops in the respective districts. We shall, therefore, take the 'internal' adjustment into account by deflating by 2 percent the area and outturn of rice

(as shown in EMh/BCAS) and area under fodder crops (as given in the SCRB) in the district for each year upto 1955-56 (inclusive). Corresponding amounts would be added respectively to area, outturn and value of rice and area and value of fodder crops in Bombay Suburban district.

It will now be seen that rates of deflation respectively for all the crops other than rice and fodder crops shown in Table 4.2 should be as specified in the table for all the years from 1951-52 to 1958-59. As for rice and fodder crops the rates in Table 4.2 would apply for the years 1956-57 to 1958-59. In the earlier five years there has to be an additional deflation on account of 'internal' adjustment. Accordingly the area and outturn of rice in the district in these years will be deflated by 7 percent and area under fodder crops by 15 percent. Finally, it will also be noted that the total area under crops not shown in Table 4.2 was, as is evident from the DSA, Thana, absolutely insignificant not only in Talasari Mahal but also in the district itself. No correction is made in the area and outturn of these crops.

We shall now turn to the estimation of the gross physical product in agriculture as a step towards valuation

of the product. Evidently information required is that relating to outturn of different crops. If that is not available we have to rely on area figures using whatever information on average yield that is available. In^{the}/case of most of the unspecified residuary crops, even outturn cannot be estimated. We shall have to use area figures and apply to them per acre values derived by specific formulae.

The SCRBs give outturn data on cereals and pulses by a fairly detailed breakdown into crops. The breakdown of area data is even more detailed. In fact this is the case with SCRB data relating to all the major groups of crops. However, the usability of the breakdown even of outturn data is limited by the degree of availability of data on prices. Further, in Konkan districts it is only a handful of crops that matter, and hence our attention may conveniently be confined mainly to these crops.

A scrutiny of outturn tables in SCRBs shows that in Bombay Suburban district rice was the only crop grown among foodgrains. In the districts of Thana, Kolaba and Ratnagiri the outturn of rice, ragi and kodra almost exhausted the respective outturn of cereals as a whole. We, therefore, divide the cereals in these districts into

rice, ragi, kodra and other cereals. The area under rice is obtained from EMh/BCAS. These publications (as also SCRB) give outturn of rice whereas it would be proper to estimate outturn of paddy since our interest lies in an industrial definition of 'agriculture'. Further, the prices data available districtwise also relate to paddy. On an enquiry with official sources it was learnt that the conversion ratio of paddy into rice is approximately the same in all the Maharashtra districts, the ratio being 1:0.6667. This ratio is used to convert the outturn of rice in the official publications into that of paddy. The figures of area and outturn of ragi are taken from EMh/BCAS and of kodra from SCRB. It will be noted that since EMh/BCAS give the total outturn of all cereals, the outturn of 'other cereals' can be derived.

In the light of the outturn data in SCRB we classify pulses in the three districts into gram, tur and 'other pulses'. The figures of area and outturn of gram and tur are taken from EMh/BCAS and those of 'other pulses' derived from the data relating to 'total pulses' in the same publications. It will be remembered that figures relating to rice, ragi, other cereals, tur and other pulses in Thana are to be deflated by the proportions specified earlier.

The remaining categories of foodcrops are 'sugar crops', 'condiments and spices' and 'fruits and vegetables'. There was hardly any outturn of sugarcane in Konkan. We adopt the EMh/BCAS figures of area and outturn of sugarcane. There was no area under 'other sugars' in these districts according to SCRB. Among condiments and spices the SCRB provides data on area and outturn of chillies and on area only of several other condiments and spices. These are adopted. In Kolaba and Ratnagiri betelnut was an equally important crop in this category. BCAS gives yield per acre of arecanut in these two districts estimated on the basis of pilot surveys in 1959-60, 1960-61 and 1961-62. But as data on prices of the crop are not available we only show the area data.

There are no outturn data relating to any fruits or vegetables in SCRBS. This publication gives a fairly detailed breakdown of area figures. So far as vegetables are concerned one notes that hardly any vegetable was grown on a significant scale in Konkan districts. No attempt is made to estimate the outturn of any vegetable. Fruits have certainly been high-income-yielding crops. All the same, it appears from area data in SCRBS that fruits accounted for less than 1 percent of the area under foodcrops in Thana and Kolaba. The proportion was as high as about 20 percent in Bombay Suburban district

but this fact is evidently unimportant. In Ratnagiri district the proportion ranged between 2 and 3 percent. Among fruits, bananas, mangoes and cashewnuts accounted for almost the whole of the area under this category in Konkan.

The data on outturn of cashewnuts are available only from an old MR dating back to 1944. BCAS gives average yield of banana in Thana district in the years 1959-60, 1960-61, 1961-62 and 1962-63. The information is based upon results of pilot sample surveys. However, no data on prices respectively of cashewnuts and banana in Konkan districts are obtainable, and hence it seems pointless to estimate the outturn of these two crops.

The only source of yield data for mangoes is the MR on mangoes in India. The MR gives estimated average yield of the crop in the old Bombay State in the body of the Report as also in the reorganised State in a postscript. The data for the old setup of States in India pertain to the year 1950 whereas those for the new setup relate to the year 1954-55. Judging by the area data in the relevant SCRBs it appears that about 20 per cent of the total area under mangoes in the reorganised Bombay State was in the districts of Konkan, the bulk of this being in Ratnagiri. It may not be very arbitrary,

therefore, to estimate the outturn of mangoes in Konkan districts, especially Ratnagiri, on the basis of the average yield for the reorganised Bombay State reported by the MR.. But the prices data would again present a problem. The MR gives some data but as we shall see in Chapter IX these data are not quite useful for our purpose. Under the circumstances it seems wise to show only the data on area under fruits and vegetables in Konkan districts. These are taken from SCRB, those relating to Thana being suitably adjusted.

We shall now turn to the consideration of non-foodcrops. The broad categories here are (i) fibres, (ii) oilseeds, (iii) dyes and tanning materials, (iv) drugs and narcotics and (v) fodder crops. Among these, category (iii) need not detain us at all as there was no area under this category in Konkan districts. The only crop in category (iv) for which outturn data are provided in SCRB is tobacco. But this crop also was not grown in the districts concerned. Figures of area, if any, under other crops in category (iv) are drawn from the SCRB. Similarly among fibres, cotton which has been an important crop in many other districts of Maharashtra, was not to be found in Konkan. Since official publications provide outturn data for no other crop in this category we adopt only the area figures given in SCRB.

The area figures relating to fodder crops are obtained from the SCRB only. A rate of deflation is to be applied to area under fodder crops in Thana as explained earlier.

The only category that remains is, 'oilseeds'. Though fodder crops accounted for the bulk of the area under non-foodcrops, oilseeds were not an insignificant category among non-foodcrops in Konkan districts. Judging by the area data in SCRBs of 1951-52, 1955-56 and 1958-59 it appears that area under oilseeds was about 3 to 5 percent of the area under non-foodcrops in Thana, 5 to 9 percent in Kolaba, and 10 to 14 percent in Ratnagiri. The relatively important oilseeds in these districts were sesamum and coconut. We adopt the EMh/BCAS figures of area and outturn of sesamum. There was some outturn of groundnut in Ratnagiri district. We take the EMh/BCAS figures relating to this crop also.

As for coconut it has been grown mainly in Ratnagiri. In fact the SCRB area data show that this district accounted for the bulk of the area under coconut in the old as well as reorganised Bombay States. Some data on average yield is furnished in DESAg's 'Oilseeds in India' but these relate to the State of Bombay. BCAS gives yield per acre in nuts separately in the different Konkan districts in 1959-60, 1960-61 and 1961-62. The estimates

are based upon the findings of pilot surveys. In Ratnagiri the coconut crop was heavily damaged due to cyclone in May 1961. We therefore estimate the outturn of this crop in Ratnagiri in the eight years, 1951-52 to 1958-59 on the basis of area figures in SCRB and of a simple average of per acre yields in 1959-60 and 1960-61 shown in BCAS. The average yield comes to 2048 nuts per acre. In the remaining districts we adopt the respective averages of the per acre yields in the three years for which yield data are provided by BCAS. The average for Thana and Bombay Suburban district comes to 1826 nuts per acre and that for Kolaba, 2590 nuts per acre. The figures of area under coconut as also under 'other oilseeds' are taken from SCRBs. We shall depend on the same source for area under miscellaneous food and non-foodcrops.

Finally, we shall estimate the outturn of byproducts. Data relating to these are scanty and hence outturn estimates are likely to be subject to a larger margin of error. It will be seen that byproducts like cotton seed, cotton sticks and jute sticks were not available in Konkan districts. As for rice husk and rice bran the NIC evaluated these as it included in its estimates of income from agriculture the value of outturn of rice and not paddy since data on prices of paddy were not available for all parts of India. We shall however use prices of

paddy for the districts of Maharashtra. Hence a separate evaluation of rice husk and rice bran would mean double counting.

Among the remaining byproducts straw obtainable from important cereals and pulses is the most important. The NIC estimated outturn of straw on the basis of information on ratio of production of straw to that of grain, supplied by the Director, Indian Agricultural Research Institute, and Principal, Government Agricultural College, Kanpur.⁴ More dependable data have since become available in N.S.S. publication No. 32 (Parts I and II). The data here are for the whole country and by population zones. We shall assume that the ratio of outturn of straw to that of the respective crop in a district was the same as that in the population zone in which the district was included.

There is a further difficulty with regard to the districts of Konkan. The more important foodgrains in these districts are rice, ragi and kodra. The N.S.S. publication does not give the necessary data relating to rice and ragi for West India which included Konkan districts.

⁴ See First Report of the National Income Committee, April 1951, issued by the Department of Economic Affairs, Ministry of Finance, Government of India, p. 56.

We shall have to follow the usual practice of adopting data for a nearabout zone. As for kodra no separate data are made available. The cereals are, therefore, classified into paddy, ragi and other cereals for purposes of calculation of outturn of straw.

In respect of paddy the N.S.S. publication gives data relating to North India, East India, South India and Central India. We shall adopt for Konkan districts the ratio shown for South India. Actually we are given three ratios separately for the three rounds, viz. fifth, sixth and seventh. We take an average of the three, which is 0.95. In the case of ragi ratios are shown only for South India. We adopt an average of these ratios which comes to 1.29. As for 'other cereals', the area tables in SCRB indicate that in Konkan districts this category was composed almost wholly of kodra and vari. We shall, therefore, use the ratio for small millets in the N.S.S. publication. We are given ratios respectively for South India and Central India. We take an average of the three ratios for South India. This comes to 1.22.

Data in respect of gram in the N.S.S. publication relate to the whole country and to the population zones of North India and North-West India. An average of the three ratios for the whole country is adopted here. The average is 0.81. As regards pulses other than gram and tur such

as udid, mug, masur and so on, the NIS repeats the NIC ratios for the whole country in the absence of any fresh data. The NIS gives us yield of stalks and straw per acre under the different cereals and pulses in the whole country. The use of the ratio of outturn of straw to that of a crop or alternatively of yield of straw per acre in one region for estimation in another region is fraught with limitations. However, it seems that the former is preferable to the latter since it is likely to be subject to smaller fluctuations as between regions than the latter. The two rates are clearly related in the following manner :

$$\begin{array}{l} \text{Ratio of outturn} \\ \text{of straw to that} \\ \text{of a crop} \end{array} = \frac{\text{Average yield of straw per acre}}{\text{Average yield of the crop per acre}}$$

It is likely that differences in average yield of straw as between regions would be somewhat offset by compensating differences in average yield of the crop, and hence the ratio mentioned above may differ less from region to region. We shall, therefore, analyse the broad relationship between the average yield of straw per acre for gram and that for the remaining pulses estimated by the NIC and adopted in NIS as also certain other relevant data relating to Konkan districts in order to obtain a rough idea of the probable relationship between the ratio for gram and that for other pulses.

The estimated average yield of straw obtained from gram and the remaining pulses as shown in the NIS are tabulated below :

⁵
TABLE 4.3 : AVERAGE YIELD OF STALKS AND STRAW (ALL INDIA)
(in kgs. per acre)

Crops	Gram	Udid	Mug	Masur	Other pulses
Average yield	135	113	94	220	154

(N.B. : The 'other pulses' in the table are exclusive of tur also)

It appears that the yield per acre of straw from gram was less than that of straw from masur or 'other pulses'. Masur may be left out of consideration as the SCRB data indicate that there was no area under this crop in Konkan districts in the years 1951-52 to 1958-59. It will be noted that the yield rate relating to gram was calculated on the basis of data in the N.S.S. publication No. 32 and the remaining rates were a repetition of those estimated by the NIC. The NCAER has suggested in its study on 'Agricultural Income by States, 1960-61' that

⁵ C.S.O. Government of India : NIS, Appendix 2.6, p. 201.

probably the N.S.S. rate was net of straw lost to the farmer through wastage or non-collection. "The yield rates given in the N.S.S. report are based on the data collected through interview method from different agricultural households and, therefore, there is every likelihood that the data so collected relate to the actual quantities received by the farmer."⁶ On the other hand, the NIC rates were gross rates as is indicated by the fact that the NIC evaluated only 75 percent of the straw estimated on the basis of its rates assuming the remaining 25 percent to have been wasted. If it is legitimate to make this distinction between the NIC and the N.S.S. data then it would appear that the gross rate relating to gram was probably higher than that for the other pulses in the table (masur being excluded), unless NIC rates were significant underestimates.

Let us suppose that the same relationship between the different rates held good for Konkan districts as well. The SCRB data show that the yield per acre of gram on the one hand and that of the remaining pulses (exclusive of tur) taken together on the other in Konkan districts were not widely divergent. It was pointed out earlier

that the ratio of outturn of straw to that of a crop is equal to

$$\frac{\text{Average yield of straw per acre}}{\text{Average yield of the crop per acre}}.$$

If it is true that the average yield of straw per acre under gram was higher than the average yield of straw per acre under 'pulses other than gram and tur' and further that yield per acre of gram was more or less the same as that of the residuary pulses in Konkan, then clearly the ratio of outturn of straw to that of the crop would be higher for gram than for the residuary pulses. The SCRB area data indicate that the remaining pulses in Konkan districts mostly included udid and 'other pulses'. Mug was quite unimportant. In that case it could be inferred from Table 4.3 that the ratio of outturn of straw to that of gram was not considerably higher than the corresponding composite ratio for the remaining pulses. The ratio for the residuary pulses is assumed to be 0.70.

It has already been stated that the NIC (and following that the C.S.O. in its publication NIS) assumed that 25 percent of the estimated production of straw was not collected or was wasted. The NIC therefore evaluated only the remaining 75 percent. We shall however adopt the NCAER practice of not making any deflation on this account since we are using N.S.S. data for the more important foodgrains.

In the case of estimates of outturn of byproducts such as arhar sticks, sesamum sticks and bagasse which were clearly of little importance in Konkan districts, we adopt the yield rates assumed for the whole country in the NIS. These rates are as follows. The ratio of yield of arhar sticks per ton of grain is estimated as 6.67 tons. For sesamum sticks the yield rate assumed is 5 maunds per acre. As for bagasse it is estimated that this byproduct forms 22.5 percent of actual 'gur' production. One more minor byproduct is sugarcane tufts. Here also we follow the NIS practice but this publication assumes a per acre value of Rs. 12.50. This may therefore be taken up in Chapter IX, in which the outturn of crops is evaluated.

The two byproducts that remain to be considered are (i) farmyard wood and (ii) grass. The former 'comprises of timber and firewood collected by the primary producers from 'trees outside regular forests', e.g. trees in village commons, field ridges and fruit gardens no longer productive of fruits etc."⁷ In NIS the C.S.O. makes estimates of outturn of timber and firewood, for the whole country on the basis of "Timber Trends Study for the Far East-Country Report for India" issued by the

⁷

C.S.O., Government of India : NIS, p. 26.

Inspector-General of Forests, Government of India on behalf of the FAO. NCAER in its study on "Agricultural Income by States, 1960-61" makes similar estimates for the whole country with the help of the same source of data and allocates the all-India estimates as between different States on the basis of combined area under miscellaneous tree crops and groves, and fruits other than bananas and grapes. We thus get estimates relating to Maharashtra in 1960-61. These estimates are distributed as between the different districts of Maharashtra on the basis of the same criterion, viz. combined area under miscellaneous tree crops and groves, and fruits other than bananas and grapes, data on which are drawn from BCAS. It is necessary to project the estimates for a district backwards so as to obtain outturn figures for the years 1951-52 to 1958-59. We shall assume that the outturn of timber and firewood in the agricultural sector of a district from year to year varied in the same proportion as the combined area under miscellaneous tree crops and groves, and fruits other than bananas and grapes, the data for which are drawn from the SCRB. No adjustment is made in data for Thana district.

The NIC estimated the outturn of grass on the basis of data in Burns' "Technological Possibilities of Agricultural Development in India". In NIS the C.S.O. followed the same practice for want of fresh data. The NCAER how-

ever has made estimates for the different States with the help of data on cost of green grass used as feed for livestock provided in N.S.S. Report No. 65. We are given the value, and not the outturn, of grass. This point will therefore be considered in Chapter IX.

Tables 4.4 to 4.11 give the area and outturn of crops in the districts of Konkan.

TABLE 4.4 : AREA UNDER CROPS IN THANA DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	3462	3474	3497	3535	3511	3601	3651	3700
Ragi	573	574	548	574	592	591	610	605
Kodra	25	26	31	31	33	27	19	15
Other cereals	343	339	347	364	357	364	381	367
Total cereals	4403	4413	4423	4504	4493	4583	4661	4687
Gram	18	19	21	22	23	26	28	28
Tur	85	86	89	87	86	98	96	91
Other pulses	195	199	203	212	217	219	207	198
Total pulses	298	304	313	321	326	343	331	317
Total foodgrains	4701	4717	4736	4825	4819	4926	4992	5004
Sugarcane	1	1	1	1	1	2	2	2
Chillies	21	21	22	22	22	22	22	16
Betelnuts	-	-	-	-	-	-	-	-
Other condiments and spices	4	5	3	3	3	2	2	1
Total condiments and spices	25	26	25	25	25	24	24	17
Fruits and vegetables	98	97	98	106	110	84	80	76
Miscellaneous foodcrops	-	-	-	3	2	3	1	5
Total foodcrops	4825	4841	4860	4960	4957	5039	5099	5104
Groundnut	-	1	-	1	1	-	-	1
Sesamum	14	15	16	13	14	15	15	12
Coconut	8	8	7	10	8	4	4	4
Other oilseeds	69	64	67	68	69	70	72	72
Total oilseeds	91	88	90	92	92	89	91	89
Total fibres	20	21	23	24	24	23	21	20
Total drugs and narcotics	8	8	7	8	7	8	8	8
Fodder crops	1849	1830	1822	1779	1708	2085	2132	2145
Miscellaneous non-foodcrops	3	3	2	2	1	3	1	2
Total non-foodcrops	1971	1950	1944	1905	1832	2208	2253	2264
Gross cropped area	6796	6791	6804	6865	6789	7247	7352	7368

TABLE 4.5 : OUTTURN OF CROPS IN THANA DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	1957	2692	3238	3079	2958	2746	3316	3814
Ragi	148	147	153	164	159	148	147	141
Kodra	5	5	5	5	5	3	2	1
Other cereals	56	65	74	71	73	67	79	80
Total cereals	2166	2909	3470	3319	3195	2964	3544	4036
Gram	3	3	2	3	3	3	3	4
Tur	10	9	10	10	10	11	10	10
Other pulses	21	18	20	20	22	21	19	18
Total pulses	34	30	32	33	35	35	32	32
Total foodgrains	2200	2939	3502	3352	3230	2999	3576	4068
Sugarcane (gul)	2	2	1	1	1	1	1	1
Chillies	5	6	3	4	3	2	1	3
Groundnut	-	-	-	-	-	-	-	-
Sesamum	1	-	1	1	3	2	1	1
Coconut	(a) 14608	14608	12782	18260	14608	7304	7304	7304
Straw	2141	2847	3385	3246	3127	2902	3454	3920
Arhar sticks	67	60	67	67	67	73	67	67
Sesamum sticks	(b) 70	75	80	65	70	75	75	60
Bagasse	-	-	-	-	-	-	-	-
Timber	(c) 3	3	3	3	3	26	10	10
Firewood	(c) 200	187	187	197	204	1855	726	720

(a) in hundred nuts. (b) in hundred maunds. (c) in thousand cubic feet.

TABLE 4.6 : AREA UNDER CROPS IN BOMBAY SUBURBAN DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	107	107	104	105	103	72	74	72
Fruits and vegetables	16	16	16	16	16	24	23	24
Coconut	4	4	4	4	4	7	7	7
Fodder crops	119	118	114	113	112	120	120	116
Other crops	-	-	-	-	-	12	-	-
Gross cropped area	246	245	238	238	235	224	224	219

* N.B. : This was under chillies but there was no outturn of the crop.

TABLE 4.7 : OUTTURN OF CROPS IN BOMBAY SUBURBAN DISTRICT

(Figures in hundred tons)

Crops		1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy		60	84	96	90	79	54	67	73
Coconut	(a)	7304	7304	7304	7304	7304	12782	12782	12782
Straw		57	80	91	85	75	51	64	69
Timber	(b)	-	-	-	-	-	1	1	1
Firewood	(b)	28	31	31	31	31	72	72	75

(a) in hundred nuts.

(b) in thousand cubic feet.

TABLE 4.8 : AREA UNDER CROPS IN KOLABA DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	3116	3169	3222	3236	3258	3261	3272	3277
Ragi	487	505	515	516	487	471	462	447
Kodra	43	35	35	36	34	33	32	34
Other cereals	239	249	261	257	249	248	244	238
Total cereals	3885	3958	4033	4045	4028	4013	4010	3996
Gram	16	14	16	15	14	14	11	12
Tur	32	29	29	31	31	28	25	25
Other pulses	271	262	256	257	266	259	236	241
Total pulses	319	305	301	303	311	301	272	278
Total foodgrains	4204	4263	4334	4348	4339	4314	4282	4274
Sugarcane	1	1	1	1	1	-	-	-
Chillies	15	14	16	16	16	15	15	16
Betelnuts	13	12	12	13	13	13	13	14
Other condiments and spices	1	-	-	-	-	1	-	-
Total condiments and spices	29	26	28	29	29	29	28	30
Fruits and vegetables	67	59	59	51	51	52	48	47
Miscellaneous foodcrops	-	-	119	4	11	-	1	-
Total foodcrops	4301	4349	4541	4433	4431	4395	4359	4351
Groundnut	-	-	-	-	-	-	-	-
Sesamum	35	40	39	40	41	43	43	42
Coconut	21	18	18	19	19	19	19	19
Other oilseeds	10	2	2	2	2	1	1	1
Total oilseeds	66	60	59	61	62	63	63	62
Total fibres	4	4	3	3	3	3	5	4
Total drugs and narcotics	-	-	-	-	-	-	-	-
Fodder crops	635	673	684	751	888	961	1016	993
Miscellaneous non-foodcrops	-	-	-	1	1	-	-	1
Total non-foodcrops	705	737	746	816	954	1027	1084	1060
Gross cropped area	5006	5086	5287	5249	5385	5422	5443	5411

TABLE 4.9 : OUTTURN OF CROPS IN KOLABA DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	2275	2352	2998	2476	2389	2187	2266	2902
Ragi	130	150	156	151	147	131	129	124
Kodra	10	9	11	9	10	9	9	9
Other cereals	50	65	68	65	63	63	57	54
Total cereals	2465	2576	3233	2701	2609	2390	2461	3089
Gram	2	2	2	2	2	2	1	2
Tur	4	4	4	5	4	4	3	3
Other pulses	34	36	33	34	35	32	27	28
Total pulses	40	42	39	41	41	38	31	33
Total foodgrains	2505	2618	3272	2742	2650	2428	2492	3122
Sugarcane (gul)	1	1	1	1	1	-	-	-
Chillies	2	3	1	2	2	5	2	4
Groundnut	-	-	-	-	-	-	-	-
Sesamum	3	4	4	4	4	4	4	4
Coconut (a)	54390	46620	46620	49210	49210	49210	49210	49210
Straw	2428	2544	3170	2663	2574	2359	2420	3016
Arhar sticks	27	27	27	33	27	27	20	20
Sesamum sticks (b)	175	200	195	200	205	215	215	210
Bagasse	-	-	-	-	-	-	-	-
Timber (c)	53	116	63	54	53	46	49	49
Firewood (c)	3644	8027	4353	3753	3654	3145	3353	3336

(a) in hundred nuts.

(b) in hundred maunds.

(c) in thousand cubic feet.

TABLE 4.10 : AREA UNDER CROPS IN RATNAGIRI DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	3035	3051	3130	3127	3149	3158	3174	3180
Ragi	1381	1427	1428	1443	1488	1489	1446	1385
Kodra	615	628	659	681	702	732	632	687
Other cereals	374	381	381	406	424	420	396	388
Total cereals	5405	5487	5598	5657	5763	5799	5648	5640
Gram	1	1	-	-	-	-	1	-
Tur	10	13	13	14	15	14	12	12
Other pulses	478	481	460	462	403	407	382	369
Total pulses	489	495	473	476	418	421	395	381
Total foodgrains	5894	5982	6071	6133	6181	6220	6043	6021
Sugarcane	5	5	5	4	4	4	3	2
Chillies	21	21	24	26	26	27	25	21
Betelnuts	36	37	37	38	38	37	37	36
Other condiments and spices	1	-	-	1	1	-	-	1
Total condiments and spices	58	58	61	65	65	64	62	58
Fruits and vegetables	133	141	158	157	169	153	150	181
Miscellaneous foodcrops	-	-	2	-	-	3	47	14
Total foodcrops	6090	6186	6297	6359	6419	6444	6305	6276
Groundnut	5	5	5	5	4	4	2	1
Sesamum	16	138	125	121	129	133	114	120
Coconut	160	159	159	165	165	168	168	168
Other oilseeds	122	-	7	7	8	2	-	1
Total oilseeds	303	302	296	298	306	307	284	290
Total fibres	30	24	17	18	18	18	13	12
Total drugs and narcotics	-	-	-	-	-	-	-	-
Fodder crops	1756	1810	2135	1666	2030	2079	2310	2360
Miscellaneous non-foodcrops	-	-	-	-	-	-	-	3
Total non-foodcrops	2089	2136	2448	1982	2354	2404	2607	2665
Gross cropped area	8179	8322	8745	8341	8773	8848	8912	8941

TABLE 4.11 : OUTTURN OF CROPS IN RATNAGIRI DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	1804	1728	2046	1917	2071	1957	2125	2280
Ragi	285	283	321	332	346	374	352	329
Kodra	138	125	132	139	143	182	123	136
Other cereals	69	56	55	62	64	85	57	57
Total cereals	2296	2192	2554	2450	2624	2598	2657	2802
Gram	-	-	-	-	-	-	-	-
Tur	1	2	2	2	2	2	1	2
Other pulses	52	55	51	49	42	41	40	41
Total pulses	53	57	53	51	44	43	41	43
Total foodgrains	2349	2249	2607	2501	2668	2641	2698	2845
Sugarcane (gul)	7	7	6	5	5	5	4	3
Chillies	2	2	3	26	24	6	4	7
Groundnut	2	2	2	2	1	-	1	-
Sesamum	2	14	11	11	11	11	10	11
Coconut (a)	327680	325632	325632	337920	337920	344064	344064	344064
Straw	2371	2266	2622	2528	2695	2696	2721	2854
Arhar sticks	7	13	13	13	13	13	7	13
Sesamum sticks (b)	80	690	625	605	645	665	570	600
Bagasse	2	2	2	1	1	1	1	1
Timber (c)	6	6	71	67	36	34	31	34
Firewood (c)	388	405	4879	4594	2470	2321	2145	2367

(a) in hundred nuts

(b) in hundred maunds

(c) in thousand cubic feet

CHAPTER V

AREA AND OUTTURN OF CROPS IN THE DISTRICTS OF DECCAN

-- ESTIMATION

We shall analyse in this chapter the data on area and outturn of crops in Deccan districts so that we can arrive at our own estimates. As we have already seen these are districts with a comparatively higher proportion of gross cropped area under 'selected' crops. Further, Table 3.2 (p. 94) indicates that these districts are also better placed as compared to those of Konkan in respect of the proportion of area under crops for which no outturn data are provided in the SCRB, i.e. crops which we designated as category (c) in Chapter III. Thus in 1951-52, 1955-56 and 1958-59 the proportion in Dhulia and Jalgaon districts varied between 1 and 3 percent. In Ahmednagar and Sholapur it was a little less than 10 percent. It was somewhat more marked in the remaining five districts of Deccan, though even here the highest proportion recorded for any year was less than the proportions respectively for all the Konkan districts except Kolaba. Moreover in these Deccan districts over 60 percent of the area -- in some districts even over 75 percent of the area -- under category (c) was accounted for by fodder crops, i.e. low-yielding crops.

To begin with, we shall consider the need, if any, to take into account the probable failure of crops in framing our estimates of production. For reasons indicated in an earlier chapter we are making extensive use of data provided by the SCRBs. The SCRBs classify gross cropped area into area 'matured' and area 'failed'. It will be seen that if no allowance is made for area 'failed' in production estimates an element of overestimation would clearly creep in. The problem was not raised in relation to Konkan districts because SCRBs from year to year showed area 'failed' in these districts as 'nil'.

Among Deccan districts the area 'failed' was shown to be 'nil' in the case of Kolhapur. The area 'failed' as a proportion of gross cropped area in the remaining Deccan districts is shown in Table 5.1.

The two points that need to be considered are (a) the reliability of data on area 'failed' and (b) the extent to which the incidence of failure is likely to be taken into account in our estimates of outturn. As for (a) a personal enquiry at the Department of Agriculture, Government of Maharashtra brought the information that the figures of area 'failed' were very rough in character. We may however note that SCRB shows almost the whole of the area 'failed' in different districts as 'reported',

TABLE 5.1 : PROPORTION OF AREA 'FAILED' TO GROSS CROPPED AREA, 1951-52 TO 1958-59

(Percentages)

Districts	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Dhulia	0.5	18.4	-	1.2	-	11.8	10.6	-
Jalgaon	2.4	0.2	1.7	-	-	-	-	-
Nasik	-	1.2	0.1	0.03	-	2.6	-	-
Ahmednagar	2.8	28.8	7.7	4.1	8.5	-	-	-
Poona	7.5	25.9	13.6	13.4	18.1	15.3	18.9	5.3
Sholapur	23.0	28.4	7.3	10.4	4.3	10.1	3.6	-
Satara	2.4	9.7	2.8	1.2	0.6	10.1	9.3	0.04
Sangli	-	12.7	4.0	3.6	-	-	-	0.5

N.B.

(a) Proportions are derived on the basis of area data in the SCRBs. In the case of Dhulia no allowance is made for the fact that some territories were transferred to Gujerat.

(b) For 1951-52 and 1952-53 the SCRB shows division of net cropped area, and not gross cropped area, into area 'matured' and 'failed'. This is presumably an error. We have related area 'failed' to gross cropped area in every district for these two years also.

(c) In the case of Satara SCRB, 1957-58 shows area 'failed' as 90.7 percent of the gross cropped area which seems to be a misprint. Probably the area 'failed' is wrongly shown as area 'matured' and vice versa. The proportion for 1957-58 is calculated on the basis of this assumption.

rather than as 'non-reported'.

Coming to (b) it is clear that the outturn estimates based upon crop-cutting experiments would ordinarily make an allowance for the incidence of failure. ^{the} In/case of failure of a crop over an area the average yield on area sown would turn out to be lower than that on area 'matured'. It is this lower yield which will be reported in yield statistics. When this yield is multiplied into the area sown under the relevant crop the incidence of failure will have been taken care of. What remains is the problem of crops other than those we designated in Chapter III as 'selected' or 'specified' crops.

In Poona district where area reported to have failed seems to be proportionately high, the proportion of area under crops other than 'selected' was between 30 and 35 percent. The maximum proportion of area 'failed' to the gross cropped area came to about 26 percent in 1952-53. Thus area 'failed' that was left out of account in crop-cutting surveys was at the most 8 to 9 percent of the gross cropped area (i.e. 26 percent of 30 to 35 percent), assuming uniform incidence of failure on different crops. Consider further Sholapur and Ahmednagar districts where proportion of area 'failed' was significant in some years. In 1952-53 this proportion was 28 percent in Sholapur and 29 percent in Ahmednagar -- the highest ever among

Deccan districts in any year during the period. The proportion of area under crops other than 'specified' in the two districts was in the range of 15 to 17 percent and 20 to 24 percent respectively. A calculation similar to that made in the case of Poona district and based upon the same assumption would indicate that area 'failed' under crops not covered by crop-cutting surveys was at the maximum 4 to 5 percent and 6 to 7 percent of the gross cropped area in the respective districts. Thus at the most area 'failed' which was left out of account in crop-cutting surveys probably amounted to 4 to 9 percent of the gross cropped area in two or three districts in a year or two.

It should also be remembered that the foregoing calculations are based upon the assumption of uniform incidence of failure on the different categories of crops. In actual fact it is probable that a category of crops accounting for 65 to 70 percent -- in some districts, even more -- of the gross cropped area and comprising the more important crops in the respective districts will show a proportionately larger area 'failed' than the remaining crops taken together. If that be so the maximum proportion of area 'failed' under crops other than 'selected' ones would be even less than 9 percent occurring only in one year in Poona district.

We must also note that apart from estimates of outturn based upon crop-cutting surveys the SCRBs also give for additional crops figures of outturn derived by the traditional annewari method. As per data on area in the SCRBs these crops accounted for about 10 to 14 percent of the gross cropped area in Poona, Sholapur and Ahmednagar districts. Possibly some allowance for failure is made in the outturn estimates of these crops also though there is a view that adequate allowance not being made there is probably some overestimation here.¹ Again, if we assume uniform incidence of failure the area 'failed' presumably unaccounted for in outturn estimates comes down to a maximum of 5 to 6 percent of the gross cropped area only in Poona district in one year, viz., 1952-53. The probable proportion would be quite small in other districts in all years and in Poona in the remaining years. Further, this would relate mostly to area under unspecified residuary crops which for most part are low-yielding. Hence the element of error, if any, that would enter on this account into our estimates of agricultural income is likely to be small. Besides, we are not certain how far the data on area 'failed'

¹
See R.C.Desai : Standard of Living in India and Pakistan 1931-32 to 1940-41 (The Popular Book Depot, Bombay 7, 1953), p. 9.

given in SCRBs are reliable. In view of the foregoing analysis it seems reasonable not to make any separate deflation in the outturn and value of crops in Deccan districts in order to allow for the probable failure of crops.

It was stated in Chapter II that four districts of Deccan were affected by boundary revision viz. Kolhapur, Dhulia, Satara and Sangli. The adjustments in respect of the first two districts have been 'external', i.e. in relation to the neighbouring States whereas in the case of Satara and Sangli these have been 'internal'. We shall ignore adjustments between Satara and Sangli. A village, Shamgaon, with a geographical area of 7.1 sq. miles, was transferred from Sangli district to Satara district in July 1958.² The territory involved -- less than 0.3 percent of the geographical area of either Satara or Sangli -- is so negligibly small that this adjustment could be conveniently left out of account.

After reorganisation of States in 1956 Kolhapur district was expanded with the inclusion of Chandgad taluka formerly in Belgaum district, now a part of the neighbouring State of Mysore. It was seen in Chapter II that the readjustment increased the geographical area of

² Census of India, 1961 (Volume X), Maharashtra, Part II-A, p. 127.

Kolhapur by 14.1 percent. SCRB from 1956-57 onwards provide data for the new Kolhapur district, but those prior to that year give figures for the older district. However EMh and BCAS have revised data for the earlier years in view of the expansion of this district. We shall adopt EMh figures of area and outturn for 1951-52 and 1952-53, and BCAS ones for the years 1953-54 to 1955-56 in the case of this district.

There is however one further point. The coverage of data for outturn is wider in SCRB than in EMh/BCAS. The crops for which SCRB gives data but not EMh/BCAS are as follows : barley, maize, Italian millets, kodra, little millets, common millets, mug, udid, horse gram, masur, potatoes, chillies and castor.³ This means that besides potatoes, chillies and castor we get in SCRB a more detailed breakdown for cereals and pulses. It may also be noted that EMh/BCAS provide data on outturn of 'total cereals' and 'total pulses' respectively so that we can derive figures relating to the categories of 'cereals other than rice, wheat, jowar, bajri and ragi' and 'pulses other than gram and tur'.

Clearly outturn data separately for Italian millets,

3

The outturn estimates for all the crops mentioned are based upon traditional methods.

little millets and common millets are of little use as we are not likely to obtain prices of these crops. As for barley it is an absolutely unimportant crop in all the Maharashtra districts. These four crops are, therefore, better included in the residuary category of 'other cereals'. That leaves maize and kodra. Area and outturn data for maize pertaining to the new district of Kolhapur for 1954-55 and 1955-56 are available in SAB, 1957-58 which revised SCRB figures in the case of this district in view of readjustment of boundaries. As for the remaining three years, 1951-52, 1952-53 and 1953-54, the SAB gives figures of area and outturn by division and not districts. The expanded district of Kolhapur forms here a part of Poona division which included in addition the districts of Ahmednagar, Poona, Satara, Sangli, and Sholapur. We can obtain area and outturn of maize in each of these districts in 1951-52, 1952-53 and 1953-54 from SCRBs as these districts did not undergo any alteration in boundaries.⁴ By deducting from the division total for a year the sum of the relevant figures for these five districts we get area and outturn of maize in the new district of Kolhapur in that year.

⁴ A village was transferred from Sangli to Satara. However the territory involved is negligibly small. What is more important in the present context is that the fact of transfer is irrelevant since we are interested not in figures relating to individual districts separately but, as is seen in the text, in the sum total of figures for the districts concerned.

As regards kodra we do not have data in SAB. However, this seems to be an insignificant crop in Kolhapur district as is indicated by figures of outturn in SCRBS of all the eight years. For the years 1951-52 to 1955-56 we therefore adopt SCRBS figures of area and outturn of this crop though these pertain to the district exclusive of Chandgad taluka. This does not mean that outturn of crop, if any, in the taluka in these five years is totally left out of account. We have production estimates for 'total cereals' relating to the expanded district in EMh/BCAS. Hence what merely happens is that the outturn of kodra in Chandgad taluka in those five years is merged into the outturn of the residuary category of 'other cereals' in the district. Whether this leads to over-estimation or underestimation in the value of the major category, 'cereals', in the district will depend upon the relative average price in the district of kodra on the one hand and the residuary cereals taken together on the other. In any case error in estimation is likely to be negligibly small.

The four pulses left out in EMh/BCAS are mug, udid, horse gram and masur. From the SCRBS for 1956-57, 1957-58 and 1958-59 which give data for the new Kolhapur district we find that there was no production of masur in this district. In the case of the remaining crops the

question is whether adoption of the SCRB figures of outturn of these crops for 1951-52 to 1955-56 will introduce a significant margin of error. We may surmise on the basis of a small exercise. If we deduct outturn of gram and tur in every year upto 1955-56 from outturn of 'total pulses' in that year as given in EMh/BCAS, we obtain outturn of 'other pulses' (inclusive of mug, udid and horse gram) in the new Kolhapur district. On the other hand, if we carry out the same exercise with corresponding figures in SCRBs we get outturn of the same residuary category in the old Kolhapur district. By subtracting the outturn of 'other pulses' in the old district from that in the new, we derive probable outturn of this residuary category in Chandgad taluka. The results are tabulated below:-

TABLE 5.2 : OUTTURN OF 'OTHER PULSES' IN CHANDGAD TALUKA AS A PROPORTION OF THE OUTTURN OF 'TOTAL PULSES' IN THE NEW KOLHAPUR DISTRICT, 1951-52 TO 1955-56.

(Outturn figures in hundred tons)

Year	Chandgad taluka: 'other pulses'	New Kolhapur district: 'total pulses'	(2) as % of (3)
1	2	3	4
1951-52	6	82	.7.3
1952-53	4	90	4.4
1953-54	6	101	5.9
1954-55	5	103	4.9
1955-56	4	114	3.5

It will be seen that if the outturn of 'other pulses' in Chandgad taluka were entirely left out of account the outturn of 'total pulses' in the expanded Kolhapur district would be underestimated to the extent of about 4 to 7 percent. This would be a significant degree of underestimation for one category of crops, 'pulses', though it may not affect much the aggregate agricultural income of the district as this category of crops seemed to be of relatively minor importance in Kolhapur district.

In actual fact the outturn of 'other pulses' in Chandgad taluka is not left out of account. If we adopt SCRB figures of outturn of mug, udid and horse gram in the relevant years for the district then the outturn of these crops, if any, in Chandgad Taluka (included in the amounts in col. 2 of Table 5.2) would be merged into the outturn of residuary pulses (exclusive of gram, tur, mug, udid and horse gram)⁵ in the district. Clearly the allocation of the outturn of mug, udid and horse gram in Chandgad taluka to the category 'miscellaneous pulses' in the district would result in neither overestimation nor underestimation of the value of 'pulses' if the average price of the three pulses together on the one hand and

⁵ We shall designate this category as 'miscellaneous pulses' and 'pulses exclusive of gram and tur but inclusive of mug, udid and horse gram' as 'other pulses'.

of 'miscellaneous pulses' as a group on the other in the district were the same. In actual fact it is likely that the latter average price was lower than the former, which fact would cause some amount of underestimation in the value of the category, 'pulses'. The margin of error here also for the new Kolhapur district is likely to be insignificant. We shall therefore adopt the SCRB figures of area and outturn in the case of mug, udid and horse gram for the district from 1951-52 to 1955-56.

From the figures of outturn of potatoes and castor in the expanded district shown in SCRBs, 1956-57 to 1958-59 as also in SAB, 1957-58 for the years 1954-55 and 1955-56 it is clear that the crops were hardly grown in the district. That leaves chillies. EMh/BCAS do not give area and outturn data relating to this crop. But SAB, 1957-58 gives the relevant figures divisionwise for 1951-52 to 1953-54 and districtwise for 1954-55 and 1955-56. We adopt the 1954-55 and 1955-56 figures for Kolhapur district. As for the earlier three years we derive the area and outturn estimates by following the same procedure as in the case of maize.

Further, we have to consider crops for which outturn figures are shown neither in SCRB nor in EMh/BCAS. Important categories are (a) fruits and vegetables and

(b) fodder crops. In relation to these crops area figures are important whether we apply to them per acre values or per acre yield, derived from alternative sources, in order to estimate the value of these crops. SAB, 1957-58 gives figures of area by major categories of crops, again divisionwise for 1951-52 to 1953-54 and districtwise for 1954-55 and 1955-56. We obtain the figures pertaining to Kolhapur district for 1954-55 and 1955-56. The figures for the three earlier years are derived by deducting from the respective division totals the corresponding SCRB totals for the districts of Ahmednagar, Poona, Satara, Sangli and Sholapur taken together.

It will be seen in the end that no area under crops in Chandgad taluka before 1955-56 is left out of account because we can obtain from SAB, 1957-58, data on area by major categories of crops in the expanded district for 1954-55 and 1955-56 and can derive the same for the three earlier years by using data for Poona Division in the SAB.

As we have seen in an earlier chapter Dhulia 'lost' 10.3 percent of its geographical area as a result of transfer of villages to the State of Gujarat. All SCRBs upto 1958-59 provide data for the old district of Dhulia (i.e. West Khandesh) since the 'loss' of territory came

in 1960 with the break-up of the reorganised Bombay State. Even EMh/BCAS are not helpful as they draw the figures from SCRBs without making allowance for the loss. Hence an adjustment in figures of area and outturn of crops for Dhulia as given in SCRBs is called for.

We shall follow the same method of deriving rates of deflation here as was employed in the case of Thana district. The DSA for West Khandesh (i.e. Dhulia) district, 1958-59 issued by the BESM gives data on area under different crops in 1957-58 and 1958-59 by talukas as constituted before the formation of Maharashtra. As in the case of Thana district, we assume here that the cropping pattern in the villages of Dhulia transferred to Gujarat was the same as that in the four talukas to which they formerly belonged, viz., Akalkuwa, Taloda, Nandurbar and Nawapur. Further, we select such crops as, on an average of the two years, each accounted for at least one percent of the average gross cropped area in the district. These crops were: rice, wheat, jowar, bajri, ragi, other cereals, gram, tur, mug, udid, other pulses, chillies, groundnut, sesamum, and cotton.⁶

⁶
It may be noted that the DSA gives a breakdown for 26 individual crops as also for certain group-categories, e.g. fruits and vegetables, fodder crops, residuary items, etc.

We then calculate the proportion of area under each crop (averaged for two years) in the four talukas (inclusive of 'lost' territory) taken together to the corresponding average area in the old district. The proportions are shown in the table below :

TABLE 5.3 : PROPORTION OF AVERAGE AREA UNDER CROPS IN THE FOUR TALUKAS TO AVERAGE AREA UNDER THE RESPECTIVE CROPS IN DHULIA DISTRICT (AVERAGE FOR 1957-58 AND 1958-59)

(Percentages)

Rice	Wheat	Jowar	Bajri	Ragi	Other cereals	Gram	Tur	Mug	Udid	Other pulses	Chillies	Groundnut	Sesamum	Cotton
78.0	40.2	9.3	9.1	14.4	56.6	44.5	73.0	30.5	56.5	9.7	46.8	19.5	11.5	30.4

According to the Census of India, 1961 the total geographical area of the four talukas at present comes to 1243.6 sq. miles.⁷ The 'loss' of geographical area amounted to 554.9 sq. miles. Thus the geographical areas of the four

⁷ See Census of India, 1961, Vol. X, Maharashtra, Part II-A, pp. 57-58. (Akalkuwa: 320.0 sq. miles; Taloda: 143.8 sq. miles; Nandurbar: 424.7 sq. miles; and Nawapur: 355.1 sq. miles).

talukas before 1960 when Maharashtra was formed was 1798.5 sq. miles. In other words, upon the bifurcation of the reorganised Bombay State the geographical area of the four talukas was reduced by 30.8 percent. We multiply into the respective proportions in Table 5.3, 30.8 percent i.e., .308, in order to derive the probable proportion of average area under a crop in the villages transferred to corresponding average area in the old Dhulia district. The proportions so calculated are shown below, ignoring decimals.

TABLE 5.4 : PROBABLE PROPORTION OF AVERAGE AREA UNDER CROPS IN THE 'LOST' TERRITORIES TO AVERAGE AREA UNDER THE RESPECTIVE CROPS IN DHULIA DISTRICT

(Percentages)

Rice	Wheat	Jowar	Bajri	Ragi	Other cereals	Gram	Tur	Mug	Udid	Other pulses	Chillies	Ground-nut	Sesamum	Cotton
24	12	3	3	4	17	14	23	9	7	3	14	6	4	9

We shall deflate the area and outturn of each crop in Dhulia district by the proportion shown against it in the foregoing table. For this purpose we shall take from

EMh/BCAS figures of area and outturn of crops included in those publications and from SCRB those respectively of mug, uddid and chillies. The assumptions implicit in this procedure of deriving rates of deflation have already been elaborated in the preceding chapter in connection with the analysis of data for Thana district. 'Other cereals' in the table are inclusive of maize and kodra. The data for these two crops are, however, shown separately in the area and outturn tables at the end of this chapter. The data are taken from SCRB and the rate of deflation estimated for 'other cereals' is applied individually to maize and kodra. In the same way the figures of area and outturn of horse gram are drawn from SCRB. These are deflated by the proportion shown for 'other pulses'.

The only alternative that remains is the one chosen by the BESM,⁸ viz. that of ignoring altogether adjustments in district boundaries. Probably the Bureau chose this course because it would be particularly difficult to make an allowance for these adjustments in respect of income originating in the non-agricultural sector. The difficulty is relatively less for a study such as the present which

⁸ See M.A.Telang and B.W.Chavan, Report on the State Income of Maharashtra, 1955-56 to 1958-59 (Quarterly Bulletin of Economics and Statistics, Bureau of Economics and Statistics, Government of Maharashtra, July-September, 1961), pp. 1-87.

is confined only to the agricultural income. Moreover the difference to income which 'loss' of territory would make is clearly more significant for a district than for the State as a whole. Hence it is advisable for us to attempt to make some allowance for the 'loss' of territory. It is true that there is an element of arbitrariness in the deflation ratios worked out above, but "any sensible guess is better than mere omission; there is no reason to regard zero as a closer approximation to truth than a reasonable guess."⁹

It is true that no allowance has been made for crops in 'lost' territories other than those included in Table 5.4. Technically this should result in some degree of overestimation in the agricultural income of the district. But the overestimation, if any, would be absolutely negligible because one finds from the DSA, West Khandesh (i.e. Dhulia) that the total area under these crops in the relevant years in the four talukas together was very much less than 1 percent of the gross cropped area of the district. Then again, what would be left out of account is not the total area under these crops in the four

talukas but such area only in the villages 'lost'. It will be seen that the area involved is quite negligible. Hence we adopt figures of area and outturn in Dhulia respectively of sugarcane and tobacco from EMh/BCAS and those of the remaining crops from SCRBs.

We shall now turn to estimation of area and outturn by major groups of crops. Among cereals we take the figures of area and outturn of wheat, jowar, bajri and ragi from EMh/BCAS and those of maize and kodra from SCRB. Area under rice is taken from EMh/BCAS. The outturn of rice in these publications has to be converted into that of paddy. It was pointed out in the preceding chapter that the conversion ratio of paddy into rice in Maharashtra districts, according to official agencies, is approximately 1:0.6667. The same ratio is used to estimate the outturn of paddy in Deccan districts. Since EMh/BCAS also give area and outturn of all the cereals together we can derive the area and outturn of the residuary item, viz. 'other cereals'.

As for pulses we depend upon EMh/BCAS for figures relating to gram and tur and on SCRB for those pertaining to mug, udid and horse gram. The figures of area and outturn of 'total pulses' in EMh/BCAS are used to derive the figures for 'other pulses'. It is found that in Deccan

districts sugarcane accounted for well-nigh the whole of the area under 'sugars'. We take the relevant figures given in EMh/BCAS. Area under 'other sugars', if any, is taken from SCRB.

Among the foodcrops the two major groups which remain to be considered are (i) condiments and spices, and (ii) fruits and vegetables. As for (i) data relating to chillies are furnished in the SCRB district by district. The relevant area data indicate that in almost all the districts an overwhelmingly large proportion of area under condiments and spices was under chillies. There are, however, a few exceptions. In Jalgaon district coriander accounted for somewhat higher proportion of area under this category than chillies. Further, garlic in Poona, coriander in Satara, and turmeric in Satara and Sangli were significant crops in this group. All the same in each district a substantial, if not an overwhelmingly large, proportion of area under this group of crops was devoted to chillies. Further, there is no possibility of obtaining figures of respective average yield of the other crops mentioned above. Finally, condiments and spices were a relatively insignificant group of crops in Deccan districts accounting in many cases for less than 1 percent and not in any case more than 2 to 2 1/2 percent, of the area under foodcrops. In view of all this we

take area and outturn of chillies and area of the remaining condiments and spices from SCRB.

A scrutiny of the area data in SCRBs relating to fruits and vegetables reveals that area under all fruits formed less than 1 percent -- in some cases very much less than 1 percent -- of the area under foodcrops in all the districts of Deccan except Jalgaon. In Jalgaon the relevant proportion ranged in the neighbourhood of 2 percent. The only fruit of significance in Jalgaon was the banana.

The possible sources of data on average yield of banana are : MR on banana; 'Estimates'; BCAS and a report on the survey of three villages in Jalgaon district conducted by the GIPE in 1956-57. The first two sources are inferior from our point of view not only because the estimates made are rough in character¹⁰ but because the data relate to States and not districts. The GIPE report is of little use to us. The outturn figures are in bunches, not in weight. The problem of estimating outturn is, however, not quite serious as BCAS gives estimates of average yield of banana in Jalgaon district in the years 1955-56, 1957-58, 1959-60, 1960-61, 1961-62 and

¹⁰ It will be seen that 'Estimates' includes banana among non-forecast crops, the estimates relating to which are known to be much less reliable.

1962-63. These estimates are based upon pilot surveys. The estimation of outturn would be of little use, however, in view of the paucity of data on prices. The area of banana is taken from SCRB.

As in the case of fruits it is clear from the data in SCRBs that area under vegetables formed less than 1 percent of area under foodcrops in all Deccan districts except Nasik, Poona and Satara. In Nasik a substantially large proportion of area under vegetables was devoted to onions, and in Poona and Satara, to potatoes and onions. In fact area under onions in the three districts and that under potato in Poona and Satara accounted for an overwhelming proportion of area under the respective crops in Deccan districts as a whole. Another vegetable crop of some significance in Deccan districts was sweet potato.

The area and outturn of potato are provided in SCRBs. SAB is, however, used for data relating to Kolhapur in 1954-55 and 1955-56. As regards sweet potatoes one possible source for data on average yield is 'Estimates'. But the data here relate to the whole State of Bombay. In some of the village survey reports of the GIPE there are tables on marketing of commodities which provide data on area and total outturn of sweet potatoes. The yield per acre could be derived from

these data. But the area shown under sweet potato is so small that it would not be legitimate to treat yield per acre of sweet potato in the respective villages as representative of the relevant Deccan districts. We shall, therefore, not make separate estimates for sweet potatoes.

Nasik is seen to be the most important district for onions. The GIPE has prepared a report on a survey in 1955-56 of three villages in Nasik district belonging to Niphad taluka which was an important onion-growing region in the district. The report gives some information on average yield of onions, which could be used to estimate the outturn in the district. But there seems to be no point in doing this. It will be pointed out in chapter IX that data on prices of onions are extremely inadequate. The figures of area are taken from the SCRB. In fact, in general area under fruits and vegetables is obtained from SCRB, the figures for Kolhapur being appropriately adjusted.

Among the categories of non-foodcrops 'dyes and tanning materials' was of no consequence in Deccan districts. We take the figures of area under fodder crops from SCRBs, those for Kolhapur being adjusted in the manner already explained. The remaining three categories,

viz. fibres, oilseeds, and drugs and narcotics will be considered one by one.

Cotton was an overwhelmingly important fibre crop in most of the Deccan districts. According to SCRBs 1951-52 to 1958-59, cotton accounted for over 95 percent of the area under fibres in Dhulia and Jalgaon. For Nasik, Ahmednagar and Sangli the corresponding proportion was over 90 percent. For most part it was well over 80 percent in Poona and Kolhapur districts, and over 75 percent in Sholapur district. Only in Satara the proportion varied between 30 and 40 percent in four of the eight years being over 70 percent in most of the remaining four years. However, fibres constituted an unimportant category of crops in this district accounting for hardly 1 percent of the area under non-foodcrops.

The SCRB provide data on area and outturn of cotton for the whole period under review. Indian Central Cotton Committee (ICCC) also prepares estimates of outturn of cotton year by year for the different trade blocks. For the country as a whole the official outturn estimates have been observed to be lower than those of the ICCC. The NIC and the C.S.O. (in its publication, NIS) preferred the ICCC estimates on the ground that they were more accurate.

The ICCC does not give outturn figures by districts but by trade blocks, some of them consisting of more than one State. Thus the estimates for the years 1951-52 to 1955-56 relate to the trade block comprising Bombay (old), Saurashtra and Kutch, and those for the remaining three years to the trade block of the reorganised Bombay State. As the ICCC does not give estimates at the level of districts one obvious method of taking the ICCC data into account is to alter the SCRB outturn figures for Deccan districts in a year by the proportion by which the ICCC estimate for the relevant trade block diverged from the official estimate for that block. The method is, however, inappropriate in/case of Deccan districts. In both the trade blocks of relevance here Deccan was relatively less important from the point of view of cotton-growing. The appropriate area statistics indicate that during 1951-52 to 1955-56, Deccan districts as a whole accounted for between 13 and 19 percent of the area under cotton in the trade block, Bombay, Saurashtra and Kutch. In reorganised Bombay hardly 10 percent of the area under cotton was in Deccan districts. In view of this it does not seem proper to apply the proportion of divergence between official and ICCC estimates to SCRB estimates for Deccan districts -- for that matter, even to estimates for Jalgaon, the most important cotton-growing district

in Deccan. We take the figures of area and outturn of cotton from EMh/BCAS, adjustment being made for Dhulia as explained earlier.

One more adjustment remains to be made. EMh/BCAS show outturn of cotton (lint). It will be explained in Chapter IX that there is need to evaluate outturn not of cotton (lint) but of kapas (i.e. seed-cotton). It is thus necessary to derive from estimates relating to lint-cotton those for kapas. From the official sources in Maharashtra State it was gathered that in the different districts of Deccan the outturn of cotton (lint) obtained from every 100 units of outturn of kapas was as shown in the following table.

TABLE 5.5 : OUTTURN OF COTTON (LINT) OBTAINED FROM EVERY 100 UNITS OF OUTTURN OF KAPAS

Dhulia	Jal- gaon	Nasik	Ahmed- nagar	Poona	Shola- pur	Satara	Sangli	Kolha- pur
37.8	37.9	36.9	34.3	36.0	32.5	33.6	33.6	30.0

The data in the table are used to estimate the outturn of kapas in Deccan districts. The figures of area under 'other fibres' are taken from SCRB.

The two remaining categories of non-foodcrops are oilseeds and drugs and narcotics. SCRB gives area and outturn data for crops which together accounted for the bulk of the area under the respective categories in the different Deccan districts. These are groundnut, sesamum, rape, mustard, linseed and castor seed among oilseeds, and tobacco under the other category. We take from EMh/BCAS the area and outturn of groundnut, sesamum and tobacco. Data relating to rape, mustard, linseed and castor seed are drawn from SCRB as EMh/BCAS give combined figures for the first three and do not give any for the last. Area data on residuary crops and miscellaneous varieties are taken from the SCRB. As elaborated earlier, we make adjustments in the case of data for Dhulia and Kolhapur.

In the end it is necessary to estimate the outturn of the different byproducts. We have already explained in the preceding chapter that evaluation of rice husk and rice bran would involve double counting. As for straw we again depend upon N.S.S. Report No. 32. Here Deccan districts were included in Western India, the population zone made up of the old Bombay State, Saurashtra and Kutch. This publication gives data on ratio of outturn of straw to that of the crop only for jowar and bajri in West India. However, these were the relatively more important

cereals in most of the Deccan districts.

The N.S.S. gives ratios separately for the kharif and the rabi seasons for jowar. Then again, there are three ratios for the three rounds pertaining to each season. We find from the data on area and outturn in EMh/BCAS that jowar was mainly a kharif crop in Jalgaon, Sangli and Kolhapur districts, a rabi crop in Ahmednagar, Poona and Sholapur, and equally a kharif and a rabi one in Dhulia, Nasik and Satara. For the first three districts, we take an average of the three kharif ratios in West India which comes to 3.06. The ratio adopted for the second group of three districts is the average of rabi ratios which is 2.28. We take an average of all the six ratios to derive the ratio used for the last group of three districts. This average is 2.67. The average of the three ratios relating to bajri in West India comes to 2.69.

The N.S.S. does not give ratios relating respectively to paddy, wheat, maize and ragi in West India. In the case of paddy we adopt an average of the three ratios for Central India which is a contiguous zone, the average being 0.76. The ratios for wheat by population zones pertain to North India and North-West India, and those for maize, to North India, East India and North-West India.

It does not seem advisable to use data relating to any ^{the} of the population zones. An average of/three all-India ratios for each of the two crops is therefore adopted. The average for wheat is 1.16 and that for maize, 1.47. In respect of ragi we use an average of the three ratios given for South India, the average being 1.29.

We are left with cereals other than the principal ones already mentioned. In NIS the C.S.O. makes estimates separately for small millets and 'other cereals'. The area and outturn data in EMh/BCAS indicate that the composite category inclusive both of small millets and the residuary cereals was absolutely negligible in Jalgaon district. We make no estimates for this district. In Dhulia kodra seemed to be relatively more important than all the rest in the composite category. In Sangli the outturn of Italian millets formed a significant proportion of outturn of this category in most of the years. It is true that in the remaining districts cereals other than small millets in this category appear to have yielded a relatively larger aggregate of outturn every year than the small millets taken together. All the same area and outturn of 'other cereals' (inclusive of small millets) were not quite large in any of the Deccan districts. We shall, therefore, take an average of the three ratios relating to small millets in Central India. This is 0.71.

With regard to gram and 'other pulses' (exclusive of gram and tur) the same ratios as were derived earlier for Konkan districts will be adopted. The reasoning underlying the choice is similar to that elaborated in the preceding chapter. We also do not deflate the outturn of straw estimated to allow for non-collection and wastage. The reasons have already been set out earlier.

For want of any better source of information we fall back upon rates assumed for the whole country in NIS in the case of the following byproducts: (i) arhar sticks, (ii) sesamum sticks, (iii) cotton sticks and (iv) bagasse. The rates relating to (i), (ii) and (iv) have already been specified in the preceding chapter. The outturn of cotton sticks was estimated in the NIS as 10 maunds per acre. It has already been mentioned that data on sugarcane tufts and grass are in terms not of outturn but of value. These byproducts will, therefore, be considered later. We shall estimate the outturn of timber and firewood by employing the same method as was used for Konkan districts.

The only byproduct that remains is cotton seed. The NIC made an estimate assuming a ratio of 2:1 between seed and cotton (lint) on the basis of information supplied by DESAg. In the NIS we are told that the estimates are

based upon the Statewise data on the outturn of cotton seed published in ASI as part of periodic crop estimates for cotton lint reported therein. There is no need for us to turn to these sources of data. The two main products from kapas are lint-cotton and cotton seed. Earlier in this chapter a reference was made to data on ratios of conversion of kapas into lint-cotton for Deccan districts obtained informally from official sources in Maharashtra. Given the estimate of outturn of kapas and that relating to lint-cotton, the outturn of cotton seed is easily estimated for every Deccan district.

In tables 5.6 to 5.23 we give area and outturn of crops in the different districts of Deccan.

TABLE 5.6 : AREA UNDER CROPS IN DHULIA DISTRICT (FIGURES IN HUNDRED ACRES)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	553	562	614	610	656	651	645	629
Wheat	1005	862	923	1099	1192	1170	897	936
Jowar	4042	4323	4161	3968	4257	4422	4180	4510
Bajri	3328	4007	4207	3608	3613	3419	3404	3332
Maize	91	107	120	95	94	82	81	85
Ragi	11	44	32	31	174	156	181	190
Kodra	205	201	167	176	159	110	154	154
Other cereals	419	691	839	658	540	489	542	464
Total cereals	<u>9654</u>	<u>10797</u>	<u>11063</u>	<u>10245</u>	<u>10685</u>	<u>10499</u>	<u>10084</u>	<u>10300</u>
Gram	442	297	327	341	353	416	315	253
Tur	225	199	203	189	166	152	181	185
Mug	248	269	319	231	169	226	391	379
Udid	352	295	383	362	220	347	461	574
Horse gram	613	82	131	169	172	275	591	568
Other pulses	330	856	635	566	601	654	257	245
Total pulses	<u>2210</u>	<u>1998</u>	<u>1998</u>	<u>1858</u>	<u>1681</u>	<u>2070</u>	<u>2196</u>	<u>2204</u>
Total foodgrains	<u>11864</u>	<u>12795</u>	<u>13061</u>	<u>12103</u>	<u>12366</u>	<u>12569</u>	<u>12280</u>	<u>12504</u>
Sugarcane	31	24	21	26	31	41	49	38
Other sugars	-	2	3	3	2	1	1	1
Total sugars	<u>31</u>	<u>26</u>	<u>24</u>	<u>29</u>	<u>33</u>	<u>42</u>	<u>50</u>	<u>39</u>
Chillies	159	118	133	198	179	212	202	227
Other condiments and spices	16	9	4	5	11	7	7	14
Total condiments and spices	<u>175</u>	<u>127</u>	<u>137</u>	<u>203</u>	<u>190</u>	<u>219</u>	<u>209</u>	<u>241</u>
Potato	-	-	-	-	-	-	-	-
Other fruits and vegetables	68	57	66	58	64	84	64	56
Total fruits and vegetables	<u>68</u>	<u>57</u>	<u>66</u>	<u>58</u>	<u>64</u>	<u>84</u>	<u>64</u>	<u>56</u>
Miscellaneous foodcrops	43	2	4	-	-	1	52	-
Total foodcrops	<u>12181</u>	<u>13007</u>	<u>13292</u>	<u>12393</u>	<u>12653</u>	<u>12915</u>	<u>12655</u>	<u>12840</u>
Cotton	1292	1416	2325	2588	2792	2408	1835	1726
Other fibres	40	42	46	45	45	38	37	40
Total fibres	<u>1332</u>	<u>1458</u>	<u>2371</u>	<u>2633</u>	<u>2837</u>	<u>2446</u>	<u>1872</u>	<u>1766</u>
Groundnut	2665	2121	1239	2123	1773	2375	2981	3299
Sesamum	245	241	289	306	258	251	216	183
Rape	-	-	1	-	1	2	-	-
Mustard	73	1	1	3	3	3	1	-
Linseed	3	4	4	5	11	23	13	10
Castor seed	102	106	128	60	84	51	42	25
Other oilseeds	38	64	57	61	77	87	80	85
Total oilseeds	<u>3126</u>	<u>2537</u>	<u>1719</u>	<u>2558</u>	<u>2207</u>	<u>2792</u>	<u>3333</u>	<u>3602</u>
Tobacco	-	-	1	1	1	1	-	2
Other drugs and narcotics	24	19	35	27	41	41	18	5
Total drugs and narcotics	<u>24</u>	<u>19</u>	<u>36</u>	<u>28</u>	<u>42</u>	<u>42</u>	<u>18</u>	<u>7</u>
Fodder crops	26	93	69	52	60	68	73	63
Miscellaneous non-food-crops	-	11	-	3	1	1	10	8
Total non-foodcrops	<u>4508</u>	<u>4118</u>	<u>4195</u>	<u>5274</u>	<u>5147</u>	<u>5349</u>	<u>5306</u>	<u>5446</u>
Gross Cropped Area	16689	17125	17487	17667	17800	18264	17961	18286

TABLE 5.7 : OUTTURN OF CROPS IN DHULIA DISTRICT (FIGURES IN HUNDRED TONS)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	40	73	121	163	145	147	151	159
Wheat	68	84	190	206	253	200	146	230
Jowar	225	375	662	842	806	950	931	1108
Bajri	339	287	748	475	507	592	686	486
Maize	2	17	24	22	17	19	18	18
Ragi	1	9	9	10	48	42	45	51
Kodra	34	34	34	52	39	32	41	40
Other cereals	6	32	39	53	37	45	46	32
Total cereals	<u>715</u>	<u>911</u>	<u>1827</u>	<u>1823</u>	<u>1852</u>	<u>2027</u>	<u>2064</u>	<u>2124</u>
Gram	21	25	42	40	52	58	28	35
Tur	20	42	38	64	40	47	52	54
Mug	6	18	13	17	15	22	36	34
Udid	9	20	24	29	20	35	43	55
Horse gram	3	1	2	3	4	7	46	12
Other pulses	3	44	34	34	31	41	14	13
Total pulses	<u>62</u>	<u>150</u>	<u>153</u>	<u>187</u>	<u>162</u>	<u>210</u>	<u>219</u>	<u>203</u>
Total foodgrains	<u>777</u>	<u>1061</u>	<u>1980</u>	<u>2010</u>	<u>2014</u>	<u>2237</u>	<u>2283</u>	<u>2327</u>
Sugarcane (gul)	68	27	30	48	56	74	86	67
Chillies	22	24	33	28	3	39	38	83
Potato	-	-	-	-	-	-	-	-
Cotton (kapas)	71	60	260	175	171	281	240	195
Groundnut	398	169	366	452	501	706	943	975
Sesamum	7	18	22	42	33	33	26	22
Rape	-	-	-	-	-	-	-	-
Mustard	3	-	-	1	1	-	-	-
Linseed	-	-	-	1	1	2	1	1
Castor seed	3	8	11	8	10	6	5	4
Tobacco	-	-	-	-	-	-	-	-
Straw	1686	2087	4276	4099	4151	4729	4881	4903
Arhar sticks	133	280	253	427	267	313	347	360
Sesamum sticks (a)	1225	1205	1445	1530	1290	1255	1080	915
Cotton seed	44	37	162	109	106	175	149	121
Cotton sticks (a)	12920	14160	23250	25880	27920	24080	18350	17260
Bagasse	15	6	7	11	13	17	19	15
Timber (b)	8	5	5	5	1	1	1	1
Firewood (b)	606	390	386	371	72	64	64	68

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 5.8 : AREA UNDER CROPS IN JALGAON DISTRICT (FIGURES IN HUNDRED ACRES)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	250	135	137	148	133	130	147	132
Wheat	981	657	674	674	726	758	771	810
Jowar	4601	4122	4328	3688	3643	3902	4010	3988
Bajri	2199	2519	2823	2490	2243	2107	2026	2077
Maize	11	10	13	8	10	9	9	9
Ragi	2	1	-	3	4	3	4	3
Kodra	1	-	3	1	1	-	-	-
Other cereals	22	23	32	25	23	20	19	18
Total cereals	<u>8067</u>	<u>7467</u>	<u>8010</u>	<u>7037</u>	<u>6783</u>	<u>6929</u>	<u>6986</u>	<u>7037</u>
Gram	219	102	132	119	154	186	125	120
Tur	266	257	271	284	278	275	271	288
Mug	828	886	939	778	558	573	765	704
Udid	2847	2768	2713	2357	2270	2383	2593	2535
Horse gram	291	361	332	268	239	199	168	142
Other pulses	591	500	527	493	465	441	390	373
Total pulses	<u>5042</u>	<u>4874</u>	<u>4914</u>	<u>4299</u>	<u>3964</u>	<u>4057</u>	<u>4312</u>	<u>4162</u>
Total foodgrains	<u>13109</u>	<u>12341</u>	<u>12924</u>	<u>11336</u>	<u>10747</u>	<u>10986</u>	<u>11298</u>	<u>11199</u>
Sugarcane	13	11	8	11	13	24	31	30
Other sugars	-	-	-	-	-	1	-	1
Total sugars	<u>13</u>	<u>11</u>	<u>8</u>	<u>11</u>	<u>13</u>	<u>25</u>	<u>31</u>	<u>31</u>
Chillies	124	68	85	125	131	142	149	112
Other condiments and spices	222	81	98	110	175	236	146	113
Total condiments and spices	<u>346</u>	<u>149</u>	<u>183</u>	<u>235</u>	<u>306</u>	<u>378</u>	<u>295</u>	<u>225</u>
Banana	206	194	159	152	151	201	247	237
Potato	-	-	-	-	-	-	-	-
Other fruits and vegetables	114	94	91	91	96	85	88	90
Total fruits and vegetables	320	288	250	243	247	286	335	327
Miscellaneous foodcrops	1	-	-	12	1	15	-	-
Total foodcrops	<u>13789</u>	<u>12789</u>	<u>13365</u>	<u>11837</u>	<u>11314</u>	<u>11690</u>	<u>11959</u>	<u>11782</u>
Cotton	3359	4148	5374	6239	6621	5803	5234	5664
Other fibres	26	26	27	30	35	33	26	28
Total fibres	3385	4174	5401	6269	6656	5836	5260	5692
Groundnut	2622	2504	1430	2207	2475	3181	3421	3437
Sesamum	162	133	162	179	169	173	132	116
Rape	1	-	-	-	-	-	-	-
Mustard	1	-	1	1	1	1	1	1
Linseed	15	5	5	6	5	14	12	9
Castor	2	2	1	2	2	2	3	2
Other oilseeds	3	1	2	2	3	5	1	1
Total oilseeds	<u>2806</u>	<u>2645</u>	<u>1601</u>	<u>2397</u>	<u>2655</u>	<u>3376</u>	<u>3570</u>	<u>3566</u>
Tobacco	2	2	4	4	5	5	3	-
Other drugs and narcotics	4	2	2	2	3	3	3	5
Total drugs and narcotics	<u>6</u>	<u>4</u>	<u>6</u>	<u>6</u>	<u>8</u>	<u>8</u>	<u>6</u>	<u>5</u>
Fodder crops	49	63	44	37	60	42	57	75
Miscellaneous non-foodcrops	-	1	1	1	8	11	1	3
Total non-foodcrops	<u>6246</u>	<u>6887</u>	<u>7053</u>	<u>8710</u>	<u>9387</u>	<u>9273</u>	<u>8894</u>	<u>9341</u>
Gross Cropped Area	<u>20035</u>	<u>19676</u>	<u>20418</u>	<u>20547</u>	<u>20701</u>	<u>20963</u>	<u>20853</u>	<u>21123</u>

TABLE 5.9 : OUTTURN OF CROPS IN JALGAON DISTRICT (FIGURES IN HUNDRED TONS)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	21	16	64	63	54	42	46	33
Wheat	116	43	117	118	168	130	115	225
Jowar	1237	259	1328	1739	868	1517	1730	1251
Bajri	189	130	331	297	246	234	290	231
Maize	3	1	4	3	3	1	3	2
Ragi	-	-	-	1	1	1	1	1
Kodra	-	-	1	-	-	-	-	-
Other cereals	4	2	7	6	4	4	3	4
Total cereals	<u>1570</u>	<u>451</u>	<u>1852</u>	<u>2227</u>	<u>1344</u>	<u>1929</u>	<u>2188</u>	<u>1747</u>
Gram	15	5	16	14	19	28	15	18
Tur	74	29	85	83	86	81	87	80
Mug	103	64	157	122	82	88	128	94
Udid	387	201	430	363	299	410	434	334
Horse gram	49	26	46	39	35	26	26	20
Other pulses	53	25	82	75	66	60	60	52
Total pulses	<u>681</u>	<u>350</u>	<u>816</u>	<u>696</u>	<u>587</u>	<u>693</u>	<u>750</u>	<u>598</u>
Total foodgrains	<u>2251</u>	<u>801</u>	<u>2668</u>	<u>2923</u>	<u>1931</u>	<u>2622</u>	<u>2938</u>	<u>2345</u>
cane								
Sugar/(gul)	17	11	14	18	23	46	57	53
Chillies	28	9	14	23	19	27	30	33
Potato	-	-	-	-	-	-	-	-
Cotton (kapas)	355	227	677	692	349	745	788	667
Groundnut	486	273	413	614	908	861	952	723
Sesamum	14	7	22	23	21	23	17	13
Rape	-	-	-	-	-	-	-	-
Mustard	-	-	-	-	-	-	-	-
Linseed	1	-	1	1	1	1	1	1
Castor seed	-	-	-	-	-	-	-	-
Tobacco	-	-	-	-	-	1	-	-
Straw	4874	1431	5658	6740	3911	5888	6713	5104
Arhar sticks	494	193	567	554	574	540	580	534
Sesamum sticks (a)	810	665	810	895	845	865	660	580
Cotton seed	220	141	420	430	217	463	489	414
Cotton sticks (a)	33590	41480	53740	62390	66210	58030	52340	56640
Bagasse	4	2	3	4	5	10	13	12
Timber (b)	6	6	4	2	2	2	2	2
Firewood (b)	427	437	288	152	146	146	140	153

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 5.10 : AREA UNDER CROPS IN NASIK DISTRICT (FIGURES IN HUNDRED ACRES)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	774	716	733	792	761	819	921	921
Wheat	2139	1925	2211	2373	2575	2511	2323	2373
Jowar	1834	1595	1764	1530	1804	1710	1669	1979
Bajri	8133	8853	9302	8821	8495	8629	9010	8716
Maize	43	46	39	28	33	28	37	32
Ragi	796	1087	1103	1179	1194	1185	1308	1239
Kodra	104	-	-	-	-	-	-	-
Other cereals	1310	406	689	424	443	439	405	423
Total cereals	<u>15133</u>	<u>14628</u>	<u>15841</u>	<u>15147</u>	<u>15305</u>	<u>15321</u>	<u>15673</u>	<u>15683</u>
Gram	997	668	788	802	845	883	733	712
Tur	201	202	207	248	226	221	254	192
Mug	199	215	364	333	238	219	242	218
Udid	181	255	316	311	286	254	233	253
Horse gram	711	1176	1328	1256	1147	1254	1147	1123
Other pulses	492	242	316	326	292	287	270	251
Total pulses	<u>2781</u>	<u>2758</u>	<u>3319</u>	<u>3276</u>	<u>3034</u>	<u>3118</u>	<u>2879</u>	<u>2749</u>
Total foodgrains	<u>17914</u>	<u>17386</u>	<u>19160</u>	<u>18423</u>	<u>18339</u>	<u>18439</u>	<u>18552</u>	<u>18432</u>
Sugarcane	195	164	130	160	184	197	237	231
Other sugarcane	-	-	-	-	-	-	-	-
Total sugarcane	<u>195</u>	<u>164</u>	<u>130</u>	<u>160</u>	<u>184</u>	<u>197</u>	<u>237</u>	<u>231</u>
Chillies	67	50	62	81	81	8	74	80
Other condiments and spices	13	13	18	14	15	88	12	14
Total condiments and spices	<u>80</u>	<u>63</u>	<u>80</u>	<u>95</u>	<u>96</u>	<u>96</u>	<u>86</u>	<u>94</u>
Potato	14	13	12	14	18	22	17	17
Onion	119	120	138	138	172	160	205	212
Other fruits and vegetables	127	114	117	125	144	169	159	178
Total fruits and vegetables	<u>260</u>	<u>247</u>	<u>267</u>	<u>277</u>	<u>334</u>	<u>351</u>	<u>381</u>	<u>407</u>
Miscellaneous foodcrops	9	-	-	13	31	17	2	5
Total foodcrops	<u>18458</u>	<u>17860</u>	<u>19637</u>	<u>18968</u>	<u>18984</u>	<u>19100</u>	<u>19258</u>	<u>19169</u>
Cotton	133	129	257	312	484	449	108	107
Other fibres	24	23	24	18	24	28	26	28
Total fibres	<u>157</u>	<u>152</u>	<u>281</u>	<u>330</u>	<u>508</u>	<u>477</u>	<u>134</u>	<u>135</u>
Groundnut	1761	1444	1025	1890	1747	1867	1872	2084
Sesamum	88	39	44	52	58	47	30	29
Rape	3	17	20	-	-	-	-	-
Mustard	14	10	11	17	7	16	15	11
Linseed	10	7	7	8	9	12	11	17
Castor seed	4	3	2	1	2	3	1	1
Other oilseeds	359	381	630	695	764	817	729	780
Total oilseeds	<u>2239</u>	<u>1901</u>	<u>1739</u>	<u>2663</u>	<u>2587</u>	<u>2762</u>	<u>2658</u>	<u>2922</u>
Tobacco	1	1	1	1	1	4	3	1
Other drugs and narcotics	5	4	4	5	4	5	6	4
Total drugs and narcotics	<u>6</u>	<u>5</u>	<u>5</u>	<u>6</u>	<u>5</u>	<u>9</u>	<u>9</u>	<u>5</u>
Fodder crops	2106	2213	2157	1921	1969	1895	1999	1873
Miscellaneous non-food-crops	364	5	55	-	6	14	-	-
Total non-foodcrops	<u>4872</u>	<u>4276</u>	<u>4237</u>	<u>4920</u>	<u>5075</u>	<u>5157</u>	<u>4800</u>	<u>4935</u>
Gross Cropped Area	<u>23330</u>	<u>22136</u>	<u>23874</u>	<u>23888</u>	<u>24059</u>	<u>24257</u>	<u>24058</u>	<u>24104</u>

TABLE 5.11 : OUTTURN OF CROPS IN NASIK DISTRICT (FIGURES IN HUNDRED TONS)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	337	288	345	421	366	478	349	556
Wheat	316	175	356	453	392	217	314	441
Jowar	277	29	164	155	153	168	247	318
Bajri	589	536	1244	1003	860	1002	1132	1038
Maize	12	10	11	9	9	9	10	9
Ragi	290	396	462	516	523	518	491	504
Kodra	21	-	-	-	-	-	-	-
Other cereals	196	52	111	76	73	73	122	69
Total cereals	<u>2038</u>	<u>1486</u>	<u>2693</u>	<u>2633</u>	<u>2376</u>	<u>2465</u>	<u>2665</u>	<u>2935</u>
Gram	98	48	87	96	124	123	75	103
Tur	57	43	61	77	63	65	69	56
Mug	27	25	57	55	36	34	21	30
Udid	24	30	47	50	44	37	32	32
Horse gram	83	114	197	204	165	186	160	164
Other pulses	67	27	43	52	51	44	47	35
Total pulses	<u>356</u>	<u>287</u>	<u>492</u>	<u>534</u>	<u>483</u>	<u>489</u>	<u>404</u>	<u>420</u>
Total foodgrains	<u>2394</u>	<u>1773</u>	<u>3185</u>	<u>3167</u>	<u>2859</u>	<u>2954</u>	<u>3069</u>	<u>3355</u>
Sugarcane (gul)	521	342	340	440	493	561	635	619
Chillies	18	8	12	18	13	16	14	30
Potato	32	9	6	29	38	44	33	36
Cotton (kapas)	10	7	33	35	26	58	22	19
Groundnut	225	154	423	486	438	398	408	430
Sesamum	9	4	5	7	7	6	4	3
Rape	1	1	4	-	-	-	-	-
Mustard	3	1	2	3	1	3	3	2
Linseed	1	1	1	1	1	1	1	2
Castor seed	-	-	-	-	-	-	-	-
Tobacco	-	-	-	-	-	-	-	-
Straw	3713	2680	5461	5021	4502	4803	5311	5554
Arhar sticks	380	287	407	514	420	434	460	374
Sesamum sticks (a)	440	195	220	260	290	235	150	145
Cotton seed	6	4	21	22	16	37	14	12
Cotton sticks (a)	1330	1290	2570	3120	4840	4490	1080	1070
Bagasse	117	77	76	99	111	126	143	139
Timber (b)	80	40	8	8	8	8	8	4
Firewood (b)	5620	2820	560	567	577	577	570	297

(a) In hundred maunds

(b) In thousand cubic feet.

TABLE 5.12 : AREA UNDER CROPS IN AHMEDNAGAR DISTRICT (FIGURES IN HUNDRED ACRES)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	201	184	201	229	203	223	208	234
Wheat	1144	821	936	1184	1592	1442	1185	1174
Jowar	12527	14281	13649	12771	14691	13134	13961	13994
Bajri	8580	6994	8831	8644	6741	7902	7533	7591
Maize	21	17	21	15	13	15	18	12
Ragi	8	180	202	225	217	198	210	203
Kodra	1	-	4	3	3	1	-	-
Other cereals	342	304	269	226	179	170	156	152
Total cereals	<u>22824</u>	<u>22781</u>	<u>24113</u>	<u>23297</u>	<u>23639</u>	<u>23085</u>	<u>23271</u>	<u>23360</u>
Gram	867	552	712	764	785	876	686	677
Tur	440	270	394	407	327	435	452	428
Mug	554	498	914	1113	446	566	605	439
Udid	77	66	67	79	54	55	55	55
Horse gram	1635	387	593	814	537	1158	1059	897
Other pulses	486	864	1106	932	754	433	422	426
Total pulses	<u>4059</u>	<u>2637</u>	<u>3786</u>	<u>4109</u>	<u>2903</u>	<u>3523</u>	<u>3279</u>	<u>2922</u>
Total foodgrains	<u>26883</u>	<u>25418</u>	<u>27899</u>	<u>27406</u>	<u>26542</u>	<u>26608</u>	<u>26550</u>	<u>26282</u>
Sugarcane	533	525	500	535	564	664	709	732
Other sugars	-	-	-	-	-	-	-	-
Total sugars	<u>533</u>	<u>525</u>	<u>500</u>	<u>535</u>	<u>564</u>	<u>664</u>	<u>709</u>	<u>732</u>
Chillies	68	66	56	71	81	84	79	74
Other condiments and spices	15	4	6	3	4	5	5	6
Total condiments and spices	<u>83</u>	<u>70</u>	<u>62</u>	<u>74</u>	<u>85</u>	<u>89</u>	<u>84</u>	<u>80</u>
Potato	13	12	10	18	17	35	31	28
Other fruits and vegetables	172	172	165	158	163	164	167	157
Total fruits and vegetables	<u>185</u>	<u>184</u>	<u>175</u>	<u>176</u>	<u>180</u>	<u>199</u>	<u>198</u>	<u>185</u>
Miscellaneous foodcrops	254	15	-	3	24	-	-	-
Total foodcrops	<u>27938</u>	<u>26212</u>	<u>28636</u>	<u>28194</u>	<u>27395</u>	<u>27560</u>	<u>27541</u>	<u>27279</u>
Cotton	1167	629	991	1234	1491	1248	949	776
Other fibres	40	71	49	65	51	55	50	58
Total fibres	<u>1207</u>	<u>700</u>	<u>1040</u>	<u>1299</u>	<u>1542</u>	<u>1303</u>	<u>999</u>	<u>834</u>
Groundnut	424	537	409	761	765	967	1022	926
Sesamum	171	97	133	132	92	98	74	109
Rape	13	-	-	-	225	-	4	3
Mustard	4	-	-	-	-	-	-	-
Linseed	83	60	48	45	50	64	72	51
Castor seed	1	1	-	1	-	1	1	1
Other oilseeds	1361	1505	1339	1309	1331	1386	1431	1423
Total oilseeds	<u>2057</u>	<u>2200</u>	<u>1929</u>	<u>2248</u>	<u>2463</u>	<u>2516</u>	<u>2604</u>	<u>2513</u>
Tobacco	8	15	22	30	17	22	16	24
Other drugs and narcotics	7	3	2	2	2	2	3	5
Total drugs and narcotics	<u>15</u>	<u>18</u>	<u>24</u>	<u>32</u>	<u>19</u>	<u>24</u>	<u>19</u>	<u>29</u>
Fodder crops	<u>1166</u>	<u>1154</u>	<u>1325</u>	<u>1328</u>	<u>1395</u>	<u>1449</u>	<u>1431</u>	<u>1477</u>
Miscellaneous non-food-crops	304	2	-	50	97	104	5	1
Total non-foodcrops	<u>4749</u>	<u>4074</u>	<u>4318</u>	<u>4957</u>	<u>5516</u>	<u>5396</u>	<u>5058</u>	<u>4854</u>
Gross Cropped Area	<u>32687</u>	<u>30286</u>	<u>32954</u>	<u>33151</u>	<u>32911</u>	<u>32956</u>	<u>32599</u>	<u>32133</u>

TABLE 5.13 : OUTTURN OF CROPS IN AHMEDNAGAR DISTRICT (FIGURES IN HUNDRED TONS)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	82	69	45	58	96	126	78	136
Wheat	169	58	114	185	257	120	210	220
Jowar	1585	440	1263	1763	1885	1704	2684	2461
Bajri	791	248	717	830	660	628	863	728
Maize	5	5	7	4	4	5	7	4
Ragi	2	30	35	71	5	47	45	46
Kodra	-	-	1	1	1	-	-	-
Other cereals	59	55	50	43	35	37	29	31
Total cereals	<u>2693</u>	<u>905</u>	<u>2232</u>	<u>2955</u>	<u>2943</u>	<u>2667</u>	<u>3916</u>	<u>3626</u>
Gram	116	40	93	105	117	119	89	94
Tur	95	34	76	108	70	97	105	99
Mug	72	24	83	123	40	59	62	44
Udid	9	5	7	11	7	5	7	7
Horse gram	61	12	26	44	21	57	53	45
Other pulses	23	49	89	73	13	18	17	19
Total pulses	<u>376</u>	<u>164</u>	<u>374</u>	<u>464</u>	<u>268</u>	<u>355</u>	<u>333</u>	<u>308</u>
Total foodgrains	<u>3069</u>	<u>1069</u>	<u>2606</u>	<u>3419</u>	<u>3211</u>	<u>3022</u>	<u>4249</u>	<u>3934</u>
Sugarcane (gul)	1783	1593	1787	2122	2186	2659	3004	3106
Chillies	22	23	22	30	31	39	39	38
Potato	4	29	22	30	34	87	63	41
Cotton (kapas)	122	16	182	97	77	63	126	106
Groundnut	71	59	120	192	212	216	219	216
Sesamum	15	6	10	14	8	10	7	11
Rape	1	-	-	-	20	-	-	-
Mustard	-	-	-	-	-	-	-	-
Linseed	7	3	4	4	4	6	7	4
Castor seed	-	-	-	-	-	-	-	-
Tobacco	1	3	4	7	3	4	4	6
Straw	6261	1969	5284	6902	6634	6096	9002	8170
Arhar sticks	634	227	507	720	467	647	700	660
Sesamum sticks (a)	855	485	665	660	460	490	370	545
Cotton seed	80	11	120	64	51	41	83	70
Cotton sticks (a)	11670	6290	9910	12340	14910	12480	9490	7760
Bagasse	401	358	402	477	492	598	676	699
Timber (b)	17	7	5	9	4	4	4	4
Firewood (b)	1594	657	467	785	356	335	325	318

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 5.14 : AREA UNDER CROPS IN POONA DISTRICT (FIGURES IN HUNDRED ACRES)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	1059	1126	1170	1163	1169	1187	1224	1233
Wheat	429	390	398	479	543	562	561	566
Jowar	9040	10224	9590	8640	11465	9677	9655	9859
Bajri	5011	4534	5504	6202	3551	5399	4793	4890
Maize	21	19	19	16	21	15	16	19
Ragi	552	578	511	551	354	418	385	347
Kodra	6	-	-	1	-	-	-	-
Other cereals	280	293	565	359	302	290	266	279
Total cereals	<u>16398</u>	<u>17164</u>	<u>17757</u>	<u>17411</u>	<u>17405</u>	<u>17548</u>	<u>16900</u>	<u>17193</u>
Gram	615	538	461	606	640	725	714	702
Tur	247	153	209	228	168	208	191	195
Mug	70	87	111	202	59	110	107	93
Udid	122	114	148	158	109	129	134	145
Horse gram	678	448	596	652	471	554	527	418
Other pulses	534	383	465	510	349	463	499	508
Total pulses	<u>2266</u>	<u>1723</u>	<u>1990</u>	<u>2356</u>	<u>1796</u>	<u>2189</u>	<u>2172</u>	<u>2061</u>
Total foodgrains	<u>18664</u>	<u>18887</u>	<u>19747</u>	<u>19767</u>	<u>19201</u>	<u>19737</u>	<u>19072</u>	<u>19254</u>
Sugarcane	208	201	195	202	198	210	256	269
Other sugars	-	-	-	-	-	-	-	-
Total sugars	<u>208</u>	<u>201</u>	<u>195</u>	<u>202</u>	<u>198</u>	<u>210</u>	<u>256</u>	<u>269</u>
Chillies	61	60	60	74	68	82	86	80
Other condiments and spices	19	17	25	25	22	26	40	58
Total condiments and spices	<u>80</u>	<u>77</u>	<u>85</u>	<u>99</u>	<u>90</u>	<u>108</u>	<u>126</u>	<u>138</u>
Potato	94	66	61	90	98	115	126	129
Other fruits and vegetables	238	241	222	226	266	269	276	300
Total fruits and vegetables	<u>332</u>	<u>307</u>	<u>283</u>	<u>316</u>	<u>364</u>	<u>384</u>	<u>402</u>	<u>429</u>
Miscellaneous foodcrops	-	-	-	-	10	15	129	-
Total foodcrops	<u>19284</u>	<u>19472</u>	<u>20310</u>	<u>20384</u>	<u>19863</u>	<u>20454</u>	<u>19985</u>	<u>20090</u>
Cotton	37	33	27	57	112	137	111	114
Other fibres	6	7	10	15	20	21	14	24
Total fibres	<u>43</u>	<u>40</u>	<u>37</u>	<u>72</u>	<u>132</u>	<u>158</u>	<u>125</u>	<u>138</u>
Groundnut	353	422	366	482	324	443	532	549
Sesamum	53	41	40	46	89	57	51	48
Rape	-	-	23	-	5	7	2	6
Mustard	-	-	7	-	-	-	-	-
Linseed	3	2	4	2	3	2	2	2
Castor seed	5	-	-	-	-	-	-	-
Other oilseeds	870	923	825	831	1021	925	878	733
Total oilseeds	<u>1284</u>	<u>1388</u>	<u>1265</u>	<u>1361</u>	<u>1442</u>	<u>1434</u>	<u>1465</u>	<u>1338</u>
Tobacco	3	4	6	6	5	6	5	4
Other drugs and narcotics	5	7	7	8	8	7	6	5
Total drugs and narcotics	<u>8</u>	<u>11</u>	<u>13</u>	<u>14</u>	<u>13</u>	<u>13</u>	<u>11</u>	<u>9</u>
Fodder crops	4788	5447	5418	4890	4568	4680	4554	4576
Miscellaneous non-food-crops	-	8	2	4	2	16	26	2
Total non-foodcrops	<u>6123</u>	<u>6894</u>	<u>6735</u>	<u>6341</u>	<u>6157</u>	<u>6301</u>	<u>6181</u>	<u>6063</u>
Gross Grouped Area	<u>25407</u>	<u>26366</u>	<u>27045</u>	<u>26725</u>	<u>26020</u>	<u>26755</u>	<u>26166</u>	<u>26153</u>

TABLE 5.15 : OUTTURN OF CROPS IN POONA DISTRICT (FIGURES IN HUNDRED TONS)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	615	573	697	580	783	757	555	730
Wheat	64	39	57	84	69	61	87	114
Jowar	1004	377	472	873	1212	1550	1477	1555
Bajri	525	331	686	809	551	509	637	607
Maize	3	3	3	2	2	2	2	3
Ragi	129	135	120	111	45	104	87	78
Kodra	2	-	-	-	-	-	-	-
Other cereals	90	87	176	123	71	96	87	99
Total cereals	<u>2432</u>	<u>1545</u>	<u>2211</u>	<u>2582</u>	<u>2733</u>	<u>3079</u>	<u>2932</u>	<u>3186</u>
Gram	82	59	56	64	85	77	86	98
Tur	45	28	40	42	30	38	43	47
Mug	6	4	6	9	2	5	5	10
Udid	11	9	12	12	9	11	11	12
Horse gram	79	51	57	49	33	64	70	41
Other pulses	41	27	32	34	21	36	37	39
Total pulses	<u>264</u>	<u>178</u>	<u>203</u>	<u>210</u>	<u>180</u>	<u>231</u>	<u>252</u>	<u>247</u>
Total foodgrains	<u>2696</u>	<u>1723</u>	<u>2414</u>	<u>2792</u>	<u>2913</u>	<u>3310</u>	<u>3184</u>	<u>3433</u>
Sugarcane (gul)	618	522	578	649	565	703	856	916
Chillies	8	10	9	10	17	17	18	20
Potato	76	82	31	33	229	266	271	184
Cotton (kapas)	8	9	1	12	15	13	23	25
Groundnut	88	47	117	206	86	110	166	144
Sesamum	5	4	4	3	5	6	6	5
Rape	-	-	2	-	-	1	-	1
Mustard	-	-	1	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-
Castor seed	-	-	-	-	-	-	-	-
Tobacco	1	1	1	1	1	1	1	1
Straw	4639	2582	3921	5062	5145	5897	6938	6190
Arhar sticks	300	187	267	280	200	253	287	313
Sesamum sticks (a)	265	205	200	230	445	285	255	240
Cotton seed	5	6	1	8	10	8	15	16
Cotton sticks (a)	370	330	270	570	1120	1370	1110	1140
Bagasse	139	117	130	146	127	158	193	206
Timber (b)	6	5	5	19	5	5	5	5
Firewood (b)	369	324	303	1251	323	316	340	375

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 5.16 : AREA UNDER CROPS IN SHOLAPUR DISTRICT (FIGURES IN HUNDRED ACRES)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	259	162	218	205	179	203	219	212
Wheat	546	441	479	477	526	553	582	607
Jowar	18189	19116	18514	17957	17985	17651	18182	19254
Bajri	2492	1933	2673	2844	2650	2479	2388	2129
Maize	112	113	122	121	93	84	97	106
Ragi	-	1	4	4	3	2	2	3
Kodra	-	-	-	2	2	3	2	3
Other cereals	164	58	91	65	56	54	80	57
Total cereals	<u>21762</u>	<u>21824</u>	<u>22101</u>	<u>21675</u>	<u>21494</u>	<u>21029</u>	<u>21552</u>	<u>22371</u>
Gram	859	491	532	597	597	628	624	650
Tur	808	768	1015	1021	920	971	867	803
Mug	75	75	199	240	150	154	150	168
Udid	11	8	23	16	14	13	13	24
Horse gram	6	98	133	146	146	151	140	148
Other pulses	456	512	834	899	819	891	846	678
Total pulses	<u>2215</u>	<u>1952</u>	<u>2736</u>	<u>2919</u>	<u>2646</u>	<u>2808</u>	<u>2640</u>	<u>2471</u>
Total foodgrains	<u>23977</u>	<u>23776</u>	<u>24837</u>	<u>24594</u>	<u>24140</u>	<u>23837</u>	<u>24192</u>	<u>24842</u>
Sugarcane	182	182	165	176	186	194	212	228
Other sugars	-	-	-	-	-	-	-	-
Total sugars	182	182	165	176	186	194	212	228
Chillies	167	162	143	147	163	163	158	161
Other condiments and spices	12	24	19	24	15	14	13	16
Total condiments and spices	<u>179</u>	<u>186</u>	<u>162</u>	<u>171</u>	<u>178</u>	<u>177</u>	<u>171</u>	<u>177</u>
Potato	-	-	-	-	-	-	1	-
Other fruits and vegetables	141	93	96	91	101	90	98	111
Total fruits and vegetables	141	93	96	91	101	90	99	111
Miscellaneous foodcrops	675	1	-	-	-	-	-	-
Total foodcrops	<u>25154</u>	<u>24238</u>	<u>25260</u>	<u>25032</u>	<u>24605</u>	<u>24298</u>	<u>24674</u>	<u>25358</u>
Cotton	344	176	169	299	441	416	374	295
Other fibres	95	79	101	94	92	79	76	93
Total fibres	<u>439</u>	<u>255</u>	<u>270</u>	<u>393</u>	<u>533</u>	<u>495</u>	<u>450</u>	<u>388</u>
Groundnut	1369	1808	1701	2112	2109	2322	2190	1882
Sesamum	85	70	112	104	82	90	97	114
Rape	-	-	-	70	86	82	84	101
Mustard	-	75	75	-	-	-	-	-
Linseed	45	56	48	76	75	62	65	66
Castor seed	8	6	5	5	5	4	6	4
Other oilseeds	751	1183	1092	1047	1133	1083	1073	1282
Total oilseeds	<u>2258</u>	<u>3198</u>	<u>3033</u>	<u>3414</u>	<u>3490</u>	<u>3643</u>	<u>3515</u>	<u>3449</u>
Tobacco	15	17	22	23	16	16	13	16
Other drugs and narcotics	4	6	6	5	6	7	7	7
Total drugs and narcotics	<u>19</u>	<u>23</u>	<u>28</u>	<u>28</u>	<u>22</u>	<u>23</u>	<u>20</u>	<u>23</u>
Fodder crops	386	1062	839	900	976	1067	998	762
Miscellaneous non-foodcrops	-	30	28	28	23	4	27	-
Total non-foodcrops	<u>3102</u>	<u>4568</u>	<u>4198</u>	<u>4763</u>	<u>5044</u>	<u>5232</u>	<u>5010</u>	<u>4622</u>
Gross Cropped Area	<u>28256</u>	<u>28806</u>	<u>29458</u>	<u>29795</u>	<u>29649</u>	<u>29530</u>	<u>29684</u>	<u>29980</u>

TABLE 5.17 : OUTTURN OF CROPS IN SHOLAPUR DISTRICT (FIGURES IN HUNDRED TONS)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	85	45	34	60	57	55	51	96
Wheat	70	83	93	130	85	93	125	132
Jowar	1150	923	2038	3632	2011	1763	3248	3463
Bajri	83	18	104	104	80	51	76	98
Maize	10	20	23	24	19	24	29	22
Ragi	-	-	1	1	1	-	1	1
Kodra	-	-	-	-	-	1	1	1
Other cereals	19	6	16	10	9	9	9	8
Total cereals	<u>1417</u>	<u>1095</u>	<u>2309</u>	<u>3961</u>	<u>2262</u>	<u>1996</u>	<u>3540</u>	<u>3821</u>
Gram	74	34	62	101	83	54	78	78
Tur	119	110	161	185	155	208	244	172
Mug	6	5	14	17	9	13	12	14
Udid	1	4	1	1	1	1	1	2
Horse gram	-	5	7	11	9	25	11	12
Other pulses	28	27	67	73	66	72	69	47
Total pulses	<u>228</u>	<u>185</u>	<u>312</u>	<u>388</u>	<u>323</u>	<u>373</u>	<u>415</u>	<u>325</u>
Total foodgrains	<u>1645</u>	<u>1280</u>	<u>2621</u>	<u>4349</u>	<u>2585</u>	<u>2369</u>	<u>3955</u>	<u>4146</u>
Sugarcane (gul)	474	684	380	392	474	719	786	671
Chillies	45	22	31	52	37	26	22	37
Potato	-	-	-	-	-	-	-	-
Cotton (kapas)	92	23	50	41	43	32	58	73
Groundnut	332	247	382	718	452	428	410	517
Sesamum	4	2	6	5	4	8	9	10
Rape	-	-	-	6	9	11	11	13
Mustard	-	7	5	-	-	-	-	-
Linseed	3	2	2	3	3	8	9	5
Castor seed	-	1	-	1	-	-	1	1
Tobacco	3	4	5	5	4	4	3	3
Straw	3103	2372	5219	8954	5103	4470	7971	8540
Arhar sticks	794	734	1074	1234	1034	1387	1627	1147
Sesamum sticks (a)	425	350	560	520	410	450	485	570
Cotton seed	62	16	34	28	29	22	39	49
Cotton sticks (a)	3440	1760	1690	2990	4410	4160	3740	2950
Bagasse	107	154	85	88	107	162	177	151
Timber (b)	12	6	6	5	5	5	5	5
Firewood (b)	655	329	335	285	297	291	294	306

(a) In hundred maunds

(b) In thousand cubic feet.

TABLE 5.18 : AREA UNDER CROPS IN SATARA DISTRICT (FIGURES IN HUNDRED ACRES)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	517	525	517	553	538	574	585	582
Wheat	226	210	254	261	315	332	338	334
Jowar	4589	5163	4982	4668	5002	4975	4855	4980
Bajri	3945	3571	3937	4181	3954	4028	4067	3997
Maize	50	49	41	42	42	40	38	40
Ragi	335	353	325	372	342	352	351	330
Kodra	1	18	19	17	14	16	14	16
Other cereals	249	257	262	274	232	208	221	228
Total cereals	<u>9912</u>	<u>10146</u>	<u>10337</u>	<u>10368</u>	<u>10439</u>	<u>10525</u>	<u>10469</u>	<u>10507</u>
Gram	378	340	377	350	421	441	447	404
Tur	190	178	194	207	202	205	206	201
Mug	88	91	85	102	99	103	96	102
Udid	258	285	251	290	281	269	272	266
Horse gram	172	112	173	168	147	141	202	94
Other pulses	647	630	643	655	652	693	653	766
Total pulses	<u>1733</u>	<u>1636</u>	<u>1723</u>	<u>1772</u>	<u>1802</u>	<u>1852</u>	<u>1876</u>	<u>1833</u>
Total foodgrains	<u>11645</u>	<u>11782</u>	<u>12060</u>	<u>12140</u>	<u>12241</u>	<u>12377</u>	<u>12345</u>	<u>12340</u>
Sugarcane	125	119	111	129	129	140	153	173
Other sugars	-	-	-	-	-	-	-	-
Total sugars	<u>125</u>	<u>119</u>	<u>111</u>	<u>129</u>	<u>129</u>	<u>140</u>	<u>153</u>	<u>173</u>
Chillies	61	56	52	57	56	61	57	55
Other condiments and spices	116	128	95	104	107	121	111	108
Total condiments and spices	<u>177</u>	<u>184</u>	<u>147</u>	<u>161</u>	<u>163</u>	<u>182</u>	<u>168</u>	<u>163</u>
Potato	46	43	49	70	75	122	131	101
Other fruits and vegetables	116	106	118	120	106	101	96	100
Total fruits and vegetables	<u>162</u>	<u>149</u>	<u>167</u>	<u>190</u>	<u>181</u>	<u>223</u>	<u>227</u>	<u>201</u>
Miscellaneous food-crops	2	-	15	2	1	-	1	2
Total foodcrops	<u>12111</u>	<u>12234</u>	<u>12500</u>	<u>12622</u>	<u>12715</u>	<u>12922</u>	<u>12894</u>	<u>12879</u>
Cotton	6	7	6	10	25	38	47	45
Other fibres	14	11	9	16	19	14	17	16
Total fibres	<u>20</u>	<u>18</u>	<u>15</u>	<u>26</u>	<u>44</u>	<u>52</u>	<u>64</u>	<u>61</u>
Groundnut	1330	1363	1317	1413	1429	1424	1479	1472
Sesamum	1	1	1	1	2	2	1	1
Rape	-	-	-	-	-	-	2	-
Mustard	-	-	-	-	-	-	-	-
Linseed	3	10	9	9	9	8	8	8
Castor seed	-	-	1	-	-	-	-	-
Other oilseeds	247	267	259	241	252	238	210	203
Total oilseeds	<u>1581</u>	<u>1641</u>	<u>1587</u>	<u>1664</u>	<u>1692</u>	<u>1672</u>	<u>1700</u>	<u>1684</u>
Tobacco	18	24	28	24	19	26	21	17
Other drugs and narcotics	3	4	3	4	3	4	4	4
Total drugs and narcotics	<u>21</u>	<u>28</u>	<u>31</u>	<u>28</u>	<u>22</u>	<u>30</u>	<u>25</u>	<u>21</u>
Fodder crops	3624	3495	4061	3821	3608	3411	3528	3613
Miscellaneous non-foodcrops	-	2	-	-	-	-	2	4
Total non-foodcrops	<u>5246</u>	<u>5184</u>	<u>5694</u>	<u>5539</u>	<u>5366</u>	<u>5165</u>	<u>5319</u>	<u>5383</u>
Gross Cropped Area	<u>17357</u>	<u>17418</u>	<u>18194</u>	<u>18161</u>	<u>18087</u>	<u>18087</u>	<u>18213</u>	<u>18262</u>

TABLE 5.19 : OUTTURN OF CROPS IN SATARA DISTRICT (FIGURES IN HUNDRED TONS)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	220	189	208	277	382	268	283	297
Wheat	45	50	59	89	78	95	85	78
Jowar	753	657	904	1223	1045	953	1118	1158
Bajri	437	308	345	509	389	414	413	552
Maize	10	10	10	7	9	9	8	8
Ragi	79	95	76	88	85	88	86	85
Kodra	-	4	4	3	3	4	4	4
Other cereals	24	54	22	20	20	25	18	20
Total cereals	<u>1568</u>	<u>1367</u>	<u>1628</u>	<u>2216</u>	<u>2011</u>	<u>1856</u>	<u>2015</u>	<u>2202</u>
Gram	32	37	68	44	64	79	61	54
Tur	47	45	50	54	52	54	55	54
Mug	9	10	9	10	11	10	10	11
Udid	27	30	27	33	32	31	34	30
Horse gram	19	8	15	16	14	14	18	9
Other pulses	90	76	79	82	88	85	87	77
Total pulses	<u>224</u>	<u>206</u>	<u>248</u>	<u>239</u>	<u>261</u>	<u>273</u>	<u>265</u>	<u>235</u>
Total foodgrains	<u>1792</u>	<u>1573</u>	<u>1876</u>	<u>2455</u>	<u>2272</u>	<u>2129</u>	<u>2280</u>	<u>2437</u>
Sugarcane (gul)	326	309	288	335	353	355	388	448
Chillies	16	11	14	12	11	12	10	14
Potato	59	59	53	78	75	127	130	185
Cotton (kapas)	1	3	3	4	5	6	2	10
Groundnut	487	515	655	459	434	568	568	482
Sesamum	-	-	-	-	-	-	-	-
Rape	-	-	-	-	-	-	-	-
Mustard	-	-	-	-	-	-	-	-
Linseed	-	1	1	1	1	1	1	1
Castor seed	-	-	-	-	-	-	-	-
Tobacco	4	8	8	8	5	9	7	7
Straw	3667	3081	3845	5223	4508	4283	4702	5165
Arhar sticks	313	300	333	360	347	360	367	360
Sesamum sticks (a)	5	5	5	5	10	10	5	5
Cotton seed	1	2	2	3	3	4	1	7
Cotton sticks (a)	60	70	60	100	250	380	470	450
Bagasse	73	70	65	75	79	80	87	101
Timber (b)	1	1	1	1	1	1	1	1
Firewood (b)	104	92	92	80	76	84	80	68

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 5.20 : AREA UNDER CROPS IN SANGLI DISTRICT (FIGURES IN HUNDRED ACRES)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	268	269	280	286	279	269	274	279
Wheat	298	265	292	324	319	327	346	331
Jowar	5642	5847	6165	6179	6189	6070	6070	6353
Bajri	3428	3345	3392	3293	3380	3572	3422	3406
Maize	58	62	64	66	56	61	53	56
Ragi	57	78	74	81	44	37	67	38
Kodra	-	-	-	-	-	-	-	-
Other cereals	86	31	86	70	94	96	56	87
Total cereals	<u>9837</u>	<u>9897</u>	<u>10353</u>	<u>10299</u>	<u>10361</u>	<u>10432</u>	<u>10288</u>	<u>10550</u>
Gram	532	484	485	487	455	456	442	360
Tur	384	390	405	430	412	415	437	417
Mug	51	50	49	41	36	30	27	30
Udid	156	151	146	153	151	143	146	138
Horse gram	158	142	223	306	292	290	310	289
Other pulses	688	545	686	618	628	636	637	629
Total pulses	<u>1969</u>	<u>1762</u>	<u>1994</u>	<u>2035</u>	<u>1974</u>	<u>1970</u>	<u>1999</u>	<u>1863</u>
Total foodgrains	<u>11806</u>	<u>11659</u>	<u>12347</u>	<u>12334</u>	<u>12335</u>	<u>12402</u>	<u>12287</u>	<u>12413</u>
Sugarcane	89	78	72	87	100	99	113	132
Other sugars	-	-	-	-	-	-	-	-
Total sugars	<u>89</u>	<u>78</u>	<u>72</u>	<u>87</u>	<u>100</u>	<u>99</u>	<u>113</u>	<u>132</u>
Chillies	121	122	111	118	114	126	121	124
Other condiments and spices	115	107	106	100	100	105	130	114
Total condiments and spices	<u>236</u>	<u>229</u>	<u>217</u>	<u>218</u>	<u>214</u>	<u>231</u>	<u>251</u>	<u>238</u>
Potato	17	1	-	1	1	2	2	2
Other fruits and vegetables	85	92	85	85	74	69	76	73
Total fruits and vegetables	<u>102</u>	<u>93</u>	<u>85</u>	<u>86</u>	<u>75</u>	<u>71</u>	<u>78</u>	<u>75</u>
Miscellaneous foodcrops	-	27	15	-	-	-	-	-
Total foodcrops	<u>12233</u>	<u>12086</u>	<u>12736</u>	<u>12725</u>	<u>12724</u>	<u>12803</u>	<u>12729</u>	<u>12858</u>
Cotton	95	46	60	165	264	271	172	189
Other fibres	15	13	12	12	12	11	11	14
Total fibres	<u>110</u>	<u>59</u>	<u>72</u>	<u>177</u>	<u>276</u>	<u>282</u>	<u>183</u>	<u>203</u>
Groundnut	1586	1643	1510	1642	1725	1780	2024	1996
Sesamum	27	36	38	32	36	35	73	62
Rape	-	-	-	-	-	-	-	-
Mustard	-	-	-	-	-	-	-	-
Linseed	5	4	3	4	3	2	2	2
Castor seed	2	1	1	1	2	2	2	2
Other oilseeds	234	190	221	234	225	218	186	189
Total oilseeds	<u>1854</u>	<u>1874</u>	<u>1773</u>	<u>1913</u>	<u>1991</u>	<u>2037</u>	<u>2287</u>	<u>2251</u>
Tobacco	124	242	256	241	191	199	182	159
Other drugs and narcotics	24	23	21	22	21	24	24	24
Total drugs and narcotics	<u>148</u>	<u>265</u>	<u>277</u>	<u>263</u>	<u>212</u>	<u>223</u>	<u>206</u>	<u>183</u>
Fodder crops	1798	2011	1685	1608	1755	896	945	999
Miscellaneous non-foodcrops	-	-	-	-	-	-	-	-
Total non-foodcrops	<u>3910</u>	<u>4209</u>	<u>3807</u>	<u>3961</u>	<u>4234</u>	<u>3438</u>	<u>3621</u>	<u>3636</u>
Gross Cropped Area	<u>16143</u>	<u>16295</u> ★	<u>16543</u>	<u>16686</u>	<u>16958</u>	<u>16241</u>	<u>16350</u>	<u>16494</u>

★ SCRB, 1952-53 shows the gross cropped area as 16,286 (hundred) acres. This however is an error. It is seen that 'non-reported' area to the extent of 9 (hundred) acres has been left out through oversight. The gross cropped area thus should be 16,295 (hundred) acres.

TABLE 5.21 : OUTTURN OF CROPS IN SANGLI DISTRICT (FIGURES IN HUNDRED TONS)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	130	100	93	150	136	120	144	165
Wheat	34	36	57	60	58	56	73	66
Jowar	729	936	1438	1734	1716	1667	1864	1933
Bajri	163	147	273	263	328	270	245	253
Maize	13	12	16	45	13	14	12	12
Ragi	15	16	19	24	12	10	16	10
Kodra	-	-	-	-	-	-	-	-
Other cereals	18	7	22	17	23	24	9	21
Total cereals	<u>1102</u>	<u>1254</u>	<u>1918</u>	<u>2293</u>	<u>2286</u>	<u>2161</u>	<u>2363</u>	<u>2460</u>
Gram	44	65	66	68	70	93	69	41
Tur	100	78	122	124	113	119	122	116
Mug	8	5	7	6	5	5	4	5
Udid	22	18	23	22	22	21	22	21
Horse gram	24	22	35	46	43	44	46	42
Other pulses	87	58	108	90	92	94	94	92
Total pulses	<u>285</u>	<u>246</u>	<u>361</u>	<u>356</u>	<u>345</u>	<u>376</u>	<u>357</u>	<u>317</u>
Total foodgrains	<u>1387</u>	<u>1500</u>	<u>2279</u>	<u>2649</u>	<u>2631</u>	<u>2537</u>	<u>2720</u>	<u>2777</u>
Sugarcane (gul)	209	154	169	219	272	276	304	356
Chillies	22	22	21	23	22	26	24	37
Potato	10	1	-	1	2	5	6	5
Cotton (kapas)	6	3	5	16	33	56	14	22
Groundnut	308	237	374	436	389	539	494	409
Sesamum	3	2	4	4	4	4	8	7
Rape	-	-	-	-	-	-	-	-
Mustard	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-
Castor seed	-	-	-	-	-	-	-	-
Tobacco	28	53	56	34	41	37	38	31
Straw	2993	3546	5510	6476	6523	6224	6774	6989
Arhar sticks	667	520	814	827	754	794	814	774
Sesamum sticks (a)	135	180	190	160	180	175	365	310
Cotton seed	4	2	3	11	22	37	9	15
Cotton sticks (a)	950	460	600	1650	2640	2710	1720	1890
Bagasse	47	35	38	49	61	62	68	80
Timber (b)	-	-	-	-	-	-	-	-
Firewood (b)	106	48	16	19	16	16	22	19

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 5.22 : AREA UNDER CROPS IN KOLHAPUR DISTRICT (FIGURES IN HUNDRED ACRES)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	1888	1887	1972	2083	2111	2153	2197	2256
Wheat	27	36	47	49	59	61	45	54
Jowar	1471	1479	1449	1408	1500	1378	1457	1372
Bajri	101	107	118	101	103	105	68	60
Maize	81	81	91	87	93	94	96	100
Ragi	725	757	728	847	851	883	923	826
Kodra	30	29	29	22	33	34	35	52
Other cereals	543	499	683	600	543	546	498	548
Total cereals	<u>4866</u>	<u>4875</u>	<u>5117</u>	<u>5197</u>	<u>5293</u>	<u>5254</u>	<u>5319</u>	<u>5268</u>
Gram	97	74	85	70	91	96	104	75
Tur	181	177	173	172	192	173	187	171
Mug	4	4	9	7	7	6	8	6
Udid	60	62	60	67	54	41	47	48
Horse gram	29	102	108	115	96	164	161	180
Other pulses	190	102	123	130	126	63	59	60
Total pulses	<u>561</u>	<u>521</u>	<u>558</u>	<u>561</u>	<u>566</u>	<u>543</u>	<u>566</u>	<u>540</u>
Total foodgrains	<u>5427</u>	<u>5396</u>	<u>5675</u>	<u>5758</u>	<u>5859</u>	<u>5797</u>	<u>5885</u>	<u>5808</u>
Sugarcane	497	471	402	479	516	553	582	614
Other sugars	-	-	-	-	-	-	-	-
Total sugars	<u>497</u>	<u>471</u>	<u>402</u>	<u>479</u>	<u>516</u>	<u>553</u>	<u>582</u>	<u>614</u>
Chillies	148	135	112	142	148	151	155	169
Other condiments and spices	27	22	17	16	18	22	23	2
Total condiments and spices	<u>175</u>	<u>157</u>	<u>129</u>	<u>158</u>	<u>166</u>	<u>173</u>	<u>178</u>	<u>171</u>
Potato	1	-	-	-	-	1	-	1
Other fruits and vegetables	62	65	59	61	54	54	57	63
Total fruits and vegetables	<u>63</u>	<u>65</u>	<u>59</u>	<u>61</u>	<u>54</u>	<u>55</u>	<u>57</u>	<u>64</u>
Miscellaneous foodcrops	-	-	-	-	-	-	-	-
Total foodcrops	<u>6162</u>	<u>6089</u>	<u>6265</u>	<u>6456</u>	<u>6595</u>	<u>6578</u>	<u>6702</u>	<u>6657</u>
Cotton	78	49	31	63	89	111	101	103
Other fibres	14	11	11	12	14	13	12	12
Total fibres	<u>92</u>	<u>60</u>	<u>42</u>	<u>75</u>	<u>103</u>	<u>124</u>	<u>113</u>	<u>115</u>
Groundnut	<u>1170</u>	<u>1172</u>	<u>1118</u>	<u>1170</u>	<u>1144</u>	<u>1070</u>	<u>1169</u>	<u>1235</u>
Sesamum	7	7	8	5	6	5	6	5
Rape	-	-	-	-	-	-	-	-
Mustard	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-
Castor seed	-	1	1	-	-	-	-	-
Other oilseeds	32	44	35	55	47	52	37	34
Total oilseeds	<u>1209</u>	<u>1224</u>	<u>1162</u>	<u>1230</u>	<u>1197</u>	<u>1127</u>	<u>1212</u>	<u>1274</u>
Tobacco	243	370	476	423	361	406	312	270
Other drugs and narcotics	2	5	5	4	6	5	5	5
Total drugs and narcotics	<u>245</u>	<u>375</u>	<u>481</u>	<u>427</u>	<u>367</u>	<u>411</u>	<u>317</u>	<u>275</u>
Fodder crops	1710	1841	1949	2003	1992	1854	1859	1886
Miscellaneous non-foodcrops	3	-	-	3	-	-	-	-
Total non-foodcrops	<u>3259</u>	<u>3500</u>	<u>3634</u>	<u>3738</u>	<u>3659</u>	<u>3516</u>	<u>3501</u>	<u>3550</u>
Gross Cropped Area	<u>9421</u>	<u>9589</u>	<u>9899</u>	<u>10194</u>	<u>10254</u>	<u>10094</u>	<u>10203</u>	<u>10207</u>

TABLE 5.23 : OUTTURN OF CROPS IN KOLHAPUR DISTRICT (FIGURES IN HUNDRED TONS)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	816	789	958	1357	1221	1438	1581	1351
Wheat	4	9	12	10	12	11	11	14
Jowar	512	517	403	698	544	642	597	565
Bajri	5	5	9	8	10	13	6	5
Maize	18	25	23	57	28	30	23	31
Ragi	126	173	187	205	206	238	248	206
Kodra	6	6	6	4	11	10	9	13
Other cereals	45	54	87	63	62	81	69	67
Total cereals	<u>1532</u>	<u>1578</u>	<u>1685</u>	<u>2402</u>	<u>2094</u>	<u>2463</u>	<u>2544</u>	<u>2252</u>
Gram	8	10	15	14	17	19	16	7
Tur	38	43	43	46	55	49	53	46
Mug	1	1	2	1	1	1	1	1
Udid	12	9	9	10	9	8	9	9
Herse gram	3	12	14	13	13	25	24	26
Other pulses	20	15	18	19	19	13	13	12
Total pulses	<u>82</u>	<u>90</u>	<u>101</u>	<u>103</u>	<u>114</u>	<u>115</u>	<u>116</u>	<u>101</u>
Total foodgrains	<u>1614</u>	<u>1668</u>	<u>1786</u>	<u>2505</u>	<u>2208</u>	<u>2578</u>	<u>2660</u>	<u>2353</u>
Sugarcane (gul)	1487	1410	1204	1440	1612	1710	1754	1876
Chillies	16	23	13	31	34	36	26	18
Potato	-	-	-	-	-	-	-	1
Cotton (kapas)	6	3	3	6	13	26	5	13
Groundnut	361	254	354	379	360	359	426	367
Sesamum	1	-	1	-	-	1	1	1
Rape	-	-	-	-	-	-	-	-
Mustard	-	-	-	-	-	-	-	-
Linseed	-	-	-	-	-	-	-	-
Castor seed	-	-	-	-	-	-	-	-
Tobacco	59	82	65	73	41	69	70	48
Straw	2461	2542	2382	3638	3036	3570	3513	3194
Arhar sticks	253	287	287	307	367	327	354	307
Sesamum sticks (a)	35	35	40	25	30	25	30	25
Cotton seed	4	2	2	4	9	18	4	9
Cotton sticks (a)	780	490	310	630	890	1110	1010	1030
Bagasse	335	317	271	324	363	385	395	422
Timber (b)	7	8	8	8	8	8	8	8
Firewood (b)	536	582	553	576	576	570	576	579

(a) In hundred maunds

(b) In thousand cubic feet

CHAPTER VI

AREA AND OUTTURN OF CROPS IN THE DISTRICTS OF VIDARBHA -- SOURCES OF DATA

Vidarbha region, as stated earlier, consists of eight districts, viz. Buldhana, Akola Amravati, Yeotmal, Wardha, Nagpur, Bhandara and Chanda. Prior to reorganization of States in 1956 these districts were part of the old State of Madhya Pradesh. In 1956 they were joined to the reorganized Bombay State. Later when Bombay State was bifurcated in 1960 these districts came to be included in the State of Maharashtra. Thus the main primary sources of data for Vidarbha region consist of the publications of the old Madhya Pradesh State in addition to those of the Government of India, the reorganized Bombay State and the State of Maharashtra. The more useful among the secondary sources however are those issued by official agencies in the reorganized Bombay State and later Maharashtra.

The important 'primary' sources of data on area and outturn in Vidarbha districts are mostly the same as those for Konkan and Deccan districts. However, SCRB is of no use for years before 1956-57 and it is the annual Season and Crop Report of Madhya Pradesh (SCRMP) which

we must turn to. In addition there are some reports on survey of villages in Vidarbha districts conducted by the GIPE. The main 'secondary' sources relating to Konkan and Deccan such as EMh, BCAS, SAB, 1957-58 and so on are of use here also. Besides we have the Statistical Abstract of Madhya Pradesh (SAMP) for earlier years.

In Chapter III it was noted that some of the 'secondary' sources also contain an element of 'primary' reporting. The inclusion of this element in the data provided by 'secondary' sources was necessitated by re-alignment of boundaries of a few districts. It is true that no alterations were made in the boundaries of Vidarbha districts at the time of States reorganization in 1956. Later, however, in February 1959, Rajura taluka in Nanded district in Marathwada was transferred to Chanda district in Vidarbha. Clearly none of the SCRs upto 1958-59 could have made an allowance for this change. Nor does the EMh. But BCAS has corrected figures of area and outturn relating respectively to Nanded and Chanda in the years 1956-57, 1957-58 and 1958-59. This correction is presumably in the nature of 'primary' reporting. However, this is a matter of limited significance though, as will be seen later, we shall have to depend upon 'secondary' sources to a greater extent in the case of the districts of Vidarbha than those of Konkan and Deccan.

Among the 'primary' sources of data ASI and MRs would be of limited use to us for reasons already cited in an earlier chapter. That leaves SCRs, both of old Madhya Pradesh and of reorganized Bombay, 'Estimates' and IAS. We have already seen that the SCRB is probably superior to 'Estimates' and the IAS in respect of coverage of data. It is true that unlike the SCRB 'Estimates' provide districtwise outturn data relating to pepper, ginger and jute. But this fact is of little practical interest since there was no outturn of these crops in any of the Vidarbha districts as is evident from the relevant outturn tables in 'Estimates'.

As for coverage in SCRMP one may surmise that reporting of post-1951-52 data for former princely states which merged into the old Madhya Pradesh State has been probably as satisfactory as in the case of Bombay since Madhya Pradesh also took early steps to extend the patwari agency to the merged areas.¹ However, on the whole, the coverage with regard to outturn data in SCRMP does not seem to be equally satisfactory. The SCRMPs of 1951-52 and 1952-53 do not provide any outturn data districtwise.

¹ S.C. Chaudhri: 'A Survey of the Improvements in Agricultural Statistics since Independence' in V.K.R.V. Rao and others (edt.): Papers on National Income and Allied Topics, Vol. I (Asia Publishing House, Bombay, 1960), p. 9.

Then again, in the case of mixed sowings these SCRMPs gave combined area under the respective mixtures. In view of the foregoing it will be necessary to depend on alternative sources, which are 'secondary' in nature. SCRMPs for the years, 1953-54 to 1955-56 give outturn figures, districtwise for the more important crops. To be sure, 'Estimates' provides outturn data on a district basis for crops omitted from the outturn tables of SCRMPs, 1953-54 to 1955-56, viz. ragi, small millets, barley, ginger, pepper, chillies, tobacco and jute. However, on scrutiny of figures of outturn of these crops in Vidarbha districts as shown in 'Estimates' one finds that except for small millets and chillies these crops were either not grown or, if grown, gave insignificantly small yields in these districts. It will also be noted that SCRMPs for these three years show a breakdown of area under mixed crops by the respective individual crops. Thus SCRMPs for the three years, 1953-54 to 1955-56 are likely to be far more useful than those for 1951-52 and 1952-53. The foregoing indicates that our dependence on secondary sources will be greater here than in the case of Konkan and Deccan.

The main problem in point of reliability is not so much one of comparison between the different sources of data as that of the degree of reliability in the

official sources. Some of the preliminary facts pertaining to Vidarbha in this respect are not discouraging. The patwari agency existed in the districts all throughout the period under review. The method employed for collection of data has been one of complete enumeration. Further, the patwari has been in charge of 3 to 7 villages on an average, which fact would have some relevance to accuracy of data.²

One important problem in the present context is that relating to the extent of unsurveyed and/or non-reporting areas. According to Appendix IV of the Report of the Technical Committee on 'Co-ordination of Agricultural Statistics in India' (1949), about 80 per cent of the total geographical area in C.P. and Berar (which then included Vidarbha districts) was estimated to be surveyed cadastrally.³ The proportion related to the State inclusive of the area of the merged princely states. One, however, does not obtain here a districtwise breakdown, nor the possible significance of unsurveyed area from the point of view of crop cultivation.

We see references to some of these matters in SCRMPs,

²Co-ordination of Agricultural Statistics in India (Report of the Technical Committee) (Ministry of Agriculture, Government of India, 1949), p. 5.

³Ibid., p. 134.

beginning particularly with the SCRMP, 1953-54. We are told that of the total geographical area of Madhya Pradesh by village papers of 82.9 million acres, an area of 57.7 million acres (i.e. about 70 per cent), was cadastrally surveyed in any case by 1954.⁴ The fact that 25.2 million acres (i.e. nearly 30 per cent of the total area) was unsurveyed does not seem to be significant for our purpose. In relation to this (unsurveyed) area the SCRMP, 1953-54 states that it "is mostly wooded and whatever small area is under plough is mostly concentrated in 3505 'mashati' villages (i.e. unsurveyed revenue villages) covering a geographical area of 2.0 million acres."⁵ This cultivated area is roughly estimated by the patwari by bamboo or chains. Thus even if breakdown district-by-district of unsurveyed areas is not available it seems reasonable to assume that the problem of such areas in Vidarbha district has not been quite significant -- in any case since 1953-54. As for the two earlier years the picture probably was not much different. SCRMP, 1952-53 does not make as clear a statement as SCRMP, 1953-54. But the broad figures of villages

⁴ Season and Crop Report of Madhya Pradesh (Pre-States Reorganisation), for the year ending 31st May, 1954 (Director of Land Records, Government of Madhya Pradesh), p. 1.

⁵ SCRMP for the year ending 31st May, 1954, p. 2.

surveyed and unsurveyed mentioned in the Report as also the description therein of the nature of data on cultivation in the unsurveyed villages seem to agree with the corresponding details in SCRMP, 1953-54.⁶ We may then assume that the cultivated area in the unsurveyed villages was insignificant also in 1952-53. Probably the same was the case in 1951-52.

As regards 'non-reporting' area, SCRMP, 1953-54 indicates that a reporting agency existed over an area of 59.7 million acres, i.e. 72 per cent of the total geographical area of the Madhya Pradesh State. It was also estimated that there was hardly any cultivation in the remaining area of 23.2 million acres, much of which was accounted for by villages managed by the Forest department and some by those lying mostly in thick forests and inaccessible hills. The geographical area of villages managed by the Forest Department was 20 million acres and ad hoc estimates of area and outturn of crops in these villages were included in official forecasts.

Besides we have some data on 'non-reported' areas in SCRBS, 1956-57 to 1958-59. It has been stated earlier that upto 1958-59 SCRBS showed a breakdown of area under

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SCRMP for the year ending 31st May, 1953, p. 1.

a crop into 'reported' and 'non-reported', estimates for 'non-reported' area being more rough in nature. The SCRBs for the last three years in the period selected provide the relevant data for Vidarbha districts as well. It is seen that area under crops 'non-reported' was shown as 'nil' in all the three years in Buldhana, Akola, Yeotmal, Nagpur and Bhandara districts. In Wardha and Amravati 'non-reported' area under crops was estimated to be very much less than 1 per cent of the gross cropped area. In the remaining district of Chanda no area under crops was shown as 'non-reported' in 1958-59 but in 1956-57 and 1957-58 the proportion of such area to the gross cropped area in the district came to 2 and 2.5 per cent respectively. Probably it is safe to assume that any possible distortion in our estimates on this account would be negligible.

An additional aspect of reliability of data relates, to the scope of crop-cutting surveys in the reporting of outturn estimates. According to DESAg's "Guide to Current Agricultural Statistics", estimates⁷ of outturn of the following crops in Vidarbha region have been based upon crop-cutting experiments since 1951-52: rice; jowar; wheat; gram; kodon-kutki; and tur.⁷ We shall leave out kodon-

⁷ DESAg: Guide to Current Agricultural Statistics (Revised Edition), 1962, p. 14.

kutki as no separate estimates for this crop will be shown. It needs to be stated that the list of crops covered by crop-cutting surveys since 1951-52 as shown in EMh and BCAS includes cotton in addition to the five foodgrains (exclusive of kodon-kutki) already mentioned.⁸ On the other hand, DESAg's 'Guide' specifies that the outturn estimates of cotton in Vidarbha region came to be based upon crop-cutting surveys only since 1954-55. In this connection it seems worthwhile to turn to SCRAMP, 1951-52, 1952-53 and 1953-54 for elucidation. In their remarks on production of a few selected crops (which include cotton) these publications clearly indicate that the method of crop-cutting experiments was used in Madhya Pradesh to estimate the outturn of cotton also in the respective years.⁹ This would mean that the EMh and BCAS are right on this point. Further, both the 'Guide' on the one hand and the EMh and BCAS on the other state that the method of crop-cutting surveys for outturn estimation in Vidarbha was later extended to groundnut and bajri in 1957-58 and 1958-59 respectively.

⁸ EMh, p. 1.

⁹ See (i) SCRMP for the year ending the 31st May 1952, p. 6; (ii) SCRMP for the year ending the 31st May 1953, p. 8, and (iii) SCRMP (Pre-States Reorganisation) for the year ending 31st May 1954, p. 12.

The crops such as those mentioned in the preceding paragraph have been designated earlier as 'selected' or 'specified' crops, or, alternatively, crops coming under category (a). In addition there are crops under category (b) (viz., those covered by the traditional annewari methods of outturn estimation),¹⁰ and those under (c) (i.e. crops for which no estimates of outturn were reported in the official publications). Since the scope of crop-cutting surveys was extended thrice in the period selected in this study we shall analyse data for the three years, 1951-52, 1957-58 and 1958-59, assuming that the broad picture of area distribution of categories of crops was not significantly different in the remaining years.

The composition of the category (b) evidently depends on the availability of data on outturn estimated by the traditional annewari method. The SAMP, 1954-55, EMH, and MhG provide between themselves data on outturn in 1951-52 of the following crops coming under category (b): bajri, maize, ragi, residuary cereals, pulses other than gram and tur, sugarcane, chillies, potatoes, groundnut,

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It will be seen that the basic sources of outturn data for these districts being SCRMP before States reorganization and SCRB after that, the composition of this category was not the same in the two periods. The exact composition is set out later.

castor seed, sesamum, rape and mustard, linseed, and tobacco. For the years 1957-58 and 1958-59 the basic source of outturn data relating to these districts was the same as that for Konkan and Deccan districts, viz. SCRB. The crops constituting the category (b) in these years were the same as those enumerated in Chapter III¹¹ except that in Vidarbha districts bajri came under this category in 1957-58, and tur under category (a) and tobacco under (b) in both the years, unlike in Deccan districts.

In order to calculate the proportion of area under each category we take data on area under the respective categories and on gross cropped area in Vidarbha districts except Chanda from the district area tables shown at the end of the next chapter. The sources used are mentioned in the course of that chapter. In the area table for Chanda figures have been adjusted in view of the enlargement of the district. However, as Rajura taluka formed a part of Adilabad district in the Hyderabad State upto 1956 and later was included in Marathwada region of the reorganised Bombay State upto 1959, the distribution of crops as between the three categories in the taluka over the period, 1951-52 to 1958-59 was somewhat different from

¹¹

See Chapter III, p. 86, footnote 26.

that in Chanda district. It is therefore better to use figures relating to the old Chanda district exclusive of Rajura taluka. Data on gross cropped area in this district for 1951-52 are drawn from SCRMP and for the remaining two years from SCRB. Area under category (a) crops in 1951-52 is taken from SAMP, 1954-55 and that in 1957-58 and 1958-59 respectively from SCRB. We take from IAS, 1952-53 and 1953-54, Vol. II area under category (b) in 1951-52 and from SCRB that in 1957-58 and 1958-59. Figures of area under (c) are residuals. Ignoring decimals the relevant proportions for the different districts are tabulated below (Table 6.1).

One important fact that the table bears out is that the proportion of area under (c), outturn estimates for which are most arbitrary, was quite small in all the Vidarbha districts, particularly as compared to the relevant proportions in the districts of Konkan and Deccan. It will be remembered that this category includes a high income-yielding group of crops such as fruits and vegetables. From the publications used in preparing area tables it is seen that the proportion of area under fruits and vegetables in all the Vidarbha districts except Nagpur was much less than 1 per cent of the gross cropped area in all the eight years. In Nagpur for most part the proportion varied between 2 and 3 per cent which

TABLE 6.1 : PROPORTION OF AREA UNDER EACH OF THE THREE CATEGORIES OF CROPS,
(a), (b) AND (c) TO THE GROSS CROPPED AREA

(percentages)

District	1951-52			1957-58			1958-59		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
Buldhana	81	15	4	86	11	3	87	9	4
Akola	85	14	1	91	8	1	91	8	1
Amravati	88	10	2	92	6	2	94	5	1
Yeotmal	83	16	1	89	10	1	91	8	1
Wardha	86	12	2	89	10	1	89	10	1
Nagpur	81	14	5	83	14	3	84	13	2
Bhandara	72	27	1	72	27	1	68	31	1
Chanda	75	24	1	74	25	1	73	26	1
Vidarbha	82	16	2	85	13	2	86	13	1

means that it almost equalled the proportion shown under category (c) in this district.

Certain additional facts may be noted. Over 80 per cent of the gross cropped area in all the Vidarbha districts except Bhandara and, to some extent, Chanda, was devoted to the 'selected' crops, outturn estimates for which are relatively more reliable. Then again, the area data in IAS and SCRs indicate that some of the crops such as arecanut, jute, plantation crops and coconut which have been high-income-yielding in the country as a whole were not grown at all in these districts.

Other crops which also have yielded relatively high per acre value to the producer are sugarcane, chillies, potatoes and tobacco. The data in the N.S.S. publication No. 32 show that in Central India (i.e. the population zone in which Vidarbha districts were included), the per acre value of spices as a group was much higher than that respectively of cereals, pulses and cotton.¹² Though this publication does not show value per acre from potato, sugarcane or tobacco in Central India, the respective values shown for other zones were considerably higher

¹² N.S.S.: No. 32 (Part I), p. 49; (Part II), p. 35; and (Part III), p. 36.

than those yielded by cereals, pulses or cotton.¹³ It is true that N.S.S. data related to a specific period, mostly 1952-53. Presumably the broad relationship between per acre values was not very different in other years.

The four crops mentioned in the preceding paragraph were unimportant in Vidarbha districts. The area tables at the end of the next chapter would show that less than 1 percent of the gross cropped area in Buldhana, Akola, Amravati,¹⁴ Yeotmal and Wardha, was under these crops taken together in all the eight years. This means that the crops which were particularly lucrative (viz. fruits and vegetables, chillies, sugarcane and tobacco) together accounted for less than 2 per cent of the gross cropped area in these five districts.

As for the remaining crops such as minor cereals and pulses, oilseeds, etc., the N.S.S. No. 32 shows their respective per acre values in Central India to be very much lower than those of major cereals, pulses or cotton. These low-yielding crops accounted for about 10 to 15 percent of the gross cropped area in the five Vidarbha

¹³ Ibid. (Part I), p. 40; (Part II), p. 35 and (Part III), p. 36.

¹⁴ The area under these crops in Amravati was slightly above 1 percent in 1957-58 only.

districts mentioned. One gains the impression that the proportions under (a) in Table 6.1 probably represent: the floor to the proportionate contribution to gross agricultural income by the 'specified' crops in the five districts assuming that the data on prices in the districts are adequately reliable and assuming further that the slight distortion in estimates introduced by the less reliable estimates of value of byproducts may be ignored. If this is so, then clearly the five Vidarbha districts are better placed than the districts of Konkan and Deccan.

The remaining three districts of Vidarbha are Nagpur, Bhandara and Chanda. It is true that in Bhandara and Chanda potatoes, chillies, sugarcane and tobacco together accounted for a little over 1 percent of the gross cropped area. But area under these crops and fruits and vegetables taken together was under 2 percent in all the eight years. Further, about 25 to 30 percent of area under crops in Bhandara and 18 to 20 percent in Chanda was devoted to relatively low-yielding crops. As for Nagpur nearly 5 to 6 percent of the gross cropped area was under the high-yielding crops inclusive of fruits and vegetables, and 10 to 12 percent under the low-yielding ones. Though this is not a position probably as 'satisfactory' as that in the other Vidarbha districts it seems to be better

than that in Konkan and Deccan.

The foregoing analysis would suggest that the income estimates for Vidarbha districts in any year are likely to be more reliable than those for Konkan and Deccan. On the other hand, one may also note that Vidarbha estimates are likely to raise problems of year-to-year comparability in a greater degree. The lists of crops coming respectively under categories (a), (b) and (c) remained the same in the whole period, 1951-52 to 1958-59 in Konkan and Deccan. It was further seen that the pattern of distribution of area as between the three categories also did not change much. This would mean that there is not much of a problem of year-to-year comparability here. In Vidarbha, however, the scope of crop-cutting surveys was extended in 1957-58 and 1958-59. This fact may vitiate comparability to some extent.

However, there seems to be little problem with estimates for Wardha, Nagpur, Bhandara and Chanda. The area data in the official publications show that the two crops which were subsequently covered by the crop-cutting surveys, viz., groundnut and bajri, were of little importance in these four districts. The position was somewhat different in the remaining four districts. Here the two crops -- particularly groundnut -- were not quite unimportant. This means that there was a significant increase in the

proportion of area under 'selected' crops in 1957-58 as compared to that in 1951-52. We hope that this does not mar comparability in a significant degree. Lastly, it will be seen in Chapter IX that data on prices for Vidarbha are less satisfactory than those for Konkan and particularly Deccan, especially in the earlier years.

It has already been observed that the degree of reliability in outturn estimates will also depend on the extent to which due allowance was given to the failure of crops. SCRMPs, 1951-52 and 1952-53 do not give any data on area 'failed'. The area table in SCRMP, 1953-54 includes a column for area 'failed' but data are shown as 'not available'. SCRMPs, 1954-55 and 1955-56 give the relevant data but these are not usable. For example, it is found that the sumtotal of area 'matured' and area 'failed' does not tally with the gross cropped area in most of the districts. Thus only SCRBs, 1956-57 to 1958-59 provide data which lend themselves to analysis. The area 'failed' in Buldhana, Amravati, Wardha, ^{and} Nagpur is seen to be 'nil' in each of the three years. In Akola it was much less than 0.1 percent of the gross cropped area in 1958-59 and 'nil' in the remaining two years. In Yeotmal and Chanda no failure was reported in 1957-58. In 1956-57 and 1958-59 the area 'failed' was

0.6 and 0.2 percent respectively in Yeotmal, and 2.5 and 0.1 percent respectively in Chanda. Reasoning on the same lines as in the case of Deccan districts we may say that no deflation in estimates on account of failure of crops seems to be called for.

CHAPTER VII

AREA AND OUTTURN OF CROPS IN VIDARBHA DISTRICTS - ESTIMATION

After having analysed the sources of data from the points of view of coverage and reliability we shall take up the work of estimating area and outturn of crops in Vidarbha districts. To begin with it would be useful to consider the problem of adjustment of figures to allow for revision of district boundaries. There were no alterations in the boundaries of any of the Vidarbha districts at the time of States reorganization in 1956. Later in February, 1959 Rajura taluka in Nanded district was transferred to Chanda. As a result the geographical area of Chanda was increased by 8.3 percent. The BESM was not required to take note of this change in boundaries in its estimate of Maharashtra State income for the period 1955-56 to 1958-59 since it was interested in aggregates for the whole State, and not separately for the districts.

Clearly the relevant SCRs for the whole period upto 1958-59 do not provide data for the expanded Chanda district. The same is true with the data in EMh. BCAS however gives corrected figures of area and outturn of

the principal crops (cited in that publication) for the years 1956-57, 1957-58 and 1958-59. SAMh, 1960-61 also provides additionally adjusted data on area and outturn of maize, chillies and castor seed in 1957-58 and 1958-59.¹

We may attempt to gauge the importance of these corrections by deriving the distribution of area by crops in Rajura taluka with the help of BCAS and SAMh data. Only data for 1957-58 and 1958-59 are considered below as SAMh does not give any figures for 1956-57. It will be seen that by deducting from area under a crop in the expanded Chanda district as shown in BCAS the area under that crop in the old Chanda district given in SCRB we get the area under the crop in Rajura taluka. BCAS shows combined area under rape, mustard and linseed. All the same it is clear from SCRB area data for 1956-57, 1957-58 and 1958-59 that area under rape and mustard both in Chanda and Nanded districts was absolutely negligible. We can thus safely assume that the additional area shown under rape, mustard and linseed in Chanda in each of the three years by BCAS was area under linseed only in Rajura

¹ SAMh gives area and outturn figures in hundred hectares and hundred M. tons respectively. These are converted into hundred acres and hundred tons.

taluka. A similar exercise with respect to data in SAMh and SCRB relating to maize, chillies and castor seed will give area under the respective crops in the taluka. We show the results in Table 7.1.

TABLE 7.1 : AREA UNDER CROPS IN RAJURA TALUKA

(Figures in hundred acres)

Crops	1957-58	1958-59
Rice	34	42
Wheat	72	67
Jowar	737	727
Bajri	-	-
Maize	3	4
Ragi	-	-
Other cereals	4	-
Gram	22	21
Tur	73	61
Other pulses	226	219
Sugarcane	-	-
Chillies	37	40
Cotton	365	297
Groundnut	-	-
Sesamum	162	175
Linseed	212	152
Castor seed	-	3
Tobacco	-	-
Total under crops above	1,947	1,808

It would be important to see the proportion of aggregate area under crops in Table 7.1 to the gross cropped area in Rajura taluka. SAMh gives figures of

gross cropped area for the expanded district and SCRB for the district exclusive of Rajura taluka. It may, however, be noted that presumably the figures shown in SAMh were subject to further revision.² By deducting gross cropped area in Chanda given in SCRB from that shown in SAMh we get gross cropped area in Rajura taluka. The total area under crops in the taluka, so derived, was 1,867 (hundred) acres and 1,816 (hundred) acres in 1957-58 and 1958-59 respectively. Actually the aggregate area in 1957-58 under the crops in Table 7.1 turns out to be larger than the gross cropped area but this may be because the data in SAMh were still to be finally revised. In any case one gets the legitimate impression that the following crops accounted for almost the whole of the gross cropped area in Rajura taluka: rice, wheat, jowar, gram, tur, other pulses, chillies, cotton, sesamum and linseed. It is also seen from a comparison between SAMh and SCRB data that area under fruits and vegetables, a high-income-yielding group of crops, was almost 'nil' in the taluka.

Area and outturn of all the aforementioned crops except chillies in the expanded Chanda district in 1956-57, 1957-58 and 1958-59 are obtained from the BCAS. Area/

² SAMh, 1960-61, Appendix, p. 367.

outturn of linseed in expanded Chanda district is derived by deducting from area/outturn of rape, mustard and linseed in BCAS the area/outturn of rape and mustard in Chanda taken from SCRB. The relevant figures relating to maize, chillies and castor seed for 1957-58 and 1958-59 are taken from SAMh. These three crops were relatively insignificant in Rajura taluka. It has already been observed that the remaining crops were hardly of any consequence in the taluka. Hence in the case of area/outturn of the three crops in the district in 1956-57 and those of the remaining crops in each of the three years we shall depend on the same sources of data as will be cited in connection with estimates for the other Vidarbha districts.

A special consideration needs to be given to the estimates of area/outturn of residuary pulses. In the area tables at the end of this chapter we show a breakdown of pulses into gram, tur, udid, lakh and 'other pulses'. However, one can obtain from BCAS a breakdown of area/outturn figures into those for gram, tur and 'other pulses'. The problem is one of allocating the area/outturn under pulses other than gram and tur in Rajura taluka (obtained by comparing BCAS and SCRB data for Chanda) as between udid, lakh and the remaining pulses. In SCRBs, 1956-57, 1957-58 and 1958-59 Nanded included

Rajura taluka. A scrutiny of data shows that only mug and udid were the relatively important among residuary pulses in this district. It may, therefore, not be far wrong to distribute area/outturn under pulses other than gram and tur in Rajura taluka between mug and udid only. It is seen in SCRBs mentioned that area under mug was between 2 and 3 times that of area under udid in Nanded district. Broadly the same relationship obtained as between the respective outturn of the two crops. We shall, therefore, assume that two-third of area/outturn of pulses other than gram and tur in Rajura taluka is to be allotted to mug and the remaining one-third to udid. Since we do not show data for mug separately the additional area/outturn allocated to this crop would evidently be merged into area/outturn of the residuary category 'other pulses'. The data for Chanda are adjusted accordingly.

The problem of adjustment of data relating to Chanda for the years 1951-52 to 1955-56 has to be considered separately. It was seen that the crops included in EMh/BCAS accounted for almost the whole of the area under crops in Rajura taluka in 1957-58 and 1958-59. The picture in the other years is assumed to be the same. Data on area and outturn of these crops in the taluka in the years 1951-52 to 1955-56 have been included in those

pertaining to Nanded district. We shall assume that percentage variation in area under each of the relevant crops from year-to-year upto 1956-57 in Rajura taluka was the same as that in Nanded district, the data for this district for the purpose being taken from EMh/BCAS. Since we can obtain data on area under the respective crops in the taluka in 1956-57 by comparing BCAS and SCRB data relating to ~~the~~ Chanda district, we can derive area figures for the years 1951-52 to 1955-56.

A clarification is in point with regard to data on area under rape, mustard and linseed. EMh/BCAS give a combined figure for the three crops from year to year. It was pointed out earlier that the combined area under rape and mustard was negligible in Chanda and Nanded respectively in 1956-57, 1957-58 and 1958-59. Area under rape and mustard in Nanded during the period is shown in a table at the end of the next chapter, the sources being explained in the chapter itself. This area relates to Nanded exclusive of Rajura. All the same it is deducted from area under rape, mustard and linseed in the district inclusive of Rajura in 1951-52 to 1955-56 (as shown in EMh/BCAS) to obtain area only under linseed in Nanded. Taking the area under linseed in Nanded in 1956-57 from SCRB we calculate percentage variation in area under

the crop in the district from year to year during the period 1951-52 to 1956-57. Using these percentages we obtain area under the crop in Rajura taluka every year in the relevant period. The following table shows the area under the crops in Rajura taluka from 1951-52 to 1955-56.

TABLE 7.2 : AREA UNDER CROPS IN RAJURA TALUKA

(Figures in hundred acres)

Crops	1951- 52	1952- 53	1953- 54	1954- 55	1955- 56
1. Rice	20	18	22	27	30
2. Wheat	26	29	44	60	85
3. Jowar	491	646	639	689	705
4. Total cereals	554	703	723	782	825
5. Gram	16	15	18	23	26
6. Tur	86	75	74	71	72
7. Total pulses	359	340	378	313	316
8. Cotton	365	389	389	366	371
9. Sesamum	234	281	251	238	159
10. Linseed	122	105	124	153	193
Total (4+7+8 +9+10)	1634	1818	1865	1852	1864

We shall obtain the area under each crop in Chanda in years 1951-52 to 1955-56 from sources to be cited

later in connection with estimates for all the Vidarbha districts. These figures of area relating to Chanda (exclusive of Rajura taluka) will be raised by the appropriate amounts shown in Table 7.2.

The estimates of area under residuary cereals and pulses need further consideration. In the area tables at the end of this chapter we show a breakdown of cereals into rice, wheat, jowar, bajri, maize, ragi and 'other cereals'. In the above table for Rajura taluka however cereals other than rice, wheat and jowar are implicitly lumped together as 'other cereals'. Area under 'other cereals' in the table is quite small. We shall therefore not take the trouble of allocating this area separately as between bajri, maize, ragi and the remaining cereals. The whole of it will be shown under 'other cereals' in the area table at the end of this chapter.

The problem of distributing area under pulses other than gram and tur in Rajura taluka (which is seen to be relatively large in Table 7.2) as between udid, lakh and the residuary pulses, still remains. We shall follow the same method as was used in the adjustment of data on area under pulses other than gram and tur in 1956-57, 1957-58 and 1958-59.

It is now necessary to estimate outturn of crops in

Rajura taluka in order to raise the relevant figures of outturn in Chanda district. Outturn data relating to the taluka in the years 1951-52 to 1955-56 have been included in EMh/BCAS in the tables of outturn of crops in Nanded. In the absence of separate data on average yield in the taluka it seems unavoidable to use average yield figures for Nanded (given in EMh/BCAS) to obtain outturn estimates for the taluka. If however there were any reason to believe that the average yield of a crop in the taluka diverged significantly from that in Nanded district the method of using Nanded figures would be open to serious objection. We can derive area and outturn of crops in Rajura taluka in 1956-57, 1957-58 and 1958-59 with the help of data in the BCAS and SCRB. It is thus possible to obtain figures of yield per acre in the taluka. A comparison between yield per acre of the relevant crops respectively in the taluka and in Nanded district (drawn from EMh, which gives data for Nanded inclusive of Rajura) is presented in Table 7.3.

Two points seem to emerge from the preceding table. It is not possible to say with regard to respective yield per acre of most of the crops that the taluka figure was consistently higher or lower than the district one. Further, the divergence between the average yield of a crop in the taluka and that in the district need not be treated

TABLE 7.3 : YIELD PER ACRE OF CROPS IN NANDED DISTRICT
AND RAJURA TALUKA

(Yield per acre in lbs.)

Crops	1956-57		1957-58		1958-59	
	Dis- trict	Taluka	Dis- trict	Taluka	Dis- trict	Taluka
Rice	432	461	381	395	322	320
Wheat	406	404	161	156	438	435
Jowar	653	605	436	447	515	548
Total cereals	616	580	414	419	493	527
Gram	258	306	314	306	211	213
Tur	394	399	287	276	394	404
Total pulses	266	244	247	216	265	231
Cotton (lint)	42	42	65	66	76	77
Sesamum	120	124	110	111	118	115
Linseed	200	201	198	190	198	192

N.B.: Yield per acre of linseed in Nanded district is taken from SCRB as EMh gives figures for rape, mustard and linseed together.

as significant. This is particularly so in view of the fact that the average yield is to be multiplied into the area under a crop in the taluka which was itself quite small and hence the probable margin of error seems to be limited. We shall derive the outturn of a crop in Rajura taluka in a year by means of the average yield of the crop in that year in Nanded district as shown in EMh/BCAS.

In the case of cereals the problem of allocating combined outturn of cereals other than rice, wheat and jowar among bajri, maize, ragi and other cereals is ignored. For distributing the outturn of pulses other than gram and tur among udid, lakh and other pulses we adopt the same method as we did in the case of estimates for 1956-57, 1957-58 and 1958-59. As for linseed we use the composite average yield of rape, mustard and linseed in Nanded district as shown in EMh/BCAS. It is seen from SCRB, 1956-57, 1957-58 and 1958-59 that in Nanded district (inclusive of Rajura taluka) linseed accounted for 97 to 98 per cent of the combined area under rape, mustard and linseed. The estimated outturn of crops in Rajura taluka in the years 1951-52 to 1955-56 is shown in Table 7.4.

We shall raise by figures in Table 7.4 the outturn

TABLE 7.4 : OUTTURN OF CROPS IN RAJURA TALUKA

(Figures in hundred tons)

Crops	1951- 52	1952- 53	1953- 54	1954- 55	1955- 56
Rice	5	3	4	10	5
Wheat	4	7	6	12	16
Jowar	65	199	102	173	97
Bajri	-	-	-	-	-
Maize	-	-	-	-	-
Ragi	-	-	-	-	-
Other cereals	2	-	-	1	-
Gram	1	2	2	3	3
Tur	15	14	13	14	9
Udid	10	9	13	9	6
Lakh	-	-	-	-	-
Other pulses	21	19	27	17	13
Cotton (lint)	10	8	6	7	4
Sesamum	4	6	4	5	2
Linseed	10	8	11	14	12

of the respective crops in Chanda as drawn from sources to be referred to presently in connection with preparation of estimates for Vidarbha districts.

For estimation of area and outturn of crops in the districts of Vidarbha we shall rely principally on the SCRs. The acceptance of SCRB as the basic source made us adopt in the case of Konkan and Deccan districts the figures published with minor corrections in EMh/BCAS for the principal crops. The position with regard to Vidarbha districts is somewhat different for the years 1951-52 to 1955-56. The main source of data for the years 1956-57, 1957-58 and 1958-59 is the SCRB itself as Vidarbha formed a part of the reorganised Bombay State. We take from BCAS area and outturn of the following crops in these three years: rice, wheat, jowar, bajri, ragi, total cereals, gram, tur, total pulses, sugarcane, groundnut, sesamum and tobacco. The outturn of rice is converted into that of paddy on the basis of the ratio specified in Chapter IV. Cotton is left out here as the problem of estimates relating to cotton for all the eight years will be considered separately later. It has been pointed out that the BCAS figures for 1956-57, 1957-58 and 1958-59 ^{the} in/case of Chanda relate to the expanded district.

Area and outturn of the following crops in 1956-57, 1957-58 and 1958-59 are taken from the SCRB: maize, udid, lakh,³ chillies, potatoes, rape and mustard, linseed and

³The outturn of lakh is estimated with the help of data on average yield by annewari method given in SCRB.

castor. However, it has already been mentioned that the source of area and outturn of maize, chillies and castor in Chanda in 1957-58 and 1958-59 would be SAMh, 1960-61. Similarly, data on udid in the same district have also to be adjusted. The fact that SCRB data for Chanda for the remaining crops are unadjusted is of little consequence as BCAS gives corrected figures for crops that probably accounted for almost the whole of the gross cropped area in Rajura taluka. It will be seen from Table 6.1 (p. 207) that the crops cited thus far, i.e. those coming under categories (a) and (b), accounted for over 96 per cent of the gross cropped area in Vidarbha districts. Area under residuary groups such as 'other condiments and spices', 'miscellaneous foodcrops', 'other fibres', 'other oilseeds', 'other drugs and narcotics', fodder crops, and miscellaneous non-foodcrops are taken from the SCRB. There was no area under 'other sugars' in any of the districts concerned. We shall consider fruits and vegetables later separately.

Data for the year 1951-52 to 1955-56 are on a somewhat different footing. We should ordinarily depend here on SCRMP. But SCRMPs, 1951-52 and 1952-53 do not give any districtwise outturn figures. For these two years we get in SAMP, 1954-55 districtwise figures of area and outturn of rice, wheat, jowar, gram, tur, sugarcane,

sesamum and linseed. The figures in SAMP are based upon the 'primary' publications of the Land Records Department, Government of Madhya Pradesh. A comparison between the figures in SAMP and EMh reveals that though area figures for both the years and those of outturn in 1952-53 are identical in the two publications with very minor discrepancies the figures of outturn in 1951-52 in SAMP do not quite tally with those in EMh. We are told that the EMh figures for Vidarbha upto 1955-56 "are based on the figures either published in the Statistical Abstract of Bombay State, 1957-58, by the Director, Bureau of Economics and Statistics, the Season and Crop Reports of the former Madhya Pradesh State or the figures made available to the Agriculture Department by the Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India."⁴ It seems that in the event of divergence between EMh and SAMP figures it is preferable to adopt the latter. Area and outturn of crops mentioned in this paragraph in 1951-52 and 1952-53 are taken from SAMP, 1954-55. The outturn of rice would be converted into that of paddy on the basis of the ratio of conversion used in the case of Konkan and Deccan districts. In respect of sugarcane the SAMP shows the outturn in

⁴
EMh, p. 1.

1951-52 in every districts as 'nil' whereas according to EMh there was some outturn in every district. Probably the entry in SAMP refers to non-availability of data. We shall take area and outturn of sugarcane in 1951-52 from EMh. It will be noted that area figures in EMh tally exactly with those in SAMP.

Districtwise data on area and outturn of bajri, ragi, groundnut and tobacco for 1951-52 and 1952-53 are available in EMh but not in SAMP. These will be adopted here. EMh also gives area/outturn of rape, mustard and linseed together. We deduct from this the area/outturn of linseed already derived to obtain area/outturn of rape and mustard. From data in EMh it is possible to estimate area/outturn of (i) cereals other than rice, wheat, jowar, bajri and ragi and (ii) pulses other than gram and tur. We obtain area/outturn of maize from MhG, deduct this from area/outturn of the category (i) to get the area/outturn of 'other cereals'. Among pulses other than gram and tur the more important in Vidarbha districts were udid, mug and lakh. The area under lakh districtwise is shown in SCRMP, 1951-52 and 1952-53, which we adopt. SCRMPs, however, do not furnish usable outturn data. SCRMPs, 1953-54, 1954-55 and 1955-56 give area and outturn figures. We obtain a weighted average yield per acre for the three years and use it to estimate outturn

of lakh in 1951-52 and 1952-53.

As regards udid and mug we do not show data for mug separately since it is not possible to get these data for Vidarbha districts upto 1955-56. SCRMPs for 1951-52 and 1952-53 do not show even area data separately for udid. There are combined figures relating to udid, mug and math. The problem is one of allocating area to udid. SCRMPs, 1953-54, 1954-55 and 1955-56 give area and outturn data separately for udid on the one hand and mug and math on the other. We estimate the average proportion which area under udid in each district bears to the combined area under udid, mug and math taken together in the three years. Roughly these proportions are used to obtain from data in SCRMP, 1951-52 and 1952-53 the area under udid in each Vidarbha district. The proportions used for the different districts are tabulated below:

TABLE 7.5 : PROPORTION OF AREA UNDER UDID TO THE
COMBINED AREA UNDER UDID, MUG AND MATH

(Percentages)

Bul- dhana	Akola	Amravati	Yeotmal	Wardha	Nagpur	Bhandara	Chanda
60	70	15	25	2	15	97	50

N.B. The proportion for Chanda is calculated on the basis of area data adjusted for inclusion of Rajura taluka.

The outturn of udid in 1951-52 and 1952-53 in each district is estimated on the basis of the weighted average yield per acre for the three years 1953-54, 1954-55 and 1955-56 which can be derived from SCRMP data. By deducting area/outturn of udid and lakh together from area/outturn of 'pulses other than gram and tur' we get data for 'other pulses' in 1951-52 and 1952-53.

MhG gives data on area/outturn of potatoes, chillies and castor seed. Those for 1951-52 and 1952-53 will be adopted. Finally, in order to derive area under residuary crops in the different categories we require total area under the respective categories, such as for example, 'fibres', 'oilseeds' etc. The total area under 'oilseeds' and 'fibres' is taken from SAMP⁵ and that under 'condiments and spices' from SCRMP. Area under 'other sugars' was 'nil'. Area under fodder crops and under miscellaneous food and non-food crops is taken from SCRMP. Fruits and vegetables as a category will be dealt with later. Suitable adjustments are made in estimates for Chanda district.

A comparison between SCRMP and BCAS area/outturn

5

Area under 'other oilseeds' in Chanda in 1952-53 is derived from data in IAS as the relevant SAMP figure appears to be a misprint.

data for the remaining three years, i.e., 1953-54, 1954-55 and 1955-56, shows several discrepancies. We shall adopt the estimates in SCRMP deriving outturn of rice by means of the ratio already specified. This publication does not give outturn of: (i) ragi, (ii) 'other cereals' (exclusive of rice, wheat, jowar, bajri, maize and ragi), (iii) pulses other than gram, tur, urid, and lakh, (iv) chillies and (v) tobacco. Data on area and outturn of ragi are taken from BCAS. Those relating to (ii) and (iii) are derived with the help of BCAS which gives data on 'total cereals' and 'total pulses'. Area and outturn of chillies in 1953-54 are taken from MhG and in 1954-55 and 1955-56 from SAB (1957-58). BCAS^{is} depended upon for data on tobacco. SCRMP is used for area under the residuary categories. The respective figures for Chanda will be raised to allow for the inclusion of Rajura taluka.

In the case of fruits and vegetables we have area data in SCRMP and SCRB for the whole period 1951-52 to 1958-59. SCRMPs, 1951-52 and 1952-53 give area data separately for orange, potato and onions only whereas SCRMPs for the remaining three years show a more detailed breakdown. The breakdown in SCRB is still more elaborate. It will be noted that fruits and vegetables is a category of little importance in Vidarbha districts. According to

available sources of data it accounted for 1 percent or less of the area under food crops in each district except Nagpur where the corresponding proportion was in the neighbourhood of 3 percent. The most important crop under this category in Nagpur was orange.

Area under orange upto 1955-56 is taken from SCRMP and for the remaining three years from SCRB. Data on yield per acre can be obtained in two publications: (i) a report on marketing of orange published by the Government of Madhya Pradesh⁶ and (ii) BCAS. The former gives yield in the Madhya Pradesh State as a whole. This fact, however, would not present the main difficulty in accepting the yield data since Vidarbha was the predominant orange-growing region in the former Madhya Pradesh State. But the information in this publication was based upon enquiries made with experienced orange growers and hence would be quite rough in character. On the other hand, BCAS gives yield data respectively for the districts of Nagpur, Wardha, Bhandara and Amravati pertaining to the years, 1958-59, 1959-60 and 1960-61. The data are based upon pilot sample surveys. These data should, therefore, be preferable. However, it will be explained in Chapter

⁶ P.B.Dixit: Report on the Marketing of Agricultural Commodities, No. 6, Orange (Government of Madhya Pradesh, Agriculture Department, 1955).

IX that data on prices of oranges in Nagpur district are extremely unsatisfactory. The tables at the end of this chapter, therefore, show only the data on area under oranges in Nagpur.

We take area under potato from SCRMPs, 1951-52 to 1955-56 and SCRBs, 1956-57 to 1958-59. Data on outturn are available for the years 1953-54 to 1958-59 in the respective SCRs. SCRMPs 1951-52 and 1952-53 do not give outturn data. The relevant figures for the years 1953-54 to 1958-59 indicate that the outturn of the crop was yielded only in Nagpur and Bhandara. SAB (1957-58) gives combined figures of outturn for all the Vidarbha districts in 1951-52 and 1952-53. These are in fact figures for Nagpur and Bhandara together. The combined outturn in the two districts was 8 (hundred) tons in 1951-52 and 10 (hundred) tons in 1952-53. Considering the division of outturn in Vidarbha between the two districts in the remaining six years we assume that outturn in Nagpur in each of the two years was 2 (hundred) tons, the residue being the outturn in Bhandara in the respective years. Area data in respect of 'other fruits and vegetables' for the first two years are derived from IAS (Vol. II), 1952-53 and 1953-54, for the next three years, from SCRMP and for the last three, from SCRB by using data on total area under fruits and vegetables.

The SCRs give area under cotton in all the eight years but outturn in the years 1953-54 to 1958-59. The EMh/BCAS provide figures of area and outturn of the crop throughout the period under review. As we mentioned in an earlier chapter ICCC publishes annual estimates of production of cotton by trade blocks. Since the districts of Vidarbha are an important cotton-growing tract in Maharashtra it would be proper to consider whether the official estimates could be corrected in the light of ICCC data.

Vidarbha districts were included in the trade block of Madhya Pradesh State upto 1955-56 and in that of the reorganized Bombay State in the remaining three years. We show below the divergence between ICCC estimates regarded as nearer the actual and corresponding official estimates specified in ICCC annual reports. The data upto 1955-56 relate to Madhya Pradesh and thereafter to the reorganized Bombay State. (Table 7.6 on page 237).

The proportion of divergence was markedly high in some of the years. Clearly the cause of divergence upto 1955-56 must be located mainly in the data for Vidarbha since this was the major cotton-growing region in the old Madhya Pradesh State. Thus, for example, the outturn data in SCRMP upto 1955-56 show that the production of cotton in Vidarbha constituted about 88 percent of the

TABLE 7.6 : OUTTURN OF COTTON (LINT)

(Figures of outturn in thousand bales of 392 lbs. each)

Year	Type of estimates		
	ICCC estimates	Official estimates	Proportion of divergence
1951-52	988	780	+ 27.9
1952-53	636	653	- 2.6
1953-54	732	678	+ 8.0
1954-55	820	670	+ 22.4
1955-56	565	453	+ 24.7
1956-57	2,194	2,176	+ 0.8
1957-58	2,433	2,201	+ 10.5
1958-59	2,580	2,481	+ 4.0

N.B. : The proportion of divergence shows the percentage by which the ICCC estimate was higher (+) or lower (-) than the corresponding official estimate%.

outturn of the crop in the whole State. Probably it would not be wise to use the proportions in Table 7.6 to alter the estimates of outturn in all the Vidarbha districts in the years 1951-52 to 1955-56. The important cotton-growing districts of Vidarbha are Akola, Amravati, Buldhana,

Yeotmal and Wardha. The three years in which the proportion of divergence was marked are 1951-52, 1954-55 and 1955-56. It may be appropriate to raise the outturn of cotton respectively in the five districts in 1951-52, 1954-55 and 1955-56 by, say, 20 percent.

As for the three years, 1956-57, 1957-58 and 1958-59, the proportion of divergence was relatively low. Further, Vidarbha formed a part of the reorganised Bombay State in which there were many other important cotton-growing regions besides the five Vidarbha districts. We cannot, therefore, say definitely that the divergence between the two estimates for the reorganised Bombay State were due to estimational errors in Vidarbha data. We shall, therefore, leave the ICCC estimates out of consideration. Thus we take figures of area and outturn of cotton in 1951-52 and 1952-53 from EMh, those for 1953-54, 1954-55 and 1955-56 from SCRMP and those for 1956-57, 1957-58 and 1958-59 from BCAS. The outturn in 1951-52, 1954-55 and 1955-56 in the five districts already mentioned would be raised by 20 percent. The figures for Chanda would be raised to the extent specified earlier to allow for the inclusion of Rajura taluka.

Lastly, the outturn data in official publications relate to cotton (lint) whereas we need to estimate outturn of kapas (i.e. seed-cotton). From unpublished

official sources we have obtained the conversion ratios between kapas and lint in Vidarbha districts as set out in the table below :

TABLE 7.7 : OUTTURN OF LINT-COTTON PER 100 UNITS OF
OUTTURN OF KAPAS IN VIDARBHA DISTRICTS

Bul- dhana	Akola	Amravati	Yeotmal	Wardha	Nagpur	Chanda
37.4	37.5	36.7	34.8	34.6	34.5	34.0

N.B.: Bhandara is left out as the district does not grow any cotton

Using the above data we derive outturn of kapas from that of cotton (lint).

Finally, we shall attempt to estimate the outturn of by^eproducts. In the N.S.S. publication No. 32 Vidarbha districts were included in the population zone of Central India. We get data on ratio of outturn of straw to that of the crop in Central India in^{the} case of paddy, jowar and small millets. The first two crops together have yielded a substantial proportion of the outturn of all cereals in the districts concerned. The average of three ratios for paddy comes to 0.76. For jowar the N.S.S. publication

gives kharif and rabi ratios separately. Jowar is mostly a kharif crop in all the Vidarbha districts except Bhandara and Chanda. We use for the six districts an average of kharif ratios in Central India which is 1.78. In Bhandara and Chanda jowar is a largely a rabi crop. The average of rabi ratios is 1.96.

Ragi and maize were absolutely unimportant crops in Vidarbha districts. We make no estimate of the probable outturn of straw from these crops. In the case of wheat and bajri we apply the same ratios as were used for Deccan districts. Among the residuary cereals small millets were the relatively important. We estimate the outturn of straw yielded by 'other cereals' by using an average of the ratios for small millets in Central India, which comes to 0.71. The ratios used in/case of Deccan districts for gram and other pulses (exclusive of gram and tur) will be adopted here also. No deflation is made to allow for wastage or non-collection of straw. Finally, we make use of the same ratios for estimating the outturn of the remaining byproducts except cotton seed as we did in the case of Deccan districts.

Cotton seed is one of the two major components of kapas, the other being lint-cotton. The outturn of lint-cotton was estimated, to begin with. By using data in Table 7.7 we derived the outturn of kapas. From the

outturn of these two it is easy to obtain the outturn of cotton seed which is the difference between the outturn of kapas and that of lint-cotton.

Tables 7.8 to 7.23 show the area and outturn of crops in Vidarbha districts.

TABLE 7.8 : AREA UNDER CROPS IN BULDHANA DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	55	44	41	45	46	49	62	66
Wheat	933	868	893	921	970	1023	1005	945
Jowar	5721	5762	5787	5703	5334	5587	5703	5797
Bajri	223	214	190	188	173	149	149	131
Maize	-	9	6	7	6	7	6	6
Ragi	-	-	-	-	-	-	-	-
Other cereals	80	17	19	15	14	12	10	15
Total cereals	7012	6914	6936	6879	6543	6827	6935	6960
Gram	250	228	221	239	249	235	204	206
Tur	545	543	568	593	588	565	553	570
Udid	553	575	677	669	638	721	824	812
Lakh	19	18	15	16	15	11	14	12
Other pulses	644	688	771	817	695	539	580	537
Total pulses	2011	2052	2252	2334	2185	2071	2175	2137
Total foodgrains	9023	8966	9188	9213	8728	8898	9110	9097
Sugarcane	16	14	10	14	14	16	23	23
Chillies	94	78	83	95	101	107	114	97
Other condiments and spices	6	5	5	5	6	4	4	5
Total condiments and spices	100	83	88	100	107	111	118	102
Potato	-	-	-	-	-	-	-	-
Other fruits and vegetables	52	44	47	43	45	45	49	49
Total fruits and vegetables	52	44	47	43	45	45	49	49
Miscellaneous foodcrops	-	-	-	-	-	-	-	-
Total foodcrops	9191	9107	9333	9370	8894	9070	9300	9271
Cotton	5552	5690	6112	6011	6751	6339	6219	6461
Other fibres	76	86	86	77	89	85	81	87
Total fibres	5628	5776	6198	6088	6840	6424	6300	6548
Groundnut	766	1097	729	803	657	881	966	909
Sesamum	65	64	72	71	68	51	50	56
Rape and mustard	5	8	5	5	4	6	5	6
Linseed	50	40	27	25	30	40	41	34
Castor seed	3	2	2	2	2	2	2	2
Other oilseeds	487	402	472	513	484	468	406	428
Total oilseeds	1376	1613	1307	1419	1245	1448	1470	1435
Tobacco	3	6	7	4	4	2	1	1
Other drugs and narcotics	-	-	-	-	-	2	2	2
Total drugs and narcotics	3	6	7	4	4	4	3	3
Fodder crops	-	1	1	-	1	1	-	-
Miscellaneous non-foodcrops	-	-	-	-	-	-	-	-
Total non-foodcrops	7007	7396	7513	7511	8090	7877	7773	7986
Gross Cropped Area	16198	16503	16846	16881	16984	16947	17073	17257

TABLE 7.9 : OUTTURN OF CROPS IN BULDHANA DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	10	19	10	13	12	28	30	24
Wheat	147	73	132	174	196	203	106	198
Jowar	1542	1085	1504	1911	1233	1671	1316	1205
Bajri	45	30	34	34	30	30	13	16
Maize	-	1	1	1	1	1	1	1
Ragi	-	-	-	-	-	-	-	-
Other cereals	1	1	1	1	1	1	-	2
Total cereals	1745	1209	1682	2134	1473	1934	1466	1446
Gram	42	18	33	37	35	34	17	23
Tur	204	138	313	212	293	181	168	198
Udid	44	45	57	51	48	60	69	68
Lakh	2	2 ^x	1	2	2	1	1	1
Other pulses	13	24 ^x	23	114	55	63	66	60
Total pulses	305	227	427	416	433	339	321	350
Total foodgrains	2050	1436	2109	2550	1906	2273	1787	1796
Sugarcane (gul)	18	13	10	14	14	16	23	23
Chillies	21	5	6	6	6	23	18	16
Potato	-	-	-	-	-	-	-	-
Cotton (Kapas)	718	459	494	629	472	618	735	582
Groundnut	173	150	267	212	144	259	151	167
Sesamum	7	5	7	9	6	4	4	5
Rape and mustard	-	-	-	-	1	1	1	1
Linseed	4	3	2	3	3	4	4	3
Castor seed	-	-	-	-	-	-	-	-
Tobacco	1	1	2	1	1	-	-	-
Straw	3121	2177	3014	3853	2615	3427	2633	2546
Arhar sticks	1361	920	2088	1414	1954	1207	1120	1321
Sesamum sticks (a)	325	320	360	355	340	255	250	280
Cotton seed	449	287	309	394	295	387	460	364
Cotton sticks (a)	55520	56900	61120	60110	67510	63390	62190	64610
Bagasse	4	3	2	3	3	4	5	5
Timber (b)	2	2	4	4	4	3	3	3
Firewood (b)	155	132	274	261	244	185	198	185

(a) In hundred maunds

(b) In thousand cubic feet

× Ordinarily we have derived outturn of 'other pulses' in Vidarbha districts in the years 1951-52 to 1955-56 by deducting from outturn of 'pulses other than gram and tur' obtained from EMh/BCAS that of udid and lakh in the respective tables. However, in this year in Buldhana the combined outturn of udid and lakh drawn from one source turns out to be larger than that of 'pulses other than gram and tur' drawn from another. We, therefore, obtain outturn of 'other pulses' by multiplying into area under 'other pulses' average yield of 'pulses other than gram and tur' estimated from EMh/BCAS data.

TABLE 7.10 : AREA UNDER CROPS IN AKOLA DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	166	155	150	153	157	164	180	181
Wheat	947	951	986	1008	1085	1193	1238	1223
Jowar	6528	6160	6089	6088	5614	5855	5836	6019
Bajri	185	174	183	183	168	156	145	137
Maize	-	-	1	1	1	1	1	1
Ragi	-	-	-	-	-	-	1	-
Other cereals	31	43	41	42	11	24	17	20
Total cereals	7857	7483	7450	7475	7036	7393	7418	7581
Gram	254	259	273	295	312	292	298	303
Tur	708	724	751	754	743	755	745	768
Udid	576	615	625	600	626	636	722	737
Lakh	66	66	66	67	70	56	48	45
Other pulses	322	308	362	373	344	327	310	317
Total pulses	1926	1972	2077	2089	2095	2066	2123	2170
Total foodgrains	9783	9455	9527	9564	9131	9459	9541	9751
Sugarcane	4	3	2	2	3	4	4	4
Chillies	79	69	71	66	91	81	74	73
Other condiments and spices	6	5	6	6	5	6	5	4
Total condiments and spices	85	74	77	72	96	87	79	77
Potato	-	-	-	-	-	-	-	-
Other fruits and vegetables	41	36	40	37	40	46	43	42
Total fruits and vegetables	41	36	40	37	40	46	43	42
Miscellaneous food-crops	-	-	-	-	-	-	1	-
Total foodcrops	9913	9568	9646	9675	9270	9596	9668	9874
Cotton	6576	7014	7245	7637	8053	7861	7882	7815
Other fibres	85	84	86	77	80	79	70	65
Total fibres	6661	7098	7331	7714	8133	7940	7952	7880
Groundnut	1094	1323	1121	1166	1102	1042	1089	1110
Sesamum	79	78	85	92	82	72	71	76
Rape and mustard	3	3	3	4	4	5	5	5
Linseed	154	144	122	116	158	212	203	206
Castor seed	3	3	3	3	3	3	3	2
Other oilseeds	31	30	29	27	37	41	32	29
Total oilseeds	1364	1581	1363	1408	1386	1375	1403	1428
Tobacco	1	1	1	1	2	1	-	-
Other drugs and narcotics	-	-	-	-	-	4	3	3
Total drugs and narcotics	1	1	1	1	2	5	3	3
Fodder crops	1	1	1	1	1	1	2	2
Miscellaneous non-foodcrops	1	1	1	1	1	1	-	1
Total non-foodcrops	8028	8682	8697	9125	9523	9322	9360	9314
Gross Cropped Area	17941	18250	18343	18800	18793	18918	19028	19188

TABLE 7.11 : OUTTURN OF CROPS IN AKOLA DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	34	67	46	43	45	96	88	67
Wheat	167	106	156	198	204	239	119	248
Jowar	1841	1493	1740	1669	1406	2178	1044	1257
Bajri	30	33	35	33	27	31	13	17
Maize	-	-	-	-	-	-	-	-
Ragi	-	-	-	-	-	-	-	-
Other cereals	-	1	2	2	1	2	2	2
Total cereals	2072	1700	1979	1945	1683	2546	1266	1591
Gram	44	19	46	51	48	42	26	33
Tur	362	147	415	304	410	256	267	209
Udid	47	50	50	50	50	62	71	44
Lakh	6	6	6	8	6	8	7	4
Other pulses	44	15 ♦	52	57	29	32	34	20
Total pulses	503	237	569	470	543	400	405	310
Total foodgrains	2575	1937	2548	2415	2226	2946	1671	1901
Sugarcane (gul)	5	3	2	2	3	4	5	4
Chillies	11	15	10	9	12	12	12	9
Potato	-	-	-	-	-	-	-	-
Cotton (kapas)	866	603	622	835	600	811	897	975
Groundnut	231	205	299	308	243	227	174	173
Sesamum	9	6	10	9	8	7	7	7
Rape and mustard	-	-	-	-	1	1	1	1
Linseed	17	13	13	13	18	26	25	21
Castor seed	-	-	-	-	-	-	-	-
Tobacco	-	-	-	-	-	-	-	-
Straw	3682	2987	3521	3445	2946	4416	2228	2698
Arhar sticks	2414	980	2768	2028	2735	1707	1781	1394
Sesamum sticks (a)	395	390	425	460	410	360	355	380
Cotton seed	541	377	389	522	375	507	561	609
Cotton sticks (a)	65760	70140	72450	76370	80530	78610	78820	78150
Bagasse	1	1	-	-	1	1	1	1
Timber (b)	1	1	3	3	2	1	1	1
Firewood (b)	121	105	287	278	179	115	118	96

(a) In hundred maunds

(b) In thousand cubic feet

♦ Estimated in the same way as is explained in a footnote to the table on outturn in Buldhana district (viz., Table 7.9).

TABLE 7.12 : AREA UNDER CROPS IN AMRAVATI DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	103	97	91	85	103	118	125	140
Wheat	832	857	860	919	959	1037	957	863
Jowar	5012	5090	4880	4816	4609	4823	4485	4489
Bajri	155	156	154	154	147	142	133	137
Maize	-	-	-	1	5	1	1	1
Lagi	3	2	4	2	1	2	2	1
Other cereals	78	132	77	63	56	91	70	83
Total cereals	6183	6334	6066	6040	5880	6214	5773	5714
Gram	182	152	149	181	248	218	195	180
Lur	829	853	930	908	894	874	911	927
Udid	71	62	60	57	57	59	63	67
Lakh	23	22	20	21	19	19	16	15
Other pulses	451	389	406	397	376	393	351	334
Total pulses	1556	1478	1565	1564	1594	1563	1536	1523
Total foodgrains	7739	7812	7631	7604	7474	7777	7309	7237
Sugarcane	2	2	1	1	2	3	2	2
Phillies	111	98	91	111	106	154	169	151
Other condiments and spices	52	7	6	7	4	6	8	5
Total condiments and spices	163	105	97	118	110	160	177	156
Potato	-	-	-	-	-	-	-	-
Other fruits and vegetables	90	79	86	95	92	90	92	95
Total fruits and vegetables	90	79	86	95	92	90	92	95
Miscellaneous foodcrops	8	8	6	4	4	-	-	-
Total foodcrops	8002	8006	7821	7822	7682	8030	7580	7490
Cotton	6837	7160	7891	7978	8124	7858	8073	8365
Other fibres	109	115	69	77	77	111	185	73
Total fibres	6946	7275	7960	8055	8201	7969	8258	8438
Groundnut	495	467	298	378	412	373	474	572
Sesamum	101	104	96	89	82	73	83	92
Rape and mustard	2	-	1	1	1	-	1	-
Linseed	136	109	93	109	135	199	194	123
Castor seed	5	3	3	2	3	3	4	3
Other oilseeds	11	13	10	26	18	43	18	15
Total oilseeds	750	696	501	605	651	691	774	805
Tobacco	4	3	5	7	7	4	2	2
Other drugs and narcotics	-	-	-	-	-	7	6	6
Total drugs and narcotics	4	3	5	7	7	11	8	8
Fodder crops	2	3	4	4	4	2	2	6
Miscellaneous non-foodcrops	2	1	1	1	1	-	-	1
Total non-foodcrops	7704	7978	8471	8672	8864	8673	9042	9258
Gross Cropped Area	15706	15984	16292	16494	16546	16703	16622	16748

TABLE 7.13 : OUTTURN OF CROPS IN AMRAVATI DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	22	42	28	24	33	69	61	52
Wheat	140	117	129	180	201	214	98	206
Jowar	1413	1261	1697	1400	1031	1397	866	1048
Bajri	28	24	28	28	21	25	12	17
Maize	-	-	-	-	-	-	-	-
Ragi	-	-	-	-	-	-	-	-
Other cereals	7	11	8	7	6	14	10	13
Total cereals	1610	1455	1890	1639	1292	1719	1047	1336
Gram	30	17	22	31	38	31	19	24
Tur	573	277	565	362	494	329	343	457
Udid	5	4	4	4	4	5	4	5
Lakh	2	2	2	2	2	2	1	1
Other pulses	141	80	132	47	30	62	46	46
Total pulses	751	380	725	446	568	429	413	533
Total foodgrains	2361	1835	2615	2085	1860	2148	1460	1869
Sugarcane (gul)	2	2	1	2	2	3	2	2
Chillies	19	12	11	14	14	86	82	56
Potato	-	-	-	-	-	-	-	-
Cotton (kapas)	1041	664	770	682	570	905	683	955
Groundnut	116	67	87	88	90	121	74	94
Sesamum	11	8	10	9	6	7	11	9
Rape and mustard	-	-	-	-	-	-	-	-
Linseed	14	10	9	12	15	21	15	14
Castor seed	1	-	-	-	-	-	-	-
Tobacco	1	1	1	2	2	1	-	-
Straw	2902	2560	3388	2863	2209	2937	1791	2254
Arhar sticks	3822	1847	3768	2414	3295	2194	2288	3048
Sesamum sticks (a)	505	520	480	445	410	365	415	460
Cotton seed	659	420	487	432	361	573	432	605
Cotton sticks (a)	68370	71600	78910	79780	81240	78580	80730	83650
Bagasse	-	-	-	-	-	1	-	-
Timber (b)	3	3	10	12	21	20	16	17
Firewood (b)	266	243	722	888	1521	1442	1133	1190

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 7.14 : AREA UNDER CROPS IN YEOTMAL DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	266	326	229	210	207	218	236	227
Wheat	341	325	354	392	584	522	462	336
Jowar	6628	6816	6787	6724	6556	6678	6608	6788
Bajri	253	268	273	272	252	242	248	261
Maize	-	-	1	1	1	1	1	-
Ragi	-	-	-	-	-	-	-	-
Other cereals	19	20	13	14	16	21	13	12
Total cereals	7507	7755	7657	7613	7616	7682	7568	7624
Gram	181	151	152	187	295	236	204	200
Tur	889	932	984	984	974	990	1000	1026
Udid	235	246	270	273	259	254	247	243
Lakh	23	20	21	20	28	23	21	22
Other pulses	757	808	806	802	790	748	731	764
Total pulses	2085	2157	2233	2266	2346	2251	2203	2255
Total foodgrains	9592	9912	9890	9879	9962	9933	9771	9879
Sugarcane	12	9	6	5	5	5	5	6
Chillies	93	91	86	85	88	87	92	87
Other condiments and spices	8	8	7	6	7	4	8	6
Total condiments and spices	101	99	93	91	95	91	100	93
Potato	-	-	-	-	-	-	-	-
Other fruits and vegetables	63	55	54	54	54	49	49	48
Total fruits and vegetables	63	55	54	54	54	49	49	48
Miscellaneous foodcrops	-	-	-	-	-	-	-	-
Total foodcrops	9768	10075	10043	10029	10116	10078	9925	10026
Cotton	5815	5840	6269	6383	6573	6750	6967	7103
Other fibres	145	162	144	136	138	126	118	117
Total fibres	5960	6002	6413	6519	6711	6876	7085	7220
Groundnut	932	981	904	893	799	711	760	709
Sesamum	233	253	256	277	251	181	169	182
Rape and mustard	3	3	3	4	5	5	4	5
Linseed	165	140	124	159	219	206	194	180
Castor seed	7	7	6	4	5	3	3	3
Other oilseeds	7	13	5	6	14	7	9	11
Total oilseeds	1347	1397	1298	1343	1293	1113	1139	1090
Tobacco	1	2	2	1	2	2	2	1
Other drugs and narcotics	-	-	-	-	-	-	-	-
Total drugs and narcotics	1	2	2	1	2	2	2	2
Fodder crops	-	-	-	-	-	-	1	-
Miscellaneous non-foodcrops	-	-	-	-	-	-	-	-
Total non-foodcrops	7308	7401	7713	7863	8006	7991	8227	8312
Gross Cropped Area	17076	17476	17756	17892	18122	18069	18152	18338

TABLE 7.15 : OUTTURN OF CROPS IN YEOTMAL DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	63	103	58	54	52	129	114	84
Wheat	49	47	62	76	95	48	47	71
Jowar	2025	2319	1648	1912	1009	2250	1362	1428
Bajri	50	54	50	52	20	46	22	33
Maize	-	-	-	-	-	-	-	-
Ragi	-	-	-	-	-	-	-	-
Other cereals	1	-	-	1	-	2	1	1
Total cereals	2188	2523	1818	2095	1176	2475	1546	1617
Gram	28	18	25	33	37	34	17	22
Tur	534	816	599	415	353	468	471	399
Udid	16	16	20	21	13	19	19	12
Lakh	2	2	2	2	3	2	2	2
Other pulses	116	225	125	99	42	59	58	41
Total pulses	696	1077	771	570	448	582	567	476
Total foodgrains	2884	3600	2589	2665	1624	3057	2113	2093
Sugarcane (gul)	13	9	6	5	4	5	5	6
Chillies	33	20	17	17	18	17	17	18
Potato	-	-	-	-	-	-	-	-
Cotton (kapas)	896	563	484	737	342	714	716	530
Groundnut	236	165	224	179	124	191	94	104
Sesamum	24	24	23	25	19	16	15	15
Rape and mustard	-	-	-	-	1	1	1	1
Linseed	15	13	13	18	21	21	19	16
Castor seed	1	1	1	1	1	-	-	-
Tobacco	-	-	-	-	-	-	-	-
Straw	3961	4591	3306	3785	2071	4368	2695	2834
Arhar sticks	3562	5443	3995	2768	2354	3121	3141	2661
Sesamum sticks (a)	1165	1265	1280	1385	1255	905	845	910
Cotton seed	584	367	315	480	223	465	467	345
Cotton sticks (a)	58150	58400	62690	63830	65730	67500	69670	71030
Bagasse	3	2	1	1	1	1	1	1
Timber (b)	3	3	64	64	37	32	31	28
Firewood (b)	201	175	4267	4267	2454	2132	2064	1894

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 7.16 : AREA UNDER CROPS IN WARDHA DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952- 53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	56	35	23	22	27	43	39	44
Wheat	788	823	928	981	1075	1095	1030	929
Jowar	3372	3348	3309	3330	3225	3359	3100	3405
Bajri	1	1	1	1	1	1	4	36
Maize	-	-	-	-	-	-	-	-
Ragi	-	-	-	-	-	-	-	-
Other cereals	3	1	1	-	-	2	1	-
Total cereals	4220	4208	4262	4334	4328	4500	4174	4414
Gram	79	64	65	105	127	98	86	73
Tur	595	671	696	678	678	642	717	682
Udid	9	9	20	4	2	2	8	2
Lakh	20	19	20	20	23	20	14	11
Other pulses	482	480	478	464	452	465	428	470
Total pulses	1185	1243	1279	1271	1282	1227	1253	1238
Total foodgrains	5405	5451	5541	5605	5610	5727	5427	5652
Sugarcane	1	1	1	1	1	1	2	1
Chillies	67	42	39	48	50	62	63	57
Other condiments and spices	4	5	5	4	9	8	6	6
Total condiments and spices	71	47	44	52	59	70	69	63
Potato	-	-	-	-	-	-	-	-
Other fruits and vegetables	63	59	60	59	61	61	65	68
Total fruits and vegetables	63	59	60	59	61	61	65	68
Miscellaneous foodcrops	-	1	-	-	-	1	-	-
Total foodcrops	5540	5559	5646	5717	5731	5860	5563	5784
Cotton	3172	3675	3889	3746	3704	3456	3930	3875
Other fibres	30	24	14	13	32	40	11	11
Total fibres	3202	3699	3903	3759	3736	3496	3941	3886
Groundnut	100	91	46	42	34	36	41	47
Sesamum	173	208	171	188	77	168	188	258
Rape and mustard	-	-	-	-	-	-	-	-
Linseed	276	195	236	277	300	329	303	200
Castor seed	5	4	5	4	3	3	3	2
Other oilseeds	-	4	-	-	-	-	-	-
Total oilseeds	554	502	458	511	414	536	535	507
Tobacco	-	-	-	1	-	-	-	-
Other drugs and narcotics	-	-	-	1	-	-	-	-
Total drugs and narcotics	-	-	-	2	-	-	-	-
Fodder crops	114	86	12	11	7	6	6	15
Miscellaneous non- foodcrops	-	-	-	-	-	-	1	-
Total non-foodcrops	3870	4287	4373	4283	4157	4038	4483	4408
Gross Cropped Area	9410	9846	10019	10000	9888	9898	10046	10192

TABLE 7.17 : OUTTURN OF CROPS IN WARDHA DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	13	15	7	6	10	25	19	16
Wheat	133	152	165	195	208	186	121	146
Jowar	910	1013	982	930	489	909	567	776
Bajri	-	-	-	-	-	-	-	5
Maize	-	-	-	-	-	-	-	-
Ragi	-	-	-	-	-	-	-	-
Other cereals	-	-	-	-	-	-	-	-
Total cereals	1056	1180	1154	1131	707	1120	707	943
Gram	14	7	10	18	20	14	7	10
Tur	642	179	423	273	375	270	273	324
Udid	1	1	2	-	-	-	1	-
Lakh	2	2	2	2	3	-	1	-
Other pulses	157	51	98	52	37	45	29	37
Total pulses	816	240	535	345	435	329	311	371
Total foodgrains	1872	1420	1689	1476	1142	1449	1018	1314
Sugarcane (gul)	1	1	1	1	1	2	2	1
Chillies	9	7	7	8	8	1	10	11
Potato	-	-	-	-	-	-	-	-
Cotton (kapas)	406	356	302	346	157	326	258	238
Groundnut	23	17	12	10	8	12	6	8
Sesamum	18	21	14	17	7	19	19	26
Rape and mustard	-	-	-	-	-	-	-	-
Linseed	28	20	26	28	30	26	30	22
Castor seed	1	-	1	1	-	-	-	-
Tobacco	-	-	-	-	-	-	-	-
Straw	1907	2034	2023	1939	1163	1895	1191	1609
Arhar sticks	4282	1194	2821	1821	2501	1801	1821	2161
Sesamum sticks (a)	865	1040	855	940	385	840	940	1040
Cotton seed	265	233	197	226	103	213	169	156
Cotton sticks (a)	31720	36750	38890	37460	37040	34560	39300	38750
Bagasse	-	-	-	-	-	-	-	-
Timber (b)	40	30	21	21	21	19	16	15
Firewood (b)	2641	1961	1380	1380	1383	1268	1075	1036

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 7.18 : AREA UNDER CROPS IN NAGPUR DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	459	390	421	437	447	476	484	494
Wheat	1283	1392	1532	1672	1891	2053	1836	1650
Jowar	5747	5692	5754	5478	5481	5409	5465	5851
Bajri	7	6	8	6	6	6	8	10
Maize	-	5	5	5	5	5	5	5
Ragi	-	-	-	-	-	-	-	-
Other cereals	8	4	5	5	5	4	3	2
Total cereals	<u>7504</u>	<u>7489</u>	<u>7725</u>	<u>7603</u>	<u>7835</u>	<u>7953</u>	<u>7801</u>	<u>8012</u>
Gram	192	173	173	215	256	272	232	213
Tur	1041	1162	1268	1174	1175	1040	1123	1187
Udid	11	10	10	10	9	13	15	21
Lakh	301	285	304	296	305	301	284	277
Other pulses	192	163	149	119	118	109	110	105
Total pulses	<u>1737</u>	<u>1793</u>	<u>1904</u>	<u>1814</u>	<u>1863</u>	<u>1735</u>	<u>1764</u>	<u>1803</u>
Total foodgrains	<u>9241</u>	<u>9282</u>	<u>9629</u>	<u>9417</u>	<u>9698</u>	<u>9688</u>	<u>9565</u>	<u>9815</u>
Sugarcane	2	1	1	1	1	1	2	1
Chillies	188	216	255	301	343	328	403	427
Other condiments and spices	76	28	25	25	33	44	28	28
Total condiments and spices	<u>264</u>	<u>244</u>	<u>280</u>	<u>326</u>	<u>376</u>	<u>372</u>	<u>431</u>	<u>455</u>
Orange	212	201	182	173	174	172	179	178
Potato	1	3	2	1	1	1	1	1
Other fruits and vegetables	95	81	93	85	94	97	109	119
Total fruits and vegetables	<u>308</u>	<u>285</u>	<u>277</u>	<u>259</u>	<u>269</u>	<u>270</u>	<u>289</u>	<u>298</u>
Miscellaneous food-crops	-	1	2	3	3	4	5	6
Total foodcrops	<u>9815</u>	<u>9813</u>	<u>10189</u>	<u>10006</u>	<u>10347</u>	<u>10335</u>	<u>10292</u>	<u>10575</u>
Cotton	1341	1617	1840	1961	1964	1649	1650	1644
Other fibres	50	53	32	23	43	35	16	23
Total fibres	<u>1391</u>	<u>1670</u>	<u>1872</u>	<u>1984</u>	<u>2007</u>	<u>1684</u>	<u>1666</u>	<u>1667</u>
Groundnut	117	174	140	190	105	106	149	166
Sesamum	221	290	290	315	126	210	211	322
Rape and mustard	-	-	-	-	-	-	-	-
Linseed	611	575	569	643	572	808	834	583
Castor seed	8	8	8	7	5	5	4	4
Other oilseeds	1	9	1	1	-	1	1	-
Total oilseeds	<u>958</u>	<u>1056</u>	<u>1008</u>	<u>1156</u>	<u>808</u>	<u>1130</u>	<u>1199</u>	<u>1075</u>
Tobacco	2	9	20	27	34	12	3	3
Other drugs and narcotics	-	-	-	-	-	-	-	-
Total drugs and narcotics	<u>2</u>	<u>9</u>	<u>20</u>	<u>27</u>	<u>34</u>	<u>12</u>	<u>3</u>	<u>3</u>
Fodder crops	184	161	6	4	7	5	3	4
Miscellaneous non-foodcrops	1	1	1	1	1	1	3	1
Total non-foodcrops	<u>2536</u>	<u>2897</u>	<u>2907</u>	<u>3172</u>	<u>2857</u>	<u>2832</u>	<u>2874</u>	<u>2750</u>
Gross Cropped Area	<u>12351</u>	<u>12710</u>	<u>13096</u>	<u>13178</u>	<u>13204</u>	<u>13167</u>	<u>13166</u>	<u>13325</u>

TABLE 7.19 : OUTTURN OF CROPS IN NAGPUR DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	204	169	238	244	309	279	208	297
Wheat	243	269	249	307	341	353	173	278
Jowar	1216	1186	1719	1221	886	1155	806	1068
Bajri	1	1	1	1	1	2	1	1
Maize	-	1	1	1	1	1	1	1
Ragi	-	-	-	-	-	-	-	-
Other cereals	1	-	-	-	-	-	-	-
Total cereals	<u>1665</u>	<u>1626</u>	<u>2208</u>	<u>1774</u>	<u>1538</u>	<u>1790</u>	<u>1189</u>	<u>1645</u>
Gram	37	23	31	40	42	39	22	22
Tur	595	786	1056	571	612	368	186	339
Udid	-	-	-	-	-	1	1	2
Lakh	29	28	31	30	27	31	27	24
Other pulses	126	207	225	17	8	10	11	10
Total pulses	<u>787</u>	<u>1044</u>	<u>1343</u>	<u>658</u>	<u>689</u>	<u>449</u>	<u>247</u>	<u>397</u>
Total foodgrains	<u>2452</u>	<u>2670</u>	<u>3551</u>	<u>2432</u>	<u>2227</u>	<u>2239</u>	<u>1436</u>	<u>2042</u>
Sugarcane (gul)	2	1	1	1	1	1	2	2
Chillies	25	15	23	27	26	20	29	34
Potato	2	2	3	2	2	3	3	2
Cotton (kapas)	143	157	179	167	76	101	122	112
Groundnut	41	43	46	68	34	12	23	27
Sesamum	22	29	29	32	10	23	24	36
Rape and mustard	-	-	-	-	-	-	-	-
Linseed	52	49	54	61	48	84	78	55
Castor seed	1	1	1	1	1	1	1	1
Tobacco	1	2	5	7	6	3	1	1
Straw	2743	2737	3737	2782	2269	2743	1842	2495
Arhar sticks	3969	5243	7043	3808	4082	2454	1241	2261
Sesamum sticks (a)	1105	1450	1450	1575	630	1050	1055	1610
Cotton seed	94	103	117	109	50	66	80	73
Cotton sticks (a)	13410	16170	18400	19610	19640	16490	16500	16440
Bagasse	-	-	-	-	-	-	-	-
Timber (b)	108	193	23	21	21	16	16	16
Firewood (b)	7463	13374	1591	1457	1457	1129	1136	1113

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 7.20 : AREA UNDER CROPS IN BHANDARA DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	5921	5977	6081	6120	6139	6133	6242	6307
Wheat	575	590	609	661	751	819	727	728
Jowar	981	1068	1054	1036	981	978	963	989
Bajri	-	-	-	-	-	-	-	-
Maize	23	23	30	30	29	27	27	27
Ragi	3	4	4	4	4	5	5	4
Other cereals	102	150	187	196	194	178	155	130
Total cereals	<u>7605</u>	<u>7812</u>	<u>7965</u>	<u>8047</u>	<u>8098</u>	<u>8140</u>	<u>8119</u>	<u>8185</u>
Gram	265	269	307	331	353	345	297	265
Tur	117	145	171	156	162	140	144	158
Udid	572	592	460	484	460	479	446	606
Lakh	1210	1195	1219	1278	1324	1379	1139	1266
Other pulses	272	264	299	292	266	253	227	228
Total pulses	<u>2436</u>	<u>2465</u>	<u>2456</u>	<u>2541</u>	<u>2565</u>	<u>2596</u>	<u>2253</u>	<u>2523</u>
Total foodgrains	<u>10041</u>	<u>10277</u>	<u>10421</u>	<u>10588</u>	<u>10663</u>	<u>10736</u>	<u>10372</u>	<u>10708</u>
Sugarcane	26	29	25	26	24	24	24	18
Chillies	87	87	101	98	102	99	103	109
Other condiments and spices	10	10	10	11	12	13	10	10
Total condiments and spices	<u>97</u>	<u>97</u>	<u>111</u>	<u>109</u>	<u>114</u>	<u>112</u>	<u>113</u>	<u>119</u>
Potato	3	3	4	4	3	4	4	4
Other fruits and vegetables	59	56	77	76	78	63	64	69
Total fruits and vegetables	<u>62</u>	<u>59</u>	<u>81</u>	<u>80</u>	<u>81</u>	<u>67</u>	<u>68</u>	<u>73</u>
Miscellaneous foodcrops	-	3	2	2	3	3	5	2
Total foodcrops	<u>10226</u>	<u>10465</u>	<u>10640</u>	<u>10805</u>	<u>10885</u>	<u>10942</u>	<u>10582</u>	<u>10920</u>
Cotton	-	1	-	-	-	-	-	-
Other fibres	18	24	23	19	31	21	17	19
Total fibres	<u>18</u>	<u>25</u>	<u>23</u>	<u>19</u>	<u>31</u>	<u>21</u>	<u>17</u>	<u>19</u>
Groundnut	14	19	15	16	16	16	16	16
Sesamum	12	15	22	23	20	18	15	14
Rape and mustard	1	1	-	-	1	1	1	1
Linseed	626	765	1229	1284	1350	1460	1002	1391
Castor seed	6	3	5	4	4	4	3	2
Other oilseeds	-	3	2	2	-	2	-	1
Total oilseeds	<u>659</u>	<u>806</u>	<u>1273</u>	<u>1329</u>	<u>1391</u>	<u>1501</u>	<u>1037</u>	<u>1425</u>
Tobacco	-	-	1	1	1	-	-	-
Other drugs and narcotics	-	-	-	-	-	-	-	-
Total drugs and narcotics	-	-	<u>1</u>	<u>1</u>	<u>1</u>	-	-	-
Fodder crops	70	74	85	83	-	1	-	-
Miscellaneous non-foodcrops	747	905	1382	1432	1423	1523	1054	1444
Total non-foodcrops	<u>747</u>	<u>905</u>	<u>1382</u>	<u>1432</u>	<u>1423</u>	<u>1523</u>	<u>1054</u>	<u>1444</u>
Gross Cropped Area	<u>10973</u>	<u>11370</u>	<u>12022</u>	<u>12237</u>	<u>12308</u>	<u>12465</u>	<u>11636</u>	<u>12364</u>

TABLE 7.21 : OUTTURN OF CROPS IN BHANDARA DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	2689	2482	2644	3072	3795	3664	3205	4078
Wheat	92	101	119	150	54	63	77	98
Jowar	162	222	149	218	275	154	178	161
Bajri	-	-	-	-	-	-	-	-
Maize	3	3	5	4	4	4	3	4
Ragi	-	-	-	-	-	1	1	1
Other cereals	30	18	19	18	19	22	16	13
Total cereals	<u>2976</u>	<u>2826</u>	<u>2936</u>	<u>3462</u>	<u>4147</u>	<u>3908</u>	<u>3480</u>	<u>4355</u>
Gram	39	42	52	53	51	49	38	27
Tur	77	67	113	75	98	20	22	41
Udid	51	53	42	44	39	45	34	52
Lakh	145	143	151	158	149	132	106	146
Other pulses	4 ⁺	4 ⁺	6 ⁺	26	24 ⁺	28	17	23
Total pulses	<u>316</u>	<u>309</u>	<u>364</u>	<u>356</u>	<u>361</u>	<u>274</u>	<u>217</u>	<u>289</u>
Total foodgrains	<u>3292</u>	<u>3135</u>	<u>3300</u>	<u>3818</u>	<u>4508</u>	<u>4182</u>	<u>3697</u>	<u>4644</u>
Sugarcane (gul)	32	32	31	31	29	29	30	21
Chillies	29	29	21	31	26	16	17	18
Potato	6	8	8	7	7	7	7	7
Cotton (kapas)	-	-	-	-	-	-	-	-
Groundnut	4	7	4	7	7	7	3	3
Sesamum	1	2	3	3	2	2	2	2
Rape and mustard	-	-	-	-	-	-	-	-
Linseed	46	51	91	95	100	90	78	96
Castor seed	1	-	1	1	1	-	-	-
Tobacco	-	-	-	-	-	-	-	-
Straw	2662	2625	2633	3152	3688	3359	3026	3715
Arhar sticks	513	447	754	500	654	133	147	273
Sesamum sticks (a)	60	75	110	115	100	90	75	70
Cotton seed	-	-	-	-	-	-	-	-
Cotton sticks (a)	-	10	-	-	-	-	-	-
Bagasse	7	7	7	7	6	6	7	5
Timber (b)	75	76	19	18	18	13	12	12
Firewood (b)	5283	5320	1325	1269	1233	865	822	789

(a) In hundred maunds

(b) In thousand cubic feet

+ Estimated in the same way as in the case of Buldhana (see footnote to Table 7.9).

TABLE 7.22 : AREA UNDER CROPS IN CHANDA DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	3900	3961	4222	4298	4278	4434	4578	4706
Wheat	654	691	805	839	1041	992	854	828
Jowar	4228	4280	4217	4356	4418	4377	4543	4590
Bajri	1	2	2	1	2	1	3	-
Maize	48	48	54	55	55	54	57	57
Ragi	4	6	7	6	8	4	5	7
Other cereals	64	75	106	96	96	82	74	65
Total cereals	<u>8899</u>	<u>9063</u>	<u>9413</u>	<u>9651</u>	<u>9898</u>	<u>9944</u>	<u>10114</u>	<u>10253</u>
Gram	253	274	341	348	383	321	264	238
Tur	232	262	262	247	255	229	227	233
Udid	238	294	262	283	246	302	362	430
Lakh	618	680	760	781	873	843	776	807
Other pulses	527	606	695	515	516	621	494	604
Total pulses	<u>1868</u>	<u>2116</u>	<u>2320</u>	<u>2174</u>	<u>2273</u>	<u>2316</u>	<u>2123</u>	<u>2312</u>
Total foodgrains	<u>10767</u>	<u>11179</u>	<u>11733</u>	<u>11825</u>	<u>12171</u>	<u>12260</u>	<u>12237</u>	<u>12565</u>
Sugarcane	20	17	14	13	14	13	11	8
Chillies	167	171	167	178	187	190	225	242
Other condiments and spices	14	15	16	14	16	18	18	18
Total condiments and spices	<u>181</u>	<u>186</u>	<u>183</u>	<u>192</u>	<u>203</u>	<u>208</u>	<u>243</u>	<u>260</u>
Potato	-	-	-	-	-	-	-	-
Other fruits and vegetables	31	31	39	37	38	38	43	44
Total fruits and vegetables	<u>31</u>	<u>31</u>	<u>39</u>	<u>37</u>	<u>38</u>	<u>38</u>	<u>43</u>	<u>44</u>
Miscellaneous foodcrops	1	-	1	1	2	2	1	2
Total foodcrops	<u>11000</u>	<u>11413</u>	<u>11970</u>	<u>12068</u>	<u>12428</u>	<u>12521</u>	<u>12535</u>	<u>12879</u>
Cotton	779	877	852	795	804	751	751	663
Other fibres	7	9	8	6	9	9	7	9
Total fibres	<u>786</u>	<u>886</u>	<u>860</u>	<u>801</u>	<u>813</u>	<u>760</u>	<u>758</u>	<u>672</u>
Groundnut	17	21	13	8	2	4	6	5
Sesamum	1073	1254	1157	1290	504	835	935	1161
Rape and mustard	-	-	1	-	1	-	-	1
Linseed	731	668	841	855	1280	1242	1060	787
Castor seed	14	13	13	11	9	10	7	10
Other oilseeds	1	1	-	-	-	-	-	-
Total oilseeds	<u>1836</u>	<u>1957</u>	<u>2025</u>	<u>2164</u>	<u>1796</u>	<u>2091</u>	<u>2008</u>	<u>1964</u>
Tobacco	4	3	6	13	20	19	11	13
Other drugs and narcotics	-	-	-	-	-	-	-	-
Total drugs and narcotics	<u>4</u>	<u>3</u>	<u>6</u>	<u>13</u>	<u>20</u>	<u>19</u>	<u>11</u>	<u>13</u>
Fodder crops	40	39	17	17	17	17	20	22
Miscellaneous non-foodcrops	-	1	-	-	-	1	-	-
Total non-foodcrops	<u>2666</u>	<u>2886</u>	<u>2908</u>	<u>2995</u>	<u>2646</u>	<u>2888</u>	<u>2797</u>	<u>2671</u>
Gross Cropped Area	<u>13666</u>	<u>14299</u>	<u>14878</u>	<u>15063</u>	<u>15074</u>	<u>15409</u>	<u>15332</u>	<u>15550</u>

TABLE 7.23 : OUTTURN OF CROPS IN CHANDA DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	2001	2017	2203	2365	2406	2536	2229	2545
Wheat	88	153	141	165	181	139	89	135
Jowar	888	1001	852	999	706	790	942	765
Bajri	-	-	-	-	-	-	-	-
Maize	8	9	9	9	9	7	8	8
Ragi	1	1	1	1	1	-	1	1
Other cereals	13	6	9	10	5	12	7	9
Total cereals	<u>2999</u>	<u>3187</u>	<u>3215</u>	<u>3549</u>	<u>3308</u>	<u>3484</u>	<u>3276</u>	<u>3463</u>
Gram	40	38	62	65	59	46	27	24
Tur	121	230	116	86	69	79	32	59
Udid	24	29	29	29	21	25	28	36
Lakh	77	84	94	97	108	71	72	71
Other pulses	24 ⁺	39 ⁺	31 ⁺	51	50	59	49	48
Total pulses	<u>286</u>	<u>420</u>	<u>332</u>	<u>328</u>	<u>307</u>	<u>280</u>	<u>208</u>	<u>238</u>
Total foodgrains	<u>3285</u>	<u>3607</u>	<u>3547</u>	<u>3877</u>	<u>3615</u>	<u>3764</u>	<u>3484</u>	<u>3701</u>
Sugarcane (gul)	36	31	26	25	25	23	23	14
Chillies	42	47	23	24	24	43	33	41
Potato	-	-	-	-	-	-	-	-
Cotton (kapas)	73	68	50	50	35	44	56	52
Groundnut	4	5	4	1	1	1	1	1
Sesamum	66	71	59	76	23	58	65	82
Rape and mustard	-	-	-	-	-	-	-	-
Linseed	61	55	77	85	112	105	96	72
Castor seed	2	2	2	2	1	1	1	1
Tobacco	1	1	2	4	4	4	2	3
Straw	3491	3813	3672	4130	3600	3790	3774	3723
Arhar sticks	807	1534	774	574	460	527	213	393
Sesamum sticks (a)	5365	6270	5785	6450	2520	4175	4675	5805
Cotton seed	48	45	33	33	23	29	37	34
Cotton sticks (a)	7790	8770	8520	7950	8040	7510	7510	6630
Bagasse	8	7	6	6	6	5	5	3
Timber (b)	72	82	32	30	26	27	25	24
Firewood (b)	5164	5882	2305	2164	1840	1880	1722	1669

(a) In hundred maunds

(b) In thousand cubic feet

+ Estimated in the same way as in the case of Buldhana district (See footnote to Table 7.9).

CHAPTER VIII

AREA AND OUTTURN OF CROPS IN MARATHWADA DISTRICTS

The last group of districts to consider is the Marathwada region. The important sources of data relating to these districts for the years 1951-52 to 1955-56 include the official publications issued by the Government of Hyderabad. Unlike Bombay and Madhya Pradesh, Hyderabad did not issue annual SCRs. Hyderabad had a centralised directorate of statistics to collect and publish statistical information. An agricultural census was held every year, and the data collected were published in the Statistical Abstract of the Hyderabad State (SAH). Moreover, a quinquennial publication, 'Agricultural Statistics', containing elaborate information on crops was also issued by the centralised statistical agency. In a sense these Hyderabad publications were of a 'primary' nature. Besides we have the 'primary' publications of the DESAg, viz. 'Estimates' and IAS. Further, there are the 'secondary' sources made available by the Government of the reorganised Bombay State and later of Maharashtra such as SAB (1957-58), EMh, BCAS and so on. A mention must also be made in this context of a publication issued by the Bureau of Economics and Statistics, Govern-

ment of Hyderabad in view of the reorganisation of States, viz. "Districtwise Statistics pertaining to Telangana, Marathwada and Karnataka Regions of Hyderabad State" (DSH). This provides districtwise data for the year 1954-55 in which are shown separate figures relating to Osmanabad district and the three talukas of Bidar district, viz., Ahmedpur, Udgir and Nilanga, which were joined to Osmanabad. The main sources of data for Marathwada in 1956-57, 1957-58 and 1958-59 are the same as those for the other regions of Maharashtra since after the reorganisation of States in 1956 all the regions of Maharashtra were brought together in a single federating unit.

In respect of coverage of data the position in Marathwada districts is comparable to that in the other regions of Maharashtra for the years 1956-57 to 1958-59 since the basic source of information on area and outturn in these years, viz. SCRB, is common to all the regions. For the years 1951-52 to 1955-56 the important alternative sources already mentioned are (i) 'primary' publications issued by the Government of Hyderabad, (ii) 'primary' publications of the DESAg, and (iii) 'secondary' publications of the States of reorganised Bombay and Maharashtra. It is true that none of these publications provide information by as detailed a breakdown as the

SCRB. But between themselves they give fairly elaborate area data as also outturn of crops which together mostly accounted for over 90 percent of the gross cropped area in each of the Marathwada districts. The main lacuna in the sources listed as (i) and (ii) above is that they furnish data for the old districts of Nanded and Osmanabad. It is true that 'Estimates' and IAS for 1956-57 give adjusted figures for these two districts but the data are not available for all the five years. In fact district-wise data for hardly a year or two are provided. In this context the various 'secondary' sources would prove to be useful.

With regard to reliability of area and outturn data sources available for Marathwada are probably not inferior to those for Bombay and Madhya Pradesh. Even as early as in 1949-50 the patwari agency existed in the whole of Hyderabad state, including most of the jagir areas also.¹ Further it was the practice of the Government of Hyderabad to conduct an annual agricultural census "with the help of honorary enumerators selected from all classes of population, as in the case of the population census The primary enumerator (was)

¹ Coordination of Agricultural Statistics in India (Report of the Technical Committee) (Ministry of Agriculture, Government of India, 1949), p. 10.

required to visit each village and obtain the necessary particulars of area and other details of agricultural statistics from the patwari's record, satisfy himself about their accuracy and furnish the data to the agricultural inspectors, in standard forms prescribed for the purpose."²

Over an overwhelmingly large proportion of area in Hyderabad State the method of collecting agricultural data was that of complete enumeration. Thus the Report of the Technical Committee on 'Coordination of Agricultural Statistics in India' indicates that even by 1949-50 agricultural statistics for about 91 percent of the geographical area of Hyderabad state were based upon field-to-field investigation.³ Rough estimates were made for the remaining 9 percent, so that there was no absolutely 'non-reporting' area. Further it is highly probable that the area under crops in this 9 percent of geographical territory was even less than 9 percent of the gross cropped area in the State.

We learn also from the IAS, 1954-55 and 1955-56 (Vol. II) that over 97 percent of the geographical area of Hyderabad state the method of compiling agricultural

² Ibid., p. 10.

³ See Report of the Technical Committee, Appendix IV, p. 135.

data in vogue was one of complete enumeration.⁴ Since the relevant table in IAS summarises data for the old set-up of States as it existed before November 1956, the position indicated above probably obtained also in the early part of the period under review in this study. It is true that the picture outlined thus far relates to Hyderabad State as a whole but there is no reason to believe that Marathwada region in Hyderabad was particularly worse-off in this respect. Probably the data in SCRBs, 1956-57, 1957-58 and 1958-59 on 'non-reported' areas are of some value in the present context. These data indicate that there was no 'non-reported' area in Marathwada districts in the three years.

It will be seen that it is not feasible to employ the method of complete enumeration in unsurveyed areas.⁵ This means that if this method had been used to collect agricultural data over an overwhelmingly large proportion of geographical area, an equally large proportion of area was cadastrally surveyed. The Report of the Technical Committee referred to earlier tells us that the whole of Hyderabad State with the exception of a few former

⁴ DESAg: IAS, 1954-55 and 1955-56, Vol. II, Appendix V, p. 436.

⁵ Co-ordination of Agricultural Statistics in India (Report of the Technical Committee) (Ministry of Agriculture, Government of India, 1949), p. 23.

jagirs, was surveyed and settled. It is also indicated in the Report that 91 percent of the geographical area over which data were collected by field-to-field investigation, was cadastrally surveyed.⁶ It appears that by 1955 in any case villages even in the few former jagirs had been surveyed.⁷

The analysis made so far would suggest that Marathwada region has been better-off than the other regions of Maharashtra in respect of cadastral surveys and primary reporting of agricultural data. One also gains the impression that over the years there has been an extension of the area surveyed and 'reported' on the basis of field-to-field inspection. Even if this is so probably comparability of the year-to-year estimates is not much affected. It will be seen that in the initial year of our period also an overwhelmingly large proportion of area in Marathwada appears to have been surveyed and 'reported' in a reliable manner. Besides the unsurveyed area was not a totally 'non-reported' area so that rough estimates were made with regard to area under crops in this area. Finally it is also probable that the area

⁶ Ibid., p. 135.

⁷ A.M.Khusro: Economic and Social Effects of Jagirdari Abolition and Land Reforms in Hyderabad, pp.135-137.

which eventually came within the scope of cadastral survey and satisfactory reporting contributed proportionately less to agricultural income.

In the context of reliability of data a further question which needs to be considered is the relative importance of crop-cutting experiments in estimation of crop yields. As in the case of Vidarbha districts the scope of the crop-cutting surveys was extended from time to time in Marathwada during the period under review. The position in this respect as summarised in DESAg's 'Guide to Current Agricultural Statistics' is shown in the table below :

TABLE 8.1 : CROP-CUTTING SURVEYS IN MARATHWADA DISTRICTS

Crop	Year from which the method of crop-cutting surveys was adopted
Wheat	1951-52
Rice, jowar, bajra, maize	1952-53
Gram	1956-57
Groundnut, cotton	1957-58

Source: DESAg : Guide to Current Agricultural Statistics (Revised Edition), 1962, p. 14.

EMh and BCAS also give a list of crops covered by

surveys in Marathwada districts from time to time. This list does not include maize. Clearly the omission is explained by the fact that neither of the publications shows any data for maize. On the other hand SAH, 1952-53 gives average yield of cereals in Hyderabad State which was derived by means of crop-cutting experiments by random sampling method.⁸ Maize is one of these cereals. This crop must, therefore, be added to the list of the 'selected' crops though EMh or BCAS make no mention of it.

Further, an important problem relates to the year(s) from which different crops were brought under the category of 'specified' crops. According to DESAg's 'Guide' wheat was the only crop in this category in 1951-52. EMh and BCAS are of little use in this context because they merely state that in Marathwada districts crop-cutting surveys on rice, bajri, jowar and wheat were in progress at the time of States reorganisation; they do not mention specific years. However the SAH for the different years give statewide data on average yield and outturn of the following crops estimated on the basis of crop-cutting experiments : rice abi; rice tabi; jowar kharif; jowar rabi; bajra kharif; maize kharif and wheat rabi. In all

⁸ SAH, 1952-53, table 33(a), p. 35.

the relevant tables there are data for 1951-52 as well which means that all these cereals were 'specified' crops in 1951-52 also. Thus all throughout the period under review the outturn estimates relating to the cereals mentioned were based upon crop-cutting surveys.

There is another discrepancy between the list in Table 8.1 and that given by EMh or BCAS. The latter source states that gram was brought within the scope of crop-cutting survey in 1957-58 along with groundnut and cotton, and not in 1956-57 as shown in Table 8.1. Unfortunately SCRB, 1956-57 is of little help. An illustration is in point. It mentions ten crops in respect of which statewide crop estimation surveys were conducted.⁹ Among these it even includes groundnut and bajra whereas according to its 'sister-publications', viz. EMh and BCAS (also issued by the Department of Agriculture, Government of Maharashtra), and DESAg's 'Guide' outturn estimates for these two crops have been based upon crop-cutting surveys in Vidarbha districts only since 1957-58 and 1958-59 respectively. Under the circumstances the fact that gram is included among these ten crops mentioned in SCRB, 1956-57 need not lead us to the conclusion that crop-cutting surveys on this crop in Marathwada started

⁹
SCRB, 1956-57, p. 18.

in 1956-57. It seems proper to accept the information in EMh and BCAS that gram became a 'selected' crop in Marathwada only in 1957-58.

The scope of the crop-cutting surveys was extended twice, viz., in 1951-52 and 1957-58. In view of this extension and consequently possible change in the proportion of area respectively under categories (a), (b) and (c) in Marathwada districts we shall study the area distribution by categories of crops in 1951-52, 1955-56 and 1958-59. Crops coming under (a) have already been enumerated. The composition of category (b) is determined by the availability of year-to-year outturn data in the official publications. Both in 1951-52 and 1955-56 the category comprised the following crops: cereals other than rice, wheat, jowar, bajri and maize; gram; tur; other pulses; potatoes; chillies; sugarcane; cotton; groundnut; castor seed; sesamum; rape and mustard; linseed and tobacco. The principal source of outturn data in 1958-59 is the SCRB, and hence the category (b) consisted of the crops already mentioned in Chapter III¹⁰ except that for Marathwada districts tobacco was included here and maize was not. Category (c) is made up all the crops that remain.

¹⁰

See footnote 26 on p. 86 of Chapter III.

In order to study area distribution by categories of crops we require data on gross cropped area and on area under each of the three categories. The proportions are calculated on the basis of data in area tables at the end of this chapter. Though boundaries of Nanded and Osmanabad were revised we get fairly reliable adjusted figures for crops that together accounted for an overwhelming proportion of the gross cropped area in each of the two districts. The proportion of area under each category to the gross cropped area in the different Marathwada districts is shown in the following table :

TABLE 8.2 : AREA DISTRIBUTION BY CATEGORIES OF CROPS
(Percentages)

Years	1951-52			1955-56			1958-59		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
Aurangabad	42	49	9	45	48	7	73	20	7
Parbhani	36	58	6	42	53	5	77	18	5
Nanded	34	62	4	43	54	3	81	17	2
Bhir	51	42	7	51	43	6	76	18	6
Osmanabad	38	52	10	45	46	9	70	20	10
Marathwada	40	52	8	45	48	7	75	19	6

It can be inferred from this table that upto 1957-58

when crop-cutting surveys were extended to gram, cotton and groundnut the proportion of area under 'selected' crops was quite small -- smaller than that in even Konkan districts.¹¹ Even if it is shown that the proportionate contribution of these crops in each district of Marathwada was at the minimum the same as the relevant proportion of area in Table 8.2, the position would not be quite satisfactory. It will also be seen in the next chapter that the data on prices in these districts are not as widely available as those relating to the other regions of Maharashtra. However area under (c), estimates relating to which are relatively more arbitrary in nature, was proportionately less in Marathwada districts than in Konkan or even in some of the Deccan districts. Further the more remunerative group of crops in this category, viz. fruits and vegetables, accounted for less than 0.5 percent of the gross cropped area in every Marathwada district. Considering all the aspects of the problem of reliability of estimates analysed so far one can probably describe the estimates of agricultural income of these districts as reliable in a useful degree.

As a step towards the estimation of area and outturn

¹¹ Compare with Table 3.2 at p. 94 in Chapter III.

of crops in the districts of Marathwada it would be essential to consider the problem of the need to correct official figures in view of the readjustment of district boundaries. Nanded and Osmanabad were the two districts affected by this readjustment. The boundaries of Nanded were revised twice, firstly at the time of the States reorganisation in 1956 and later in 1959 when Rajura taluka was transferred to Chanda district in Vidarbha. Thus the pre-1956 district of Nanded (old) 'gained' some territory (inclusive of Rajura taluka) and 'lost' some to the State of Andhra Pradesh. We shall designate the district so constituted as Nanded (reorganised). In 1959 with the transfer of Rajura taluka to Chanda a smaller district came into existence which we shall refer to as Nanded (new). As compared to Nanded (old) the district of Nanded (new) has been larger by 113.9 sq. miles, i.e. by 2.9 percent.

BCAS gives data on area and outturn of the principal crops in Nanded (new) for the years 1956-57, 1957-58 and 1958-59. These will be adopted. It was seen in the preceding chapter that the area/outturn of the remaining crops in Rajura taluka was insignificant. No deflation of area/outturn of these crops in Nanded seems to be necessary. The relevant data are taken from SCRBs 1956-57, 1957-58 and 1958-59 except that we depend on

SAMh, 1960-61 for data relating to maize, chillies and castor seed in 1957-58 and 1958-59.

The problem of adjustment remains in the case of data for the years 1951-52 to 1955-56. It would be useful to obtain figures for Nanded (reorganised). Those for Nanded (new) could be derived by subtracting from area/outurn of crops in the reorganised district that in Rajura taluka estimated in the preceding chapter. 'Estimates' and IAS from year-to-year as also SAH provide data for Nanded (old) whereas EMh/BCAS, SAB (1957-58), 'Estimates', 1956-57 and IAS, 1956-57 furnish the same for Nanded (reorganised). In EMh/BCAS we get the area and outturn of only the principal crops in all the eight years. SAB (1957-58) gives similar data as also distribution of area by crops in every district in 1954-55 and 1955-56. Earlier we tried to gauge the importance of these principal crops in the economy of the territories added respectively to Kolhapur and Chanda districts in order to see if any adjustment of data for the remaining crops was needed. Such an exercise is not worthwhile in the case of Nanded since there was both a 'gain' and a 'loss' of territory by Nanded. Thus a comparison between, say, the area under a crop respectively in Nanded (reorganised) and Nanded (old) would give us not area under the crop in a specified territory but merely

a net change in area under the crop in Nanded district as a result of reorganisation.

Data on area by detailed breakdown of crops for Nanded (reorganised) are available in SCRB for the three years, 1956-57, 1957-58 and 1958-59. These data show that area under crops which are included in EMh/BCAS accounted for approximately 95 percent of the gross cropped area in Nanded (reorganised) in each of the three years. Among the remaining crops chillies, 'fibres other than cotton' and 'oilseeds other than groundnut, sesamum, rape, mustard and linseed' (i.e. the residuary oilseeds) together accounted for 4 to 5 percent of the gross cropped area. Thus the crops that remain were of negligible value in Nanded (reorganised), and hence may be left out of account for the purpose of adjustment of data. It would however be useful to consider the need to correct the data relating to chillies, fibres other than cotton and the residuary oilseeds for the years 1951-52 to 1955-56.

In this limited context we shall compare the area in Nanded (old) with that in Nanded (reorganised). Such a comparison seems to be possible only for the two years 1954-55 and 1955-56 since alternative sources provide data for the respective territories. SAB, 1957-58

gives figures relating to Nanded (reorganised) and IAS, 1954-55 and 1955-56, Vol. II, to Nanded (old). The data are tabulated below :

TABLE 8.3 : AREA UNDER CERTAIN CROPS

(Area figures in hundred acres)

Years	Crops	Nanded (old)	Nanded (reorganised)
1954-55	Chillies	543	407
	Fibres other than cotton	191	205
	Residuary oilseeds	304	263
1955-56	Chillies	545	402
	Fibres other than cotton	210	225
	Residuary oilseeds	295	248

It is seen from the table that as a result of re-organisation Nanded came to have less area under chillies and residuary oilseeds, and more under fibres other than cotton. The difference between the area under fibres other than cotton in Nanded (old) and that in Nanded (reorganised) seems to be negligibly small. The same may

be said about the area under residuary oilseeds also. The data for Nanded (old) relating to these two categories could serve for Nanded (reorganised). In^{the} case of chillies however the area in Nanded (reorganised) was less than that in Nanded (old) by roughly 140 (hundred) acres. Some adjustment would be essential here.

In view of the foregoing analysis we depend on EMh/BCAS for area and outturn of the principal crops in the years 1951-52 to 1955-56. SAB (1957-58) gives additionally data on maize, chillies and castor seed relating to the reorganised district for 1954-55 and 1955-56, which will be adopted. The data for the remaining crops will be taken from sources to be mentioned in connection with the estimation of area and outturn of crops in all the Marathwada districts. Area under chillies, however, in the years 1951-52, 1952-53 and 1953-54 is reduced by 140 (hundred) acres, and outturn on this smaller area is calculated on the basis of yield per acre in Nanded (old) only. The data on various crops so collected relate to Nanded (reorganised). We obtain the data for Nanded (new) by deducting the relevant figures for Rajura estimated in the preceding chapter.

Osmanabad district which was included in the reorganised Bombay State and later in Maharashtra was

expanded in 1956 with the transfer of Ahmedpur, Nilanga and Udgir talukas in Bidar district of the old Hyderabad State. This change increased the geographical area of pre-1956 Osmanabad by 47.6 percent. Clearly the publications of the Government of Hyderabad before reorganisation of States did not show figures for the expanded district. At the same time it is essential to adjust the figures relating to the old district particularly because expansion in its size has been significantly large.

The data for the years 1956-57, 1957-58 and 1958-59 in SCRB need no adjustment as these relate to the district that came into being after the reorganisation of States. The problem arises in the case of data for the five years intervening between 1951-52 and 1955-56. EMh/BCAS have revised data in the case of the more important crops. We shall try to gauge the importance of this revision by obtaining the area distribution of crops in the three talukas (viz. Ahmedpur, Nilanga and Udgir) taken together. If we deduct from area under a crop in Osmanabad shown in EMh/BCAS in the years 1951-52 to 1955-56 the corresponding area given in IAS or SAH we would get the combined area under the crop in the three talukas. However, we are not merely interested in area under the relevant crops in the three talukas but in this area as a proportion of the gross cropped area. EMh/BCAS are of no use here

as these do not give figures of gross cropped area in the years 1951-52 to 1955-56.

The DSH issued by the Bureau of Economics and Statistics, Government of Hyderabad provides a fairly detailed area distribution by crops in the three talukas in 1954-55. In the case of some of the residuary crops however a comparison between the figures in SAB (1957-58) and those in IAS, 1954-55 and 1955-56, Vol. II is necessary to obtain data for the three talukas. Further the 'Socio-Economic Review and District Statistical Abstract of Osmanabad district, 1958-59' (i.e. DSA) issued by the BESM also gives elaborate area data relating to the three talukas for 1958-59. The gross cropped area in the three talukas together in 1954-55 can be obtained by deducting the area in Osmanabad (old) in the relevant SAH from that in Osmanabad (new) in SAB, 1957-58. The gross cropped area in 1958-59 can be derived from data in DSA issued by the BESM. These data are presented in Table 8.4.

It is seen in the table that crops cited in EMh/BCAS accounted for 86 to 87 percent of the combined gross cropped area in the talukas. In addition 12 to 13 percent of the area was devoted to chillies, 'other oilseeds' and 'fibres other than cotton'. This means that the remaining crops were absolutely unimportant in the three

TABLE 8.4 : AREA UNDER CROPS IN AHMEDPUR, NILANGA AND
UDGIR TALUKAS TAKEN TOGETHER

(Figures in hundred acres)

Crops	1954-55	1958-59
1. Total foodgrains	4674	4929
2. Sugarcane	13	22
3. Cotton	1255	1037
4. Groundnut	1031	1026
5. Rape, mustard and linseed	120	3
6. Sesamum	57	27
7. Tobacco	1	2
8. Total under (1) to (7)	7151	7046
9. Fruits and vegetables	25	16
10. Chillies	124	111
11. Other condiments and spices	39	35
12. Castor seed	1	2
13. Other oilseeds	511	544
14. Other fibres	309	379
15. Other drugs and narcotics	-	1
16. Fodder crops	22	45
17. Gross cropped area	8190	8180

[N.B. : Crops (1) to (7) are those included in EMh/BCAS].

talukas, and hence area under these crops in Osmanabad (old) could be used for the enlarged district if revised data were not available.

The data in respect of chillies, 'other oilseeds', and 'fibres other than cotton' for the enlarged district in 1954-55 and 1955-56 are obtainable in SAB, 1957-58. For the years 1951-52, 1952-53 and 1953-54 we get in the relevant publications data relating to the district prior to reorganisation. Area under chillies in each of the three years is raised by 100 (hundred) acres and outturn calculated on the basis of average yield in the old district. Area under 'fibres other than cotton' is raised by 300 (hundred) acres and that under 'other oilseeds' by 500 (hundred) acres. Sources of data for the old district are specified along with those for the other Marathwada districts.

Estimates of area and outturn of the following crops in Marathwada districts in all the eight years are taken from EMh/BCAS: rice, wheat, jowar, bajri, ragi, total cereals, gram, tur, total pulses, sugarcane, groundnut, sesamum and tobacco. Adjustments are made in the data for Nanded. The outturn of paddy is derived from that of rice by means of the ratio of conversion used for other Maharashtra districts. Cotton will be considered sepa-

rately later. Though SAH was the 'primary' publication of the old Hyderabad State we are depending on EMh/BCAS even for earlier years. For one thing the districtwise outturn of even 'selected' crops given in SAH is that estimated by the traditional annewari method. This is not so with outturn data in EMh/BCAS. Secondly SAH clearly does not give adjusted data for Nanded and Osmanabad.

In the area tables at the end we show a breakdown of cereals into rice, wheat, jowar, bajri, maize, ragi and other cereals. SAH, SAB (1957-58), SCRB and MhG together provide area and outturn of maize in all years. We take the area and outturn in 1951-52 to 1953-54 from DESAg's MhG, in 1954-55 and 1955-56 from SAB and in the remaining years from SCRB. For data relating to the first three years MhG is preferred to SAH. Unlike SAH, MhG furnishes data for reorganised districts. Further, though maize has been a 'selected' crop in Marathwada districts all throughout, SAH gives outturn estimates by the traditional method. Presumably the MhG figures are based upon crop-cutting surveys as it is such figures that the Government of Hyderabad forwarded to the DESAg in its crop forecasts. The SCRB data on maize for Nanded are adjusted to derive estimates for Nanded (new).
the
It will be recalled that in/case of Chanda inclusive of

Rajura taluka we depended on SAMh for data relating to 1957-58 and 1958-59. By deducting from figures for expanded Chanda those in SCRB for the smaller district we obtain figures for Rajura taluka. The data for Nanded (reorganised) for the two years are corrected by taking into account area/outurn of maize in Rajura. The data for 1956-57 from SCRB are adopted without correction.

EMh/BCAS give combined figures of area/outurn of rape, mustard and linseed. Attempts are made to obtain data separately for rape and mustard on the one hand and linseed on the other. DSH and SCRB provide the requisite data for the years 1954-55, 1956-57, 1957-58 and 1958-59. The information for the remaining years is provided in SAH and IAS, the latter publication giving only area figures. SAH data are available for only two of the four years, i.e. 1952-53 and 1953-54. Furthermore SAH does not furnish data on rape and mustard. SAH data therefore would not be used here. Area figures are taken from IAS in the case of the three districts of Aurangabad, Parbhani and Bhir. As for outurn the whole of the combined outurn of rape, mustard and linseed shown in EMh/BCAS is allotted to linseed only as rape and mustard yielded hardly any outurn in Marathwada districts.

SAH/IAS give data for the old districts of Nanded and Osmanabad. Area under rape and mustard in the old districts given by IAS is adopted for the reorganised districts. It is assumed that there was no outturn of these crops in the two districts in the years in question. Area under linseed is derived by deducting area under rape and mustard from that under rape, mustard and linseed shown in EMh/BCAS. The whole of the outturn of rape, mustard and linseed given in EMh/BCAS is allotted to linseed only. The figures relating to Rajura taluka are deducted from those for Nanded (reorganised) to arrive at estimates for Nanded (new).

Area and outturn of castor seed in 1951-52 are taken from MhG. We depend on SAH, SAB (1957-58) and SCRB for data relating to the remaining years. Though safflower was a fairly significant crop in the category 'oilseeds' in some of the Marathwada districts it is merged into the residuary category of 'other oilseeds' for want of adequate data. One more crop of some importance was chillies. SAH, DSH, SAB (1957-58), and SCRB together furnish data on area and outturn in all years except 1951-52. Area and outturn in 1951-52 are taken from MhG.¹² The data for Nanded and Osmanabad are corrected

¹² According to MhG area under chillies in 1951-52 was 73 (hundred) acres in Aurangabad district and 56 (hundred) acres in Bhir. The corresponding figures in

on the lines indicated earlier. As regards area under fodder crops and under residuary crops in the different categories we depend upon IAS for data relating to years 1951-52 to 1953-54. Figures for 1954-55 and 1955-56 are taken from SAB (1957-58) and for the years 1956-57 to 1958-59 from SCRB.

Fruits and vegetables constituted an unimportant category in Marathwada districts. Some data on outturn are available in official publications. Thus SAH of some years provide information on the outturn of banana and onions in the districts of Marathwada. However, it seems pointless to estimate the outturn in view of the non-availability of data on prices. The area under fruits and vegetables in each of these five districts in the years 1951-52 to 1953-54 is taken from IAS. SAB (1957-58) gives data for the reorganised districts for the years 1954-55 and 1955-56. These are adopted. For data relating to the last three years we turn to SCRB.

Area under cotton in all the eight years is taken from EMh/BCAS with adjustments for Nanded as already explained. In the ICCO reports on outturn of cotton (lint) Hyderabad State itself was a trade block upto 1955-56 of which Marathwada was a part. In the years 1956-57 to 1958-59 this group of districts was included

IAS are 173(hundred) acres and 156 (hundred) acres respectively. A scrutiny of area data for the two districts in the other years suggests that probably the MhG figures for 1951-52 are misprints. For that year the IAS figures relating to Aurangabad and Bhir are adopted here.

in the trade block of the reorganised Bombay State. On the lines of the Table 7.6 (p. 237) in the preceding chapter we show below the year-to-year estimates of outturn of cotton regarded as nearer the actual by the ICCC, the official estimates mentioned in the ICCC reports, and the proportion of divergence, i.e. the percentage by which an ICCC estimate was higher (+) or lower (-) than the corresponding official estimate. Data upto 1955-56 relate to Hyderabad State and those for the remaining three years to reorganised Bombay.

TABLE 8.5 : OUTTURN OF COTTON (LINT)

(Figures of outturn in '000 bales of 392 lbs. each)

Type of estimates	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
ICCC estimates	497	305	404	381	328	2194	2433	2580
Official estimates	430	316	404	381	182	2176	2201	2481
Proportion of divergence	+15.6	-3.5	0.0	0.0	+80.2	+0.8	+10.5	+4.0

The proportion of divergence seems to be significant in the years 1951-52, 1955-56 and 1957-58. No adjustment

of outturn data in 1957-58 can legitimately be made as in this year Marathwada was a part of the reorganised Bombay State in which there were other cotton-growing regions as important as-even more important than-Marathwada.

In 1951-52 and 1955-56, however, Marathwada was in Hyderabad State. The area/outturn of cotton in Marathwada districts formed a sizeable proportion of area/outturn in Hyderabad State. Among Marathwada districts Aurangabad, Parbhani and Nanded (reorganised) were particularly important accounting together for over 50 percent of area/outturn of the crop in the State. The proportion of divergence in 1955-56 is not quite reliable as the ICCC report agrees that its estimate was vitiated to a great extent by the non-availability of certain types of statistics.¹³ We shall raise the outturn of cotton (lint) in Aurangabad, Nanded (reorganised) and Parbhani (all taken from EMh) by 10 percent in 1951-52. The outturn in these districts in the other years, and in Bhir and Osmanabad in all the years is drawn from EMh/BCAS. Data for Nanded are suitably adjusted in the light of earlier analysis.

¹³ Indian Central Cotton Committee : Report on the accuracy of the All-India Cotton forecast of 1955-56 season, pp. 7-8.

It now remains to convert the outturn estimates relating to cotton (lint) into those for kapas (seed-cotton). Data on outturn of cotton (lint) from every 100 units of outturn of kapas (gathered informally from official sources in Maharashtra) are tabulated below:

TABLE 8.6 : OUTTURN OF LINT-COTTON PER 100 UNITS OF OUTTURN OF KAPAS

Aurangabad	Parbhani	Nanded	Bhir	Osmanabad
37.6	32.5	31.1	37.0	37.0

The outturn of kapas is estimated by making use of the proportions in the table. Area under 'other fibres' is estimated by deducting from area under 'total fibres' that under cotton already obtained. For this purpose area under 'total fibres' in the years 1951-52 to 1953-54 is taken from IAS, that in 1954-55 and 1955-56 from SAB (1957-58), and that in the remaining years from SCRB.

Finally, we estimate the outturn of byproducts. In the case of the following byproducts we adopt the same ratios as those for Deccan and Vidarbha districts: (i) arhar sticks, (ii) sesamum sticks, (iii) cotton sticks and (iv) bagasse. It was explained in Chapters V and

VII that outturn of cotton seed could be estimated when we know the outturn of cotton (lint) as also the ratio of conversion of kapas into lint. Data on grass and sugarcane tufts being in terms of value are considered in the next chapter. We shall estimate the outturn of Timber and firewood in the same way as we did in the case of the other Maharashtra districts. For this purpose we would require data on area under (i) miscellaneous tree crops and groves and (ii) fruits other than bananas and grapes. Area data relating to (i) for years upto 1955-56 are taken from MhG and for later years from SCRB. It will be remembered that MhG gives data for the reorganised districts. It does not seem worthwhile to attempt to derive figures for Nanded (new). For data on area under (ii) upto 1955-56 we turn to IAS, SCRB being used for later years. It is true that IAS provides data for the old districts. But area under the category both in Nanded and Osmanabad was so small that data even for the old districts would serve the purpose.

The only byproduct that remains is straw. 'Agricultural Statistics (Quinquennial)', issued in 1949 by the former Government of Hyderabad gives some data on outturn of straw in the State. Unfortunately the data cannot be used as these relate to an old period, 1940-41 to 1944-45. Further, we are given outturn of straw per

acre and not ratio of outturn of straw to outturn of crop. One may feel that outturn per acre in any year in the period selected by us can be derived from data in 'Agricultural Statistics'. If we assume that ratio of outturn of straw to that of a crop was the same in the two periods, viz., 1940-41 to 1944-45 and 1951-52 to 1958-59, then it may be felt that outturn of straw per acre in any year of our period was higher or lower than that specified in 'Agricultural Statistics' by the proportion by which yield per acre of the relevant crop in that year was higher or lower than that in the period, 1940-41 to 1944-45. Apart from the assumption of constancy of the ratio in the two periods the aforementioned method of estimation involves an additional difficulty. The outturn of cereals in the earlier period was estimated by the annewari method whereas that in the latter period, by crop-cutting surveys. It therefore seems better to fall back on the N.S.S. data though these relate to population zones.

Hyderabad State was included in the population zone of Central India in the N.S.S. publication. It was stated in the preceding chapter that the ratio of outturn of straw to that of a crop in Central India is available for paddy, jowar and small millets. Jowar was the most out-

standing cereal in Marathwada districts accounting for 60 percent -- in some cases even over 80 percent -- of the outturn of all cereals. We are given kharif and rabi ratios. It is seen that jowar is equally a rabi and a kharif crop in Parbhani and Osmanabad, mainly a rabi crop in Aurangabad and Bhir, and largely a kharif crop in Nanded. Accordingly we obtain the averages of the relevant ratios. The adopted ratios are 1.87, 1.96 and 1.78 respectively in the three groups of Marathwada districts. As regards paddy we accept the same ratio as the one used for Vidarbha districts.

We make no estimate for straw from ragi as this was an absolutely unimportant crop in Marathwada districts. For wheat, bajri, maize, gram, and pulses other than gram and tur we apply ratios used in the case of Deccan districts. We derive straw yielded by 'other cereals' by using the ratio relating to small millets in Central India. No deflation is made to account for possible wastage or non-collection of straw.

Tables 8.7 to 8.16 show area and outturn of crops in Marathwada districts.

TABLE 8.7 : AREA UNDER CROPS IN AURANGABAD DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	92	77	84	97	105	122	124	125
Wheat	1319	1291	1373	1762	2050	2049	2067	2102
Jowar	6448	7788	7765	7921	7947	8637	8752	8924
Bajri	3002	3279	4109	4066	4167	4221	4238	4390
Maize	60	44	52	65	37	38	38	46
Ragi	7	-	-	10	20	9	10	10
Other cereals	236	208	272	167	160	147	144	151
Total cereals	11164	12687	13655	14088	14486	15223	15373	15748
Gram	855	811	850	983	1046	1051	1059	1082
Tur	1373	1187	1262	1087	1122	1153	1074	1208
Other pulses	2599	2599	3012	4764	3921	4257	4297	4000
Total pulses	4827	4597	5124	6834	6089	6461	6430	6290
Total foodgrains	15991	17284	18779	20922	20575	21684	21803	22038
Sugarcane	116	95	83	89	102	130	149	166
Chillies	173	162	186	197	217	214	225	238
Other condiments and spices	12	9	15	12	12	13	14	16
Total condiments and spices	185	171	201	209	229	227	239	254
Fruits and vegetables	125	120	119	108	111	110	117	126
Miscellaneous foodcrops	60	3	6	4	4	3	6	6
Total foodcrops	16477	17673	19188	21332	21021	22154	22314	22590
Cotton	4745	4336	5088	5144	5928	5286	5260	5376
Other fibres	276	281	303	228	262	259	270	295
Total fibres	5021	4617	5391	5372	6190	5545	5530	5671
Groundnut	1629	1704	1506	2081	1854	1877	1930	1967
Sesamum	316	235	294	250	212	187	203	209
Rape and mustard	16	17	12	9	11	8	7	7
Linseed	702	556	410	392	373	412	431	561
Castor seed	27	25	19	15	15	12	13	18
Other oilseeds	1796	1927	1718	1809	1747	1847	1763	1770
Total oilseeds	4486	4464	3959	4556	4212	4343	4347	4532
Tobacco	3	6	9	8	5	7	7	9
Other drugs and narcotics	1	-	1	4	7	2	3	2
Total drugs and narcotics	4	6	10	12	12	9	10	11
Fodder crops	63	36	63	29	33	42	45	46
Miscellaneous non- foodcrops	10	8	11	8	13	5	6	9
Total non-foodcrops	9584	9131	9434	9977	10460	9944	9938	10269
Gross cropped area	26061	26804	28622	31309	31481	32098	32252	32859

TABLE 8.8 : OUTTURN OF CROPS IN AURANGABAD DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	34	30	34	40	16	36	33	27
Wheat	207	150	242	300	347	204	308	355
Jowar	802	1170	1708	1292	1130	1417	1635	2273
Bajri	235	180	364	310	323	325	419	308
Maize	7	10	8	9	10	5	8	6
Ragi	1	-	-	-	2	1	1	1
Other cereals	15	20	24	16	17	16	11	12
Total cereals	1301	1560	2380	1967	1845	2004	2415	2982
Gram	106	61	93	122	130	121	121	112
Tur	125	78	170	105	111	121	112	109
Other pulses	203	110	302	524	390	431	521	345
Total pulses	434	249	565	751	631	673	754	566
Total foodgrains	1735	1809	2945	2718	2476	2677	3169	3548
Sugarcane (gul)	183	107	151	139	203	216	248	277
Chillies	18	15	22	21	25	22	21	30
Cotton (Kapas)	446	238	382	389	377	314	405	369
Groundnut	398	330	436	580	605	561	166	221
Sesamum	33	16	38	19	16	14	16	16
Rape and mustard	-	-	-	1	-	1	1	1
Linseed	65	40	35	36	36	37	39	50
Castor seed	1	1	1	1	1	1	1	1
Tobacco	1	1	1	2	1	2	1	2
Straw	2719	3130	4949	3400	3904	4333	5197	6066
Arhar sticks	834	520	1134	700	740	807	747	727
Sesamum sticks (a)	1580	1175	1470	1250	1060	935	1015	1045
Cotton seed	278	149	238	243	235	196	253	230
Cotton sticks (a)	47450	43360	50880	51440	59280	52860	52600	53760
Bagasse	41	24	34	31	46	49	56	62
Timber (b)	6	6	5	5	6	4	4	4
Firewood (b)	429	429	380	377	409	263	273	276

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 8.9 : AREA UNDER CROPS IN PARBHANI DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	134	127	155	191	197	256	291	283
Wheat	525	688	853	1048	1372	1227	1391	1186
Jowar	6213	7680	8055	8521	8192	9189	8892	8963
Bajri	66	97	104	95	106	90	69	88
Maize	12	12	16	14	11	12	9	8
Ragi	6	-	-	3	3	2	-	1
Other cereals	173	143	186	66	65	62	39	33
Total cereals	7129	8747	9369	9938	9946	10838	10691	10562
Gram	897	850	764	917	1073	929	940	923
Tur	1082	935	990	845	852	898	834	887
Other pulses	2308	2322	2502	3212	2826	2901	2154	2401
Total pulses	4287	4107	4256	4974	4751	4728	3928	4211
Total foodgrains	11416	12854	13625	14912	14697	15566	14619	14773
Sugarcane	38	27	18	18	26	38	38	39
Chillies	105	91	104	108	114	117	125	102
Other condiments and spices	29	20	20	19	26	27	35	24
Total condiments and spices	134	111	124	127	140	144	160	126
Fruits and vegetables	99	85	84	81	96	94	81	78
Miscellaneous foodcrops	5	-	1	1	3	-	-	2
Total foodcrops	11692	13077	13852	15139	14962	15842	14898	15018
Cotton	4945	5416	5833	5197	5671	5303	5040	5039
Other fibres	355	242	322	215	246	252	184	223
Total fibres	5300	5658	6155	5412	5917	5555	5224	5262
Groundnut	970	1233	1353	1760	1357	1295	1043	942
Sesamum	63	64	89	85	73	57	60	55
Rape and mustard	8	8	7	10	9	13	23	24
Linseed	474	417	322	333	367	408	504	437
Castor seed	24	16	10	8	8	9	6	7
Other oilseeds	690	912	800	940	959	914	950	906
Total oilseeds	2229	2650	2581	3136	2773	2696	2586	2371
Tobacco	1	2	2	2	2	3	1	2
Other drugs and narcotics	-	-	-	1	-	1	1	16
Total drugs and narcotics	1	2	2	3	2	4	2	18
Fodder crops	2	2	1	2	2	54	55	8
Miscellaneous non-foodcrops	18	1	1	2	1	1	16	1
Total non-foodcrops	7550	8313	8740	8555	8695	8310	7883	7660
Gross cropped area	19242	21390	22592	23694	23657	24152	22781	22678

TABLE 8.10 : OUTTURN OF CROPS IN PARBHANI DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	33	30	64	66	87	75	84	61
Wheat	62	82	101	176	221	197	238	225
Jowar	800	1510	1482	1582	1284	2154	2104	2135
Bajri	4	10	10	10	12	9	6	6
Maize	1	-	2	2	2	2	1	1
Ragi	-	-	-	-	-	-	-	-
Other cereals	13	8	12	7	6	8	4	4
Total cereals	913	1640	1671	1843	1612	2445	2437	2432
Gram	77	129	128	172	206	161	120	146
Tur	207	144	206	110	117	221	150	159
Other pulses	250	215	383	350	307	348	256	270
Total pulses	534	488	717	632	630	730	526	575
Total foodgrains	1447	2128	2388	2475	2242	3175	2963	3007
cane								
Sugar/(gul)	53	33	33	29	41	77	64	64
Chillies	11	8	12	12	12	14	17	15
Cotton (kapas)	360	340	416	404	268	390	422	364
Groundnut	238	301	398	632	401	434	117	229
Sesamum	5	4	9	8	3	6	5	5
Rape and mustard	-	-	-	1	-	1	2	2
Linseed	36	22	31	29	36	32	39	44
Castor seed	1	1	1	-	1	1	-	-
Tobacco	-	1	1	1	-	1	-	-
Straw	1851	3230	3348	3631	3144	4721	4570	4626
Arhar sticks	1381	960	1374	734	780	1470	1001	1061
Sesamum sticks (a)	315	320	445	425	365	285	300	275
Cotton seed	243	230	281	273	181	263	285	246
Cotton sticks (a)	49450	54160	58330	51970	56710	53030	50400	50390
Bagasse	12	7	7	7	9	17	14	14
Timber (b)	12	8	7	5	12	8	9	19
Firewood (b)	868	585	523	362	906	593	672	1346

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 8.11 : AREA UNDER CROPS IN NANDED DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	255	222	274	339	371	427	442	486
Wheat	247	268	415	563	790	673	429	670
Jowar	4451	5860	5800	6247	6384	6675	6701	7397
Bajri	20	24	22	28	29	28	30	33
Maize	149	85	120	14	11	11	9	1
Ragi	4	3	3	3	1	4	6	4
Other cereals	2	55	62	56	59	53	66	83
Total cereals	5128	6517	6696	7250	7645	7871	7683	8674
Gram	586	556	650	826	952	804	735	551
Tur	1107	956	946	916	918	938	981	1009
Other pulses	1837	1834	2122	1336	1238	1417	1396	1148
Total pulses	3530	3346	3718	3078	3108	3159	3112	2708
Total foodgrains	8658	9863	10414	10328	10753	11030	10795	11382
Sugarcane	31	23	17	27	29	41	43	47
Chillies	233	285	336	407	402	507	463	465
Other condiments and spices	37	81	90	51	58	85	73	47
Total condiments and spices	270	366	426	458	460	592	536	512
Fruits and vegetables	57	55	52	50	52	54	56	64
Miscellaneous foodcrops	-	4	-	1	-	-	2	1
Total foodcrops	9016	10311	10909	10864	11294	11717	11432	12006
Cotton	4732	5049	5157	4852	4913	4835	4728	4721
Other fibres	164	255	241	205	225	222	210	170
Total fibres	4896	5304	5398	5057	5138	5057	4938	4891
Groundnut	526	572	550	621	586	543	568	548
Sesamum	116	139	124	118	78	80	82	109
Linseed	138	116	138	169	211	236	241	153
Rape and mustard	3	5	5	6	9	8	8	7
Castor seed	39	40	34	33	26	27	27	17
Other oilseeds	232	246	251	230	222	209	211	122
Total oilseeds	1054	1118	1102	1177	1132	1103	1137	956
Tobacco	5	7	4	5	5	6	6	4
Other drugs and narcotics	-	-	-	1	1	2	2	1
Total drugs and narcotics	5	7	4	6	6	8	8	5
Fodder crops	6	28	13	2	2	3	4	-
Miscellaneous non-food- crops	6	2	2	2	2	1	-	16
Total non-foodcrops	5967	6459	6519	6244	6280	6172	6087	5868
Gross cropped area	14983	16770	17428	17108	17574	17889	17519	17874

TABLE 8.12 : OUTTURN OF CROPS IN NANDED DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	97	55	70	199	96	123	112	105
Wheat	39	62	58	110	146	122	31	131
Jowar	593	1801	920	1568	877	1962	1300	1688
Bajri	1	-	1	1	1	3	3	2
Maize	7	3	9	1	4	1	1	1
Ragi	-	1	2	-	-	-	1	-
Other cereals	3	4	2	9	3	7	8	6
Total cereals	<u>740</u>	<u>1926</u>	<u>1062</u>	<u>1888</u>	<u>1127</u>	<u>2218</u>	<u>1456</u>	<u>1933</u>
Gram	56	74	90	110	109	92	103	52
Tur	197	177	172	175	111	165	126	177
Other pulses	206	183	278	143	81	122	118	96
Total pulses	<u>459</u>	<u>434</u>	<u>540</u>	<u>428</u>	<u>301</u>	<u>379</u>	<u>347</u>	<u>325</u>
Total foodgrains	<u>1199</u>	<u>2360</u>	<u>1602</u>	<u>2316</u>	<u>1428</u>	<u>2597</u>	<u>1803</u>	<u>2258</u>
Sugarcane (gul)	56	35	30	50	47	79	81	92
Chillies	33	26	33	77	35	52	52	44
Cotton (kapas)	418	341	273	321	193	291	442	513
Groundnut	228	186	183	216	170	172	86	134
Sesamum	2	3	2	2	1	4	4	6
Rape and mustard	-	-	-	-	-	-	-	-
Linseed	11	10	13	17	13	21	22	14
Castor seed	2	2	2	3	2	1	2	1
Tobacco	1	1	1	1	1	1	1	1
Straw	1379	3515	2043	3269	1959	3901	2616	3359
Arhar sticks	1314	1181	1147	1167	740	1101	840	1081
Sesamum sticks (a)	580	695	620	590	390	400	410	545
Cotton seed	288	235	188	221	133	200	305	353
Cotton sticks (a)	47320	50490	51570	48520	49130	48350	47280	47210
Bagasse	13	8	7	11	11	18	18	21
Timber (b)	10	7	7	6	7	8	7	9
Firewood (b)	856	594	581	486	555	588	516	668

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 8.13 : AREA UNDER CROPS IN BHIR DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	102	89	118	136	144	167	202	212
Wheat	547	574	632	800	930	1071	1114	1070
Jowar	6238	6918	6405	6590	6764	6795	7564	7583
Bajri	2287	2495	2462	2588	2568	2582	2414	2427
Maize	36	27	34	36	27	28	25	28
Ragi	6	-	-	14	14	11	52	6
Other cereals	200	168	196	264	244	684	461	377
Total cereals	9416	10271	9847	10428	10691	11338	11832	11703
Gram	667	632	613	734	799	840	821	952
Tur	579	500	652	535	679	532	533	555
Other pulses	1453	1473	1804	2527	2017	1799	2031	1990
Total pulses	2699	2605	3069	3796	3495	3171	3385	3497
Total foodgrains	12115	12876	12916	14224	14186	14509	15217	15200
Sugarcane	30	29	18	23	27	33	34	44
Chillies	156	135	149	166	172	181	162	162
Other condiments and spices	49	73	95	60	46	66	60	58
Total condiments and spices	205	208	244	226	218	247	222	220
Fruits and vegetables	58	60	57	56	58	66	59	64
Miscellaneous foodcrops	26	12	2	1	1	1	-	1
Total foodcrops	12434	13185	13237	14530	14490	14856	15532	15529
Cotton	2521	1534	2593	2034	2495	1815	1729	1799
Other fibres	162	150	192	148	156	148	142	136
Total fibres	2683	1684	2785	2182	2651	1963	1871	1935
Groundnut	1176	1436	1300	2247	1934	1999	1658	1616
Sesamum	180	163	182	150	136	143	106	126
Rape and mustard	9	5	6	-	6	7	5	4
Linseed	466	438	310	313	308	379	349	433
Castor seed	24	10	12	10	5	5	6	5
Other oilseeds	928	1108	896	997	997	1099	1108	1102
Total oilseeds	2783	3160	2706	3717	3386	3632	3232	3286
Tobacco	2	4	6	6	2	3	3	4
Other drugs and narcotics	1	-	-	1	-	2	2	1
Total drugs and narcotics	3	4	6	7	2	5	5	5
Fodder crops	15	10	13	6	46	5	6	6
Miscellaneous non- foodcrops	6	5	3	1	1	1	-	-
Total non-foodcrops	5490	4863	5513	5913	6086	5606	5114	5232
Gross cropped area	17924	18048	18750	20443	20576	20462	20646	20761

TABLE 8.14 : OUTTURN OF CROPS IN BHIR DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	39	30	45	63	21	48	55	45
Wheat	66	50	61	120	119	117	151	207
Jowar	783	1220	1238	1383	914	1304	1979	1750
Bajri	236	130	243	217	250	151	172	161
Maize	4	10	4	6	6	4	4	3
Ragi	1	-	-	1	1	1	3	-
Other cereals	25	15	29	27	23	62	37	34
Total cereals	<u>1154</u>	<u>1455</u>	<u>1620</u>	<u>1817</u>	<u>1334</u>	<u>1687</u>	<u>2401</u>	<u>2200</u>
Gram	59	52	83	89	106	101	116	122
Tur	57	36	63	47	69	51	48	50
Other pulses	102	69	167	246	220	143	155	156
Total pulses	<u>218</u>	<u>157</u>	<u>313</u>	<u>382</u>	<u>395</u>	<u>295</u>	<u>319</u>	<u>328</u>
Total foodgrains	<u>1372</u>	<u>1612</u>	<u>1933</u>	<u>2199</u>	<u>1729</u>	<u>1982</u>	<u>2720</u>	<u>2528</u>
Sugarcane (gul)	45	38	27	39	50	58	66	83
Chillies	16	12	12	17	16	13	15	25
Cotton (kapas)	147	63	177	103	142	91	115	102
Groundnut	362	293	480	871	749	500	371	394
Sesamum	20	11	19	16	16	14	13	12
Rape and mustard	-	1	1	-	-	-	-	-
Linseed	18	27	26	30	28	33	28	38
Castor seed	1	-	1	1	-	1	-	-
Tobacco	1	1	2	1	-	1	1	1
Straw	2420	2938	3396	3769	2882	3366	4794	4373
Arhar sticks	380	240	420	313	460	340	320	334
Sesamum sticks (a)	900	815	910	750	680	715	530	630
Cotton seed	93	40	112	65	89	57	72	64
Cotton sticks (a)	25210	15340	25930	20340	24950	18150	17290	17990
Baggasse	10	9	6	9	11	13	15	19
Timber (b)	3	3	3	4	3	2	2	3
Firewood (b)	236	258	285	336	238	180	139	203

(a) In hundred maunds

(b) In thousand cubic feet

TABLE 8.15 : AREA UNDER CROPS IN OSMANABAD DISTRICT

(Figures in hundred acres)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Rice	327	319	420	466	541	652	754	729
Wheat	788	930	949	1158	1477	1433	1221	1398
Jowar	7752	9079	8859	9310	9607	9706	8682	9822
Bajri	510	611	663	614	577	550	536	543
Maize	40	31	38	37	31	32	39	40
Ragi	30	22	29	17	11	7	23	18
Other cereals	222	197	242	285	273	286	268	302
Total cereals	<u>9669</u>	<u>11189</u>	<u>11200</u>	<u>11887</u>	<u>12517</u>	<u>12666</u>	<u>11523</u>	<u>12852</u>
Gram	1410	1337	1172	1394	1663	1401	1324	1304
Tur	1755	1517	1942	1661	1708	1688	1664	1668
Other pulses	3692	3712	4442	2318	2078	2476	2481	2153
Total pulses	<u>6857</u>	<u>6566</u>	<u>7556</u>	<u>5373</u>	<u>5449</u>	<u>5565</u>	<u>5469</u>	<u>5125</u>
Total foodgrains	<u>16526</u>	<u>17755</u>	<u>18756</u>	<u>17260</u>	<u>17966</u>	<u>18231</u>	<u>16992</u>	<u>17977</u>
Sugarcane	72	67	52	67	79	95	113	111
Chillies	260	234	244	269	277	277	253	253
Other condiments and spices	209	264	267	225	191	314	174	179
Total condiments and spices	<u>469</u>	<u>498</u>	<u>511</u>	<u>494</u>	<u>468</u>	<u>591</u>	<u>427</u>	<u>432</u>
Fruits and vegetables	66	65	54	87	87	88	78	67
Miscellaneous foodcrops	18	5	2	4	2	6	1	-
Total foodcrops	<u>17151</u>	<u>18390</u>	<u>19375</u>	<u>17912</u>	<u>18602</u>	<u>19011</u>	<u>17611</u>	<u>18587</u>
Cotton	2718	1798	2501	2032	2347	1733	1506	1376
Other fibres	734	657	738	659	646	625	638	794
Total fibres	<u>3452</u>	<u>2455</u>	<u>3239</u>	<u>2691</u>	<u>2993</u>	<u>2358</u>	<u>2144</u>	<u>2170</u>
Groundnut	1918	2508	2571	3128	3081	3081	2627	2997
Sesamum	206	160	221	192	166	112	107	109
Rape and mustard	29	7	11	18	13	12	10	6
Linseed	522	625	425	497	559	554	670	664
Castor seed	50	33	22	22	15	19	11	12
Other oilseeds	1335	1501	1305	1553	1412	1615	2029	1327
Total oilseeds	<u>4060</u>	<u>4834</u>	<u>4555</u>	<u>5410</u>	<u>5246</u>	<u>5393</u>	<u>5454</u>	<u>5115</u>
Tobacco	6	-	7	7	1	9	7	7
Other drugs and narcotics	-	-	-	-	-	2	3	1
Total drugs and narcotics	6	-	7	7	1	11	10	8
Fodder crops	28	18	17	36	43	46	46	60
Miscellaneous non-food-crops	4	5	5	13	7	10	72	-
Total non-foodcrops	<u>7550</u>	<u>7312</u>	<u>7823</u>	<u>8157</u>	<u>8290</u>	<u>7818</u>	<u>7726</u>	<u>7353</u>
Gross Cropped Area	<u>24701</u>	<u>25702</u>	<u>27198</u>	<u>26069</u>	<u>26892</u>	<u>26829</u>	<u>25337</u>	<u>25940</u>

TABLE 8.16 : OUTTURN OF CROPS IN OSMANABAD DISTRICT

(Figures in hundred tons)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	124	90	105	183	154	189	196	129
Wheat	63	77	54	167	184	125	175	248
Jowar	1050	2162	1721	2130	1448	1868	1624	2634
Bajri	124	86	77	59	51	42	47	36
Maize	6	5	6	6	6	5	7	6
Ragi	4	3	5	4	1	1	3	2
Other cereals	40	34	50	44	31	28	26	25
Total cereals	<u>1411</u>	<u>2457</u>	<u>2018</u>	<u>2593</u>	<u>1875</u>	<u>2258</u>	<u>2078</u>	<u>3080</u>
Gram	163	208	242	325	304	164	158	169
Tur	256	174	286	248	171	232	264	229
Other pulses	369	302	605	134	120	167	229	161
Total pulses	<u>788</u>	<u>684</u>	<u>1133</u>	<u>707</u>	<u>595</u>	<u>563</u>	<u>651</u>	<u>559</u>
Total foodgrains	<u>2199</u>	<u>3141</u>	<u>3151</u>	<u>3300</u>	<u>2470</u>	<u>2821</u>	<u>2729</u>	<u>3639</u>
Sugarcane (gul)	209	143	179	221	254	143	209	181
Chillies	50	24	29	26	20	30	29	35
Cotton (kapas)	132	50	103	94	57	84	89	78
Groundnut	518	425	661	1141	620	798	655	800
Sesamum	21	14	25	27	11	12	13	10
Rape and mustard	-	-	-	1	-	1	1	-
Linseed	42	49	32	52	46	43	60	51
Castor seed	3	1	1	2	1	2	1	1
Tobacco	1	-	2	2	1	2	1	1
Straw	2891	4841	4232	4872	3536	4172	3831	5686
Arhar sticks	1708	1161	1908	1654	1141	1547	1761	1527
Sesamum sticks (a)	1030	800	1105	960	830	560	535	545
Cotton seed	83	32	65	59	36	53	56	49
Cotton sticks (a)	27180	17980	25010	20320	23470	17330	15060	13760
Bagasse	47	32	40	50	57	32	47	41
Timber (b)	7	8	7	7	11	7	7	7
Firewood (b)	451	538	471	491	789	485	472	449

(a) In hundred maunds

(b) In thousand cubic feet

CHAPTER IX

GROSS VALUE OF AGRICULTURAL PRODUCE

An evaluation of the produce in the agricultural sector must begin with the proper demarcation of the sector described as 'agriculture'. According to the usual industrial classification agriculture would mean the sumtotal of activities concerned with the raising of crops. However, both the NIC and the C.S.O. (in its publication, NIS) have adopted a wider definition of agriculture to include a number of ancilliary activities such as processing and some trading activity by the primary producers. The main reason cited by the NIC for abandoning the industrial definition of agriculture was that the prices available at the national level in the years for which the NIC made estimates related to certain final types of products.¹ In NIS the C.S.O. argued in favour of the wider definition on the ground of the 'diversified nature of activities of the primary producers in an underdeveloped country like India.'²

¹ Final Report of the National Income Committee, February 1954, (Department of Economic Affairs, Ministry of Finance, Government of India), p. 34.

² C.S.O., Government of India, NIS, p. 14.

The 'lack-of-proper data' argument will be reviewed later in the course of analysis of the sources of prices data. We shall have reason to conclude that the primary data on prices available for the different districts of Maharashtra need not compel us to opt for a non-industrial definition of 'agriculture'. The second argument, viz., the one emphasizing the diversified nature of activities of the primary producers in an underdeveloped country, is only another version of the first if it is meant to convey that the agricultural business being what it is the most relevant data on prices obtainable in an underdeveloped country show these prices not merely as returns on activities commonly subsumed under the term 'agriculture' but also on some ancilliary activities customarily undertaken by the primary producer in a country like India. Our analysis of prices data should take care of this version.

The second argument may, however, involve the more substantive proposition that it is more meaningful in an underdeveloped country to include all the related activities of the primary producers within the sector, 'agriculture'. Clearly the reference here is not to the diverse activities of the owners of all the different resources employed in the work of crop-raising. It is not even to all the different ways in which the cultivator,

i.e. the primary producer, earns his livelihood. The intention is to include only some of the activities that are 'ancilliary' to the main activity of crop-raising by the primary producer, such as, for example, selling his goods in a market which is not nearby. However, if diversification of the nature of activities is so meaningful a fact that it must be taken into account then the focus of analysis for income estimation should be not an activity such as 'agriculture' but an individual, viz. the cultivator. Any such study -- more so a historical study such as the present -- howsoever desirable would run into immense difficulties relating to availability of data.

Further, it is important to see the significance of these 'ancilliary' activities from the point of view of the income they bring to the cultivators. There is no clearcut evidence for Maharashtra districts on this point. Under the circumstances it may be useful to consider the information scattered over the reports on surveys of villages conducted by the GIPE. Over the period between 1954-55 to 1959-60 surveys of several villages in the following Maharashtra districts were undertaken and reports prepared: Ratnagiri³ in Konkan;

³ The village concerned, viz. Mithbav, was surveyed in 1954-55 and resurveyed in 1959-60.

Satara,⁴ Nasik, Jalgaon and Poona in Deccan; Osmanabad in Marathwada; and Buldhana, Bhandara and Chanda in Vidarbha. Most of the reports give marketing data showing the proportion of produce sold by the cultivators, the place of sale and the agency to whom sold. It seems that the cultivators retained a significant proportion of the produce and further that a large part of the produce was disposed of locally. If this picture was to be regarded as representative, it would follow that the ancilliary activities brought very little, if any, income to the primary producers.

In case the ancilliary activities by the cultivators were not quite significant during the relevant period, as seems to be^{the} case, they are better left out of account and agriculture defined in the industrial sense. The reason is that whereas the data on prices relevant to the industrial definition of agriculture are mostly supplied districtwise by the official agencies, those pertaining to the broader definition are available for centres by weeks and are scattered over weekly bulletins so that their use would entail a painstaking compilation for every district over a period of eight years. Such a com-

⁴ Two villages were surveyed in 1955-56 and nine other in 1959-60.

pilation would clearly not be worthwhile if ancilliary activities are not quite significant. This consideration is of practical importance particularly in the context of work of estimation for twenty-six districts. It therefore seems better to stick to the usual industrial definition of agriculture.

We are thus interested in prices received by the primary producers out of which the different activities that make up agriculture in the industrial sense are rewarded. It seems that the farm harvest prices published in SCRs are the most suitable for our purpose. The DESAg circulated to the States in 1947 an improved uniform scheme for collecting data on farm harvest prices, which has been adopted by most of the States. Under this scheme the farm harvest price is defined as "the average wholesale price at which the commodity is disposed of by the producer at the village site during the specified harvesting period."⁵ This is a price at the point of production and not at the point of sale, and hence is more relevant to the industrial definition of agriculture which we have chosen to adopt.

5

Collection of Agricultural Prices in India
(Ministry of Food and Agriculture, Government of India,
1954), p. 15.

The NIC and the C.S.O. (in its NIS) opted in favour of the wholesale prices during harvest periods as against the farm harvest prices. One consideration that guided this choice relates to the nature of the prices shown in the SCRs of the different States. The NIC pointed out that the farm harvest prices shown in many of the SCRs were really retail prices and hence would include a large amount of trade margin. When one's interest is in estimation of income from agriculture at the national level the lack of uniformity among the different States in the nature of prices collected, though known by the same name, is a sufficient argument against the use of data on these prices. The problem however does not arise in the case of data for the districts of Maharashtra. Since 1949-50 the data on farm harvest prices collected in the Bombay State have been based upon the uniform definition suggested by the DESAg.⁶ The data on farm harvest prices since 1951-52 in Madhya Pradesh and Hyderabad have been in accordance with DESAg's improved scheme.⁷ Thus throughout the period in which we are interested the farm harvest prices available for Maharashtra districts are the ones most relevant to an industrial definition of agriculture.

⁶ DESAg: Farm (Harvest) Prices of Principal Crops, 1947-48 to 1954-55, p. (i). This publication will be referred to hereinafter as FHPPC.

⁷ FHPPC, p. (i).

Another consideration which weighed with the NIC and the C.S.O. was the scope of the data available. The NIC decided against farm harvest prices as data of a suitable type were available only for some of the States in India. This means, as stated above, that the data for some States was not of the appropriate nature. A further aspect of the scope of data relates to the number of crops covered by the data. Thus one of the reasons why the C.S.O. opted against farm harvest prices is that these prices were available only for 10 or 12 major crops. The C.S.O. made estimates of income from agriculture by evaluating the outturn of several crops Statewise. From the appendix in NIS on sources of prices data it appears that the outturn of the following crops in the reorganized Bombay State (which then included Maharashtra districts) was evaluated crop by crop: rice, wheat, jowar, bajri, maize, ragi, gram, tur, udid, mug, masur, linseed, sesamum, rape and mustard, groundnut, castor, coconut, gur, cotton (lint), cotton seeds, tobacco, chillies, ginger, turmeric and sweet potato. Of these crops masur, ginger, turmeric and sweet potato seem to be of little consequence in Maharashtra districts. Coconut is a crop of some significance only in Ratnagiri district. We consider only the remaining crops. Data on farm harvest prices are available for all the crops

except udid, mug, cotton seeds and chillies. This does not appear to be a serious lacuna.

It is true that even in the case of crops covered by data on farm harvest prices there are gaps here and there. Thus there are no data at all on prices of crops in Satara for 1957-58, in Parbhani for 1956-57, 1957-58 and 1958-59, and in Buldhana for 1954-55. There are also cases of extremely low coverage as is the case with data for Aurangabad and Bhir in 1955-56 when only the price of maize -- a relatively less important crop -- was reported in official statistics for these districts. However, by and large, the coverage of farm harvest prices data is not inadequate. The position with respect to Deccan districts is extremely satisfactory from year to year. As for Konkan districts prices of rice and ragi only are available almost consistently throughout the period. This is not a case of low coverage because among the crops enumerated in the preceding paragraph there are hardly any crops beside rice and ragi which are of any importance in Konkan districts. The data on prices of crops in Marathwada and Vidarbha districts have distinctly improved in coverage since 1956-57 with the formation of the reorganized Bombay State. In the preceding five years the published data on farm harvest prices, though not wholly inadequate,

left much to be desired, particularly in the case of Marathwada districts. It may be noted in this context that in the absence of any data relating to a region it is customary to use the data for a neighbouring region. Probably it is less objectionable to use for a district the price of a crop in a neighbouring district or districts than to use for a State the price in a contiguous State.

The C.S.O. estimated the value of each crop with the help of wholesale prices (averaged over harvest periods) drawn from such sources as the 'Supplement to the State Gazette', 'Weekly Bulletin of Wholesale Prices of Foodgrains', the State Statistical Bulletins and special returns furnishing unpublished data obtained from different State Statistical Bureaus. Appendix 2-1 in the NIS shows the number of price observations used for deriving price averages. One finds that except for rice, wheat, jowar and groundnut the observations in respect of every crop in the reorganized Bombay State were quite few ranging between 1 and 5.⁸ It appears that data on observations so limited in extent, though probably useful at the State level, cannot be used to

⁸ On enquiry with the C.S.O. it was gathered that the number of price observations refers to the number of centres for which the prices are reported. This means that in the case of crops mentioned in the text the average for the whole reorganised Bombay State was based upon data for very few centres. Further, not all these centres would be in Maharashtra.

obtain satisfactory price averages for each of the 26 districts of Maharashtra.

An additional consideration which influenced C.S.O.'s decision with regard to farm harvest prices is the fact that these prices for any year are available with a time lag. Evidently this fact is of little importance for a historical study of income from agriculture. The C.S.O. also argued against the use of farm harvest prices to evaluate agricultural output on the ground that different methods of averaging were used in different parts of the country. The problem does not seem to arise in the case of the districts of Maharashtra. It appears from DESAg's FHPPC that in any case since 1951-52 the returns of farm harvest prices of Bombay (old), Madhya Pradesh and Hyderabad have been in accordance with the improved scheme of the DESAg. There has thus been a uniformity in the method of averaging followed for the different districts of Maharashtra.

One has, however, to consider how far the method of averaging employed, though uniform, is likely to yield a representative price. The method to obtain an average farm harvest price in a district recommended under DESAg's improved scheme, and presumably followed since 1951-52 in Maharashtra districts, is as follows. "The price data are to be collected every week from a selected number of

villages, selected on a purposive basis, during the specified harvest period of six to eight weeks. The weekly prices are to be averaged into tehsil and district averages by taking their simple mean."⁹ There are different views as regards the best method of averaging price observations at the State level.¹⁰ But probably at the district level the arithmetic mean is quite suitable.

Finally, the farm harvest price is an average of price observations made during the harvesting season. The use of this price as a representative price to obtain the value of crop accruing to the primary producer would involve the assumption that the bulk of the produce is sold by the producer during the harvest period only. The NIC made this assumption. Though some data on market arrivals of principal foodgrains cited by the C.S.O. in NIS cast doubt on the assumption the C.S.O. also used average wholesale prices over the harvest period only in view of the paucity of data on market arrivals. There seems to be no alternative here to following a similar procedure in the case of farm harvest prices.

⁹ Collection of Agricultural Prices in India (Ministry of Food and Agriculture, Government of India, 1954), p. 15.

¹⁰ See C.S.O., Government of India, NIS, p. 32.

Thus the farm harvest price is being preferred here to the wholesale price. It will however be noted that the whole of the produce is not marketed by the farmer, a part being retained for personal consumption. Probably the more relevant price for evaluating this outturn is the average price over the whole year. The average price in the harvesting season is likely to be lower than prices in the other months as during the harvesting period supply is likely to be quite large in relation to demand. Under the circumstances if a significant proportion of the produce is held back by the primary producers evaluation of the whole output by farm harvest prices would result in some underestimation of the value of the output.¹¹ There is clearly no way of knowing the extent of this underestimation, if any.

We shall now consider the data on farm harvest prices to be used in evaluating the outturn of crops. DESAg's FHPPC gives year-to-year data districtwise for all the States upto 1954-55. The coverage by crops however is not the same for the three States in which we are

Also, M. Mukherjee: On the Appropriateness of the Price Average to be used for obtaining the value of output in Agriculture, in V.K.R.V.Rao and others (edt.) : Papers on National Income and Allied Topics, Vol. I (Asia Publishing House, 1960), pp. 33-38.

¹¹ Harry T. Oshima : 'National Income Statistics of Underdeveloped Countries', Journal of the American Statistical Association, June, 1957, Vol. 52, Number 278, p. 164.

interested, viz., Bombay, Madhya Pradesh and Hyderabad. It is the least extensive for Madhya Pradesh, the crops covered by the data being rice, jowar, wheat, gram, sesamum, linseed and cotton. The data for Hyderabad show additionally farm harvest prices of maize, barley, tur, castor seed and tobacco. The data relating to Bombay State include besides the crops mentioned thus far also bajri, ragi, sugar raw (gul), potatoes, groundnut, and rape and mustard.

Apart from FHPPC, SCRMP for the years 1953-54, 1954-55 and 1955-56 show farm harvest prices in Vidarbha districts.¹² Prices of the following crops are given : rice, jowar, bajri, maize, wheat, gram, sugarcane, sesamum, groundnut, linseed, cotton, masur, peas and lakh.¹³ Some data on prices in 1951-52 relating to Vidarbha districts are obtained from 'Tables of Agricultural Statistics' for that year issued by the Government of Madhya Pradesh. The SCRB gives the relevant data for Konkan and Deccan districts upto 1955-56 and for all the Maharashtra districts

¹² Some of the data in SCRMP are not usable. Thus SCRMPs, 1953-54 and 1954-55 furnish wholesale prices during a single fortnight for some crops for want of data on farm harvest prices. Then again SCRMPs give data separately for several varieties of rice and cotton respectively or for only a single variety (rather than the crop as a whole) of jowar, wheat and sesamum. It seems more advisable in such cases to rely upon FHPPC if data are available.

¹³ Besides, prices of potato and tobacco in 1953-54 and 1954-55, of castor in 1954-55 and 1955-56, and of tur in 1955-56, are shown in SCRMP.

in the year 1955-56,¹⁴ 1956-57, 1957-58 and 1958-59.

The crops covered by the data are: rice (paddy), wheat, jowar, bajri, barley, ragi, maize, kodra, tur dal, gram, cotton, sugar raw (gul), potatoes, groundnut, castor seed, linseed, rape, mustard, sesamum, tobacco, ginger, pepper and mesta (ambadi). We take from SCRs whatever data on farm harvest prices that are available and turn to FHPPC for additional data. It will be seen that FHPPC is the only available source upto 1954-55 in the case of Marathwada districts and in the year 1952-53 for Vidarbha districts.

As noted earlier there are gaps in the data. We do not get for any district prices of all the crops cited in all the years mentioned. In the case of gaps it is customary to use data in a neighbouring area. Probably in the present context it would be useful to take a separate note of the contiguity to a district in the same districts-group or region from that to one in a neighbouring region. We shall therefore analyse the problem of gaps in prices data from the point of view of a region.

For any districts-group gaps in prices data are possibly of two types. Firstly, no data on prices of the given crop in a particular year are available for any of

¹⁴ This is because it is the practice to give in SCRB of every year prices data additionally for the immediately preceding year also. Hence we get in SCRB, 1956-57 data relating to all the Maharashtra districts for 1955-56.

the districts in the region. We shall describe this as a 'year gap'. On the other hand data may be available in a year only for some of districts in the region. This is designated hereafter as a 'district gap'. Clearly a 'year gap' presents a more serious problem than a 'district gap'. When prices of a crop in a year are available for all the districts in the region we refer to the situation as one of 'complete coverage'. The following table (Table 9.1) summarises the gaps in the data on farm harvest prices obtainable in FHPPC, SCRMP, 'Tables of Agricultural Statistics' (Madhya Pradesh), and SCRB.

Since 'complete coverage' is the most desirable situation the position in Konkan and Deccan appears to be more satisfactory on the whole than that respectively in Vidarbha and Marathwada. It may however be stated that in all the four regions the crops coming under 'complete coverage' were those which were the more important in the respective regions. Further, the 'district gap' is certainly preferable to the 'year gap'. If we, therefore, add up the number of crops respectively under 'complete coverage' and under 'district gap' the coverage of year-by-year data on prices in the four regions appears to be quite satisfactory, except in the case of Marathwada in 1951-52 and probably Vidarbha in 1952-53. Finally,

TABLE 9.1 : GAPS IN PRICES DATA

Years	Konkan			Deccan			Vidarbha			Marathwada		
	Y	D	C	Y	D	C	Y	D	C	Y	D	C
1951-52	2	3	2	-	8	8	5	7	4	10	1	4
1952-53	1	2	4	-	7	9	9	6	1	5	7	3
1953-54	1	2	4	-	5	11	4	11	1	6	6	3
1954-55	-	3	4	-	5	11	3	13	-	5	5	5
1955-56	-	3	4	-	8	8	3	11	2	6	9	-
1956-57	4	2	1	-	12	4	1	14	1	-	15	-
1957-58	2	4	1	-	16	-	2	11	3	1	14	-
1958-59	2	4	1	-	8	8	2	11	3	-	4	11

N.B. :- (1) Y = 'Year gap'; D = 'District gap';
C = 'Complete coverage'.

(2) Figures indicate the number of crops to which the relevant description applies.

(3) SCRB gives prices for Thana and Bombay Suburban districts together.

(4) Crops to which the data position tabulated relates (regionwise) :-

Konkan : paddy, ragi, kodra, turdal, gram, sugar raw (gul), and sesamum (Total:7).

Deccan : the above crops (with the exception of kodra) plus wheat, jowar, bajri, maize, cotton, potatoes, groundnut, castor seed, linseed, and tobacco (Total:16).

Vidarbha : Same as for Deccan (Total:16).

Marathwada : Same as for Deccan with the exception of potato (Total: 15).

with regard to the 'district gap' it is found that for the more important crops the gap, in most cases, is minor which means either that data on prices of an important crop are available for a majority of districts in the region or that these are available for a district or two which mainly accounted for the crop in the region. It seems reasonable to conclude that the data obtainable are adequate enough to give us confidence in the value estimates prepared.

Our interest is in deriving the value of each of the relevant crops in every district in the years 1951-52 to 1958-59. We must therefore state what prices we shall be using in the event of gaps. Let us consider the 'district gap' first. A 'district gap' occurs when prices of a crop in a year are not obtainable for some of the districts in a region. In such a case we calculate the price in a district by taking simple average of prices in contiguous districts in the same region for which data are available. It is possible that in specific cases price of a crop is not available for any of the contiguous districts in the region. Thus, for example, the only district contiguous to Kolhapur in Deccan is Sangli. If data on prices of a crop are given for neither Kolhapur nor Sangli, the question of obtaining the price in Kolhapur would remain. In such a case we

use a simple average of prices in all the districts in the same region for which data are published in official sources.

A 'year gap' occurs when no data are available for any of the districts in a region. Clearly the method outlined in the previous paragraph is pointless in this context. The problem of the 'year gap' does not arise for Deccan districts. A 'year gap' occurs for some of the crops in Konkan in some years. But all these crops, except kodra, are insignificant in Konkan districts.

There are no data on prices of kodra in Konkan in 1956-57. In fact SCRB, 1956-57, gives prices of this crop in the year only in Osmanabad and Bhandara. However, it would not be proper to use the average of prices in districts of Marathwada and Vidarbha, neither of which is contiguous to Konkan. Instead the ratio between the price of paddy and that of kodra is calculated for every Konkan district separately for the two years 1957-58 and 1958-59. An average of the two ratios for the two years is assumed to apply in 1956-57. Since data on prices of paddy in 1956-57 are obtainable we can derive the prices of kodra in that year in Konkan districts. As for the remaining crops the method we follow is to adopt for any Konkan district a simple average of the prices of the

relevant crop in the contiguous districts in Deccan for which data are available. We repeat price derived for the Thana in/case of Bombay Suburban district.

There are 'year gaps' for some fairly important crops in Vidarbha and Marathwada in some of the years. The method of using an average of prices in contiguous districts in a neighbouring region in Maharashtra State is not suitable, particularly to Vidarbha districts. Some of the Vidarbha districts, viz., Amravati, Wardha, Nagpur, Bhandara and Chanda, have no districts contiguous to them in any region of Maharashtra other than Vidarbha itself. The districts in a neighbouring region adjoining Buldhana, Akola and Yeotmal are mostly those of Marathwada, and data for this region equally suffer from the 'year gap'.

Under the circumstance we use the following method. We calculate for Deccan districts as a whole the percentage difference between the price of the relevant commodity in the year in which the gap occurs in Marathwada/Vidarbha and its price in the nearest later year for which data relating to Marathwada/Vidarbha are available. By assuming the same percentage difference separately for each district of Marathwada/Vidarbha we obtain the prices of the crop in the respective districts in the year in question. In other words, on the basis of per-

centage differences in Deccan prices at two time points we project backwards the available prices data for each of the Marathwada/Vidarbha districts. The method of projecting backwards rather than forwards is followed because the availability of data on prices in Marathwada and Vidarbha districts improved considerably in later years. There are one or two minor exceptions. Prices of tobacco in two Vidarbha districts (i.e. Akola and Amravati) in 1954-55 only are available. No data were reported for other years. Hence data for years following 1954-55 have to be derived by projecting forwards. The same applies to ragi, the price only in Bhandara in just one year, viz., 1956-57 being reported. Prices in 1957-58 and 1958-59 are thus obtained by projecting the 1956-57 data forwards.

Special attention must be drawn to evaluation of the outturn of paddy and cotton in Vidarbha districts. It will be seen that since we have adopted the industrial definition of agriculture it is more appropriate to evaluate the outturn of paddy than that of rice. The primary sources cited give data on prices of paddy and not rice, the only exception being the data relating to Vidarbha districts upto 1955-56 which are for cleaned rice. There is no way of obtaining paddy prices in Vidarbha in the relevant years. However, rice was quite

an unimportant crop in five of the Vidarbha districts, viz. Buldhana, Akola, Amravati, Yeotmal and Wardha. We evaluate the outturn of rice in these districts in the years 1951-52 to 1954-55 with the help of FHPPC data only. As for 1955-56, SCRB, 1956-57 gives price of paddy in Yeotmal only among these five districts. We assume the same price in all the five districts.

Bhandara and Chanda have been the most important rice-growing districts in Vidarbha. Though rice was not quite an important crop in Nagpur it was not as insignificant as in the remaining five districts. We calculate the percentage change in the price of paddy from year to year in Deccan as a whole. The same percentage change is assumed in the case of Bhandara for which alone among these three districts SCRB, 1956-57 gives price of paddy in 1955-56. We do not use percentage change in price in Marathwada which is more of a contiguous region because Marathwada itself had a 'year gap' in 1951-52. The prices of paddy in Bhandara in the years 1951-52 to 1954-55 derived in this way are used for Chanda and Nagpur also. In 1955-56 also the price in Chanda as also in Nagpur is assumed to be the same as that in Bhandara.

FHPPC gives prices of ginned cotton in Vidarbha in

the years 1951-52 to 1954-55. The data relating to Deccan and Marathwada are for unginned cotton. Since the industrial definition of agriculture is being adopted here it seems more appropriate to evaluate the outturn of kapas (i.e. seed-cotton) than cotton (lint). It will be noted that it is kapas which is ordinarily sold by the primary producers in India. "Unlike the practice in the United States, in India cotton is sold by producers usually in the form of kapas (seed cotton). Only negligible quantities are sold as lint."¹⁵

We have to derive the prices of unginned cotton in Vidarbha in the four years. A method similar to that used to obtain paddy prices is followed here also. SCRB, 1956-57 gives prices of unginned cotton in Buldhana, Akola, Yeotmal and Wardha in 1955-56. The prices of unginned cotton in the remaining Vidarbha districts in 1955-56 are obtained with the help of the method outlined earlier in connection with the 'district gap'. The prices in the earlier four years are arrived at by assuming the same percentage difference in year-by-year prices upto 1955-56 in each of the Vidarbha districts on the one hand and in Deccan districts as a whole on the other.

The percentage change in Marathwada is not used as that region itself had a 'year gap' in 1951-52.

A further point that needs to be considered is as regards the prices data relating to the districts which have undergone revision of boundaries. The districts in question are : Thana, Dhulia, Kolhapur, Nanded, Osmanabad and Chanda. Strictly speaking, we require for all the eight years data pertaining to the districts as they are constituted at present. Only the data for Kolhapur and Osmanabad since 1955-56 would be satisfactory in this respect. Data for the other districts all throughout and for Kolhapur and Osmanabad before 1955-56 relate to the districts somewhat differently constituted. It will, however, be noted that a district price is a simple mean of prices in certain villages purposively selected. Unless, therefore, there has been a considerable variation in the geographical area of a district or at least a significant change in the cropping pattern of the newly-constituted district even with a small variation in geographical area, the price average for an older district can probably be used for the new district. From this point of view it seems that Osmanabad alone presents some problem as the geographical area of the old Osmanabad district was expanded by 47.6 percent in consequence of States reorganization. All the three talukas which were

added to Osmanabad district were formerly a part of Bidar district. Further, they accounted for 37.5 per cent of the area of Bidar district. In view of these facts we adjust the prices data for Osmanabad before 1954-55 in two ways. If FHPPC gives prices of a crop in Osmanabad and Bidar we use for Osmanabad a simple average of prices in Osmanabad and Bidar rather than the price shown for Osmanabad only. Secondly, if in^{the} case of a 'district gap' before 1954-55 data for Osmanabad are not available we take a simple average of prices in contiguous districts in Marathwada and the old Bidar district. Prices in 1955-56 are shown in SCRB, 1956-57.

Both the NIC and the C.S.O. made adjustments in their respective estimates of agricultural income for the country (based upon wholesale prices data) in order to take account of the fact that a part of the foodgrains produce was sold at procurement prices. Since procurement prices would be lower than wholesale prices the adjustment took the form of deflation of estimates. It would be necessary to consider this problem in the context of the present study.

Data on procurement prices as well as on respective amounts of the more important grains procured are furnished Statewise in DESAg's 'Bulletin on Food Statistics', an annual publication. Upto 1956 the data of relevance

here pertain to the States of Bombay, Madhya Pradesh and Hyderabad. From 1957 onwards data relating to Maharashtra have been given. It can be inferred from the data in the 'Bulletin on Food Statistics' that there has been no procurement of foodgrains in these areas since 1954-55. The problem is thus limited only to the three years 1951-52, 1952-53 and 1953-54. The States concerned in that case are Bombay, Madhya Pradesh and Hyderabad.

As, however, the data on procurement relate to States and not to districts it seems difficult to make any adjustment on this account in the estimates for the districts. In all probability this is not a very serious matter. It appears that the maximum quantity of cereals procured in the three States in a year in the period, 1951-52 to 1953-54, was in the neighbourhood of about 10 percent of the total outturn of cereals. This occurred in the earlier part of the period; in the latter part there was a substantial reduction in the proportion. Moreover, the 'Bulletin on Food Statistics' gives data on procurement prices in the State. It is seen that the more typical situation was that if the procurement price was higher than a district's farm harvest price in the case of some cereals, it was lower in the case of others. To the extent that the differences between the two sets of prices were inter-compensatory, the estimate of income

from foodgrains as a category would not be much affected even if no adjustment was made to allow for the procurement of foodgrains. No attempt would, therefore, be made to adjust the district-level estimates in an arbitrary way.

By making use of farm harvest prices given in FHPPC, SCRMP and SCRB as also prices derived by methods outlined above we are able to evaluate the outturn of crops, shown regionwise, in note (4) to Table 9.1. It will be seen that much of the data on prices of these crops are provided by primary sources. Further these crops were the most important ones in the respective regions accounting for the bulk of the gross cropped area under cultivation.

In earlier chapters we have estimated the outturn of additional crops but farm harvest prices data relating to these crops are not available. The crops are: (i) some of the minor pulses such as udid, mug, lakh and so on, (ii) chillies, and (iii) coconut and betelnut in Konkan districts. In NIS the C.S.O. evaluated the outturn separately of udid, mug and masur in reorganised Bombay State¹⁶ with the help of wholesale prices shown

¹⁶ This can be inferred from Appendix 2-1, which shows Statewise the number of price observations used in respect of important crops in 1958-59.

in the Statistical Supplement to the State Gazette. However, it seems that the number of price observations used for averaging are very few in number.¹⁷ Satisfactory districtwise averages cannot be calculated with such limited data. Further, if the data on wholesale prices are used these prices will have to be deflated to obtain prices accruing to primary producers. This would be highly arbitrary in the absence of data on price spreads.

Some of the reports on village surveys by the GIPE provide in their data on marketing of agricultural commodities information on the amount of commodity sold and the total value received by producers. From this information we can derive price per maund of the commodity. This is in fact the price received by producers. However, the data on 'pulses other than gram and tur' are not quite adequate. Only three reports (viz. those relating to (a) three villages in Jalgaon district for 1956-57, (b) four villages in Poona for 1957-58 and (c) nine villages in Satara for 1958-59), give the relevant data. It would not be wise to generalise for all the districts on the basis of these data, particularly because crops

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C.S.O., Government of India: NIS, App. 2-1, p.194. The number of price observations in the reorganized Bombay State are 4 each for udid and mug.

involved, though not major, were not of little significance in Maharashtra districts. In its estimation of the value of agricultural produce as part of the Maharashtra State Income in the year 1955-56 to 1958-59, the BESM assumed the farm harvest price of 'pulses other than gram and tur' in the whole State to be 90 percent of the weighted average price of gram and tur. We make a similar assumption only in the case of Konkan districts where pulses as a group were an absolutely minor variety of crops.

The Director of Land Records, Government of Madhya Pradesh has issued a publication, 'Farm Harvest Prices of Agricultural Commodities in Madhya Pradesh' separately for the years 1957-58 and 1958-59, which give prices of several crops in the districts of the new Madhya Pradesh State. There are prices of udid (both kharif and rabi), mug (both kharif and rabi), and lakh. In the issue for 1957-58 we get prices for 1955-56, the year in which Mahakoshal region of the present Madhya Pradesh State and Vidarbha constituted together the old State of Madhya Pradesh. For every district of Vidarbha we obtain a simple arithmetic average of prices of udid in 1955-56 in contiguous districts in Mahakoshal for which data are available. We use only kharif prices both because udid has been mainly a kharif crop in Vidarbha districts and

the data on rabi for 1955-56 are not shown. It is true that we obtain by this method prices only in some of the Vidarbha districts. We derive prices in the remaining districts by taking into account the contiguity of districts within Vidarbha. We project prices in 1955-56 so arrived at backwards and forwards to other years on the basis of the year-to-year percentage difference in the price of udid (kharif) in Mahakoshal region as calculated from regionwise prices data in 'Index Numbers of Farm (Harvest) Prices in Madhya Pradesh (1952-53 to 1959-60)' issued by the Director of Land Records, Government of Madhya Pradesh. In this way we obtain farm (harvest) prices of udid in Vidarbha districts upto 1956-57 as the publication on Index Numbers cited does not give prices data for 1957-58 and 1958-59.

The position in respect of lakh is more satisfactory. SCRMPs, 1953-54, 1954-55 and 1955-56 give farm harvest prices of lakh in some of the Vidarbha districts in these three years. We obtain the prices in the remaining districts by using the method outlined earlier in connection with the 'district gap'. Prices in 1951-52 and 1952-53 in every district are obtained by projecting the 1953-54 price backwards on the basis of the percentage difference from year to year in the prices in Mahakoshal region. Similarly the 1956-57 price is derived by

projecting forward the 1955-56 price. We thus get prices of udid and lakh upto 1956-57. The weighted price per ton of udid and lakh together in a year is used to estimate the value of all the remaining pulses taken as a group. As no prices data could be derived for 1957-58 and 1958-59, it is decided to use the ratio in 1955-56 between the weighted price per ton of gram and tur on the one hand and the weighted price per ton of all the remaining pulses on the other in order to obtain the composite price of 'pulses other than gram and tur' in 1957-58 and 1958-59. In Wardha there was no outturn either of udid or lakh in 1956-57; hence the same ratio is used to evaluate the outturn of 'other pulses' in this district in 1956-57 also.

The ratio between the weighted average price of gram and turn on the one hand and the weighted average price of the remaining pulses on the other in a year in Vidarbha as a whole is assumed to apply in the case of each district of Deccan and Marathwada. Thus the value of 'pulses other than gram and tur' in Deccan and Marathwada districts is estimated.

Chillies have been a relatively less important crop in Maharashtra Districts. The BESM evaluated the outturn of chillies in the whole State at average wholesale

prices and deflated this value by 15 percent to allow for the difference between wholesale prices in urban centres and farm harvest prices. We follow a similar method.

DESAg's 'Agricultural Prices in India' gives year-by-year wholesale prices of chillies Statewise. The publication also mentions the centre or centres in the respective States to which the prices reported relate. The two centres of relevance to us are Bombay in the Bombay State and Nagpur in the Madhya Pradesh State. The prices in Nagpur centre are shown for all the years in question whereas those in Bombay are available only from 1956 onwards. The wholesale prices in Bombay in the earlier years are obtained by assuming the same year-to-year percentage change in price in Bombay as in Nagpur. Prices are given by calendar years whereas we require prices in harvesting seasons. It seems from the MR on chillies that the harvesting-marketing season for chillies both in the old Bombay and Madhya Pradesh States extended from November to March. We assume that the wholesale price in any agricultural year is the simple average of the prices in two successive calendar years. Thus an average of prices in 1951 and 1952 is assumed to be the relevant price in the agricultural year, 1951-52. Prices in Bombay are treated as the relevant wholesale prices

in Deccan and those in Nagpur as the prices in Vidarbha.

It is necessary to deflate these prices to obtain the farm harvest prices. On the basis of data in the MR on chillies pertaining to the margin between the producer's price and the wholesale price in the old Bombay and Madhya Pradesh States we deflate the wholesale price in Deccan by 25 percent and that in Vidarbha by 10 percent. The farm harvest prices so derived are used to evaluate the outturn of chillies in Deccan and Vidarbha. The value of chillies in a region is distributed among districts in proportion to their relative outturn.

There are no data in DESAg's publication on prices in centres either in Marathwada or in Konkan. The ratio in a year between the weighted farm harvest price of foodgrains and the derived farm harvest price of chillies in Vidarbha region as a whole is assumed to apply to Marathwada. As chillies was an absolutely unimportant crop in Konkan we evaluate the outturn in Konkan every year by means of the relevant Deccan price. The value of the crop in Konkan or Marathwada is again distributed among the respective districts in proportion to the relative outturn.

DESAg's 'Agricultural Prices in India' gives wholesale prices of coconut in the Bombay State which really

relate to Ratnagiri town. The prices are available from 1956 onwards. The prices for the earlier years are obtained by assuming the same year-by-year percentage change in prices before 1956 as in Mangalore in Mysore State shown in the DESAg's publication. The price in an agricultural year is taken to be a simple average of the prices in the relevant successive calendar years. It seems from data on price-spread in Bombay shown in MR on 'Coconut and Coconut Products' that the grower got about 70 percent of the wholesale price. We, therefore, deflate the wholesale prices by 30 percent and evaluate the outturn of coconut in Ratnagiri district. Using the same prices we estimate the value of coconut in the remaining Konkan districts. Betelnut in Konkan districts is considered later along with the residuary category of 'other condiments and spices'.

Before we take up the estimation of value contributed by the residuary crops it is necessary to consider one category, viz., fruits and vegetables. Data on prices of fruits and vegetables of any sort are rather scanty. It would be instructive to survey the data on the more important varieties in this category in Maharashtra districts so as to feel the way towards a workably suitable method of obtaining the value of this category. The four important crops to consider are : banana in

Jalgaon district, mango in Ratnagiri, oranges in Nagpur and onions in Nasik. Two facts should be noted here. The four crops together accounted for a substantial proportion of area under fruits and vegetables in the State. Secondly, Jalgaon had nearly half of acreage under banana in the State, Ratnagiri about one-third of that under mango, Nagpur over 60 percent of acreage under oranges and Nasik around 40 percent of that under onions. If reliable prices data relating to the four crops in the four districts were available at least for some of the years estimates of value of the whole category somewhat satisfactory in nature could be framed. Unfortunately the data are extremely scrappy and not appropriate for our purpose.

The report on the survey of three villages of Jalgaon district prepared by the GIPE gives some information relating to banana. Probably the fact that the information pertained only to three villages in the district could be ignored as these villages were selected for survey specifically because of extensive cultivation of banana and other garden crops in the villages. However, we get information not on prices of banana but on value per acre, and further the information relates to only one year, viz., 1956-57.

Mango has been grown principally in Konkan region,

particularly in the district of Ratnagiri. However, the only source which gives prices data of any kind is the MR on mango. But data here are hardly of any use to us. The MR shows average wholesale monthly prices in Bombay city. Then again, the last year for which the prices are given is 1950, i.e. a year before the initial year of our period.

A publication issued on behalf of the Agriculture Department, Government of Madhya Pradesh¹⁸ gives some data on orchard prices of oranges in some villages in Nagpur district. It will be noted that Nagpur has been the principal orange-growing district in Vidarbha. The prices reported in the publication are taken from the records of some important cultivators in four villages. However, the data relate to only two years, 1951-52 and 1952-53. Then again, the publication shows prices per cart, each cart containing about 2500 to 3000 fruits. This kind of prices data would be difficult to use.

Finally, the report on the survey of three villages in Nasik district prepared by the GIPE gives results of a special crop study of onion. The three villages are located in Niphad taluka which has been the main onion-

¹⁸ P.B.Dixit : Report on the Marketing of Agricultural Commodities, No. 6, Orange (Agriculture Department, Government of Madhya Pradesh, 1955).

growing area in the district accounting for over 40 per cent of acreage under the crop in Nasik. However, the data on onion relate to only one year 1955-56. What is equally important is that information on price of onions which can be derived from this study appears to be unsatisfactory for our purpose. It is stated that the producer received Rs. 9.50 per bag sold, each bag containing 2 to 2 1/2 maunds. Besides these receipts accrued only from the kharif crop. No data on revenue from the rabi crop are made available.

In view of the fact that the scanty data on prices of some of the important fruits and vegetables in Maharashtra are quite unsatisfactory it is essential to devise a method for estimating the value per acre of this category of crops. The BESM conducted some type studies on a wide variety of fruits and vegetables in Yeotmal, Akola, Dhulia and Poona districts in order to investigate into the yields of different kinds of fruits and vegetables. It was estimated that the value of yield per acre of fruits and vegetables for the year 1957-58 was Rs. 1140.¹⁹ This will be treated as the per acre value of the category in

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See M.A.Telang and B.W.Chavan : Report on the State Income of Maharashtra, 1955-56 to 1958-59 (Quarterly Bulletin of Economics and Statistics, Bureau of Economics and Statistics, Government of Maharashtra, July-September, 1961), p. 22.

the whole of Maharashtra in 1957-58. In order to estimate the value per acre in Maharashtra in the other years we employ the following method. The income from potato in a number of relatively important potato-growing districts in Maharashtra has already been estimated. The districts are : Nasik, Ahmednagar, Poona, Satara, Sangli, Kolhapur (only in 1958-59), Nagpur and Bhandara. The weighted average value per acre of potato in all these districts in 1957-58 comes to Rs. 677.67. This is as good as the value per acre of the crop in Maharashtra in that year. It is seen that the value per acre under fruits and vegetables in Maharashtra estimated earlier, viz., Rs. 1140, is 168 percent of the value per acre of potato. We assume the same relationship between the two per acre values in all the other years and derive the value per acre of fruits and vegetables in Maharashtra year-by-year. It is now possible to estimate the income from the category in Maharashtra every year. The income in Maharashtra is distributed among the districts on the basis of the relative area under this category of crops.

We now turn to the residuary crops. Ordinarily these are crops which, for most part, are believed to be low-yielding. In most of the Maharashtra districts the outturn of 'other cereals' was quite small; in a few, almost 'nil'. The BESM assumed price of 'other cereals'

to be 90 percent of that of kodra. We make this assumption in the case of Konkan districts.

The data on prices of kodra in Deccan districts are not adequate for most of the years. The coverage of prices data in 1951-52 and 1953-54 appears to be somewhat satisfactory as the data are available for five districts, viz. Dhulia, Nasik, Satara, Sangli and Kolhapur. We obtain prices for the remaining Deccan districts by employing the method explained earlier in connection with the 'district gap'. The value of kodra in each district in the two years can now be estimated. The value of the remaining 'residuary cereals' in each of the two years is derived on the basis of 90 percent of the price of kodra. The prices of 'other cereals' (inclusive of kodra) in the two years in each Deccan district can now be obtained. We then calculate the average of ratios in the two years between the price of 'other cereals' (inclusive of kodra) on the one hand and that of jowar (which has been the most important among inferior foodgrains in Deccan districts) on the other. Table 9.2 shows these average ratios for Deccan districts. We evaluate the outturn of 'other cereals' (inclusive of kodra) in the remaining six years by assuming the price of the residuary cereals to be 60 percent of that of jowar in Dhulia, Jalgaon, Nasik, Ahmednagar and Sholapur

TABLE 9.2 : AVERAGE PROPORTION OF PRICE OF 'OTHER CEREALS' TO THAT OF JOWAR

(Percentages)

District	Proportion
Dhulia	60.77
Jalgaon	58.60
Nasik	61.95
Ahmednagar	62.03
Poona	48.91
Sholapur	59.50
Satara	50.05
Sangli	65.63
Kolhapur	104.23

districts, 50 per cent in Poona and Satara, and 65 per cent in Sangli. In Kolhapur the price of 'other cereals' is assumed to be the same as that of jowar.

SCRBs 1956-57, 1957-58 and 1958-59 give the prices of kodra in some of the districts of Vidarbha and Marathwada. Data relating to Bhandara district in 1956-57, 1957-58 and 1958-59 are provided. We obtain the data on outturn in SCRB. Using the outturn and prices data on the same lines as similar data for Deccan districts we obtain the average ratio in the three years between the

price of 'other cereals' on the one hand and that of jowar on the other in Bhandara district. The proportion comes to 75.90 percent. We assume the price of residuary cereals in Vidarbha districts in every year to be 75 percent of that of jowar. In the case of Bhandara the proportion is used only for the years 1951-52 to 1955-56.

In SCRB we get the price of kodra in Osmanabad district of Marathwada in 1956-57, in Aurangabad in 1957-58, and in Parbhani and Osmanabad in 1958-59. SCRB gives outturn figures also. By working on the prices and outturn data in the same way as was done in the case of Bhandara we obtain the ratio between the two sets of prices (mentioned earlier) in Aurangabad in 1956-57 and in Parbhani in 1958-59 as also the average ratio in Osmanabad for the two years, 1956-57 and 1958-59. The proportions for Aurangabad, Parbhani and Osmanabad work out to 75.29, 127.00 and 104.84 percent respectively. The outturn of 'other cereals' in the remaining years is estimated on the basis of a price 75 percent of that of jowar in Aurangabad and 125 percent in Parbhani. In Osmanabad the price of the residuary cereals in the remaining six years is assumed to be the same as that of jowar. A similar assumption is made in the case of the two remaining districts of Marathwada, viz., Bhair and Nanded (which are contiguous to Osmanabad), and the out-

turn of 'other cereals' in all the eight years evaluated.

'Other sugars' are a non-existent category in all the districts of Maharashtra. The BESM assumed the value per acre of 'other condiments and spices' to be 90 percent of that of chillies. Pepper and ginger which have been relatively higher-priced than chillies were hardly grown in Maharashtra districts in the period under study. Moreover, the area under 'other condiments and spices' was quite small in most of the districts. We shall, therefore, adopt the formula of the BESM only, except in the case of Ratnagiri and Kolaba districts in Konkan. In these two districts betelnut has been a fairly important crop. On the basis of a comparison of average yields respectively of chillies and betelnuts in these districts²⁰ as also of wholesale prices of the two crops shown in DESAg's 'Agricultural Prices in India' we assume the per acre value of betelnut to be twice that of chillies. In the case of the remaining condiments and spices the value per acre is assumed to be 90 percent of that of chillies.

The value of 'other fibres' was obtained by the BESM

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BCAS shows average yield of betelnuts in the two districts estimated on the basis of pilot sample surveys.

by assuming a ratio between the value per acre of the category and that of kapas (seed-cotton). Area under 'other fibres' was negligibly small in most of the Maharashtra districts except in those of Marathwada. Even in Marathwada area under 'other fibres' as a proportion of total area under fibres was quite small, the bulk of the area under this category being under cotton. The SCRB area data show that the two predominant crops in the category, 'other fibres' in all the Maharashtra districts were ambadi (mesta) and sannhemp. The SCRBs 1957-58 and 1958-59 show farm harvest prices of ambadi in Marathwada districts²¹ and Akola (which has been one of the main districts growing this crop in Vidarbha). Using these prices along with area and outturn data on mesta in MHG we obtain value of yield per acre of the crop in each of the two years in the six districts mentioned. Table 9.3 shows the relationship between value of yield per acre of kapas and that of ambadi in Marathwada region as a whole separately in the two years.

It seems from the table that the relationship between the respective per acre values of the two crops in the two years was broadly similar, which probably suggests

²¹ No price is shown for Parbhani in 1957-58. This is assumed to be a simple average of the prices in the remaining four districts all of which are contiguous to Parbhani.

TABLE 9.3 : VALUE PER ACRE RESPECTIVELY OF AMBADI AND COTTON IN MARATHWADA

(Value per acre: Rs. and Paise)

Year	Value per acre of ambadi	Value per acre of cotton	(2) as percent of (3)	Average percentage
1	2	3	4	5
1957-58	300.18	67.48	444.84	462.00
1958-59	294.16	61.39	479.17	

that the average percentage reflects the general relationship between value per acre respectively of ambadi and kapas in Marathwada over the period under review. On a study of the distribution of area under 'other fibres' as between sannhemp and ambadi in Marathwada districts we assume that the value per acre under 'other fibres' was four times that of kapas in these districts throughout the period.

A similar exercise in ^{the} case of Akola reveals that the relevant proportion was 172.73 percent in 1957-58 and 176.13 percent in 1958-59 the average percentage being 174.43. Ambadi was of some significance among 'other fibres' only in Buldhana, Akola, Amravati and Yeotmal. For these four districts we assume value per acre of

residuary fibres to be 150 percent of that of kapas. In the remaining four districts 'fibres other than cotton' was an insignificant category. For Wardha, Nagpur and Chanda we assume the value per acre of the residuary category to be the same as that of kapas. Bhandara had hardly any area under cotton but some under residuary fibres. The value per acre of kapas in Nagpur is used to obtain the value of 'other fibres' in Bhandara.

We do not have any data on mesta prices in Deccan districts. As Marathwada is a region contiguous to Deccan districts one alternative is to assume for these districts the same relationship between the per acre value respectively of kapas and 'other fibres' as we did for Marathwada. However, the value per acre of kapas in several Deccan districts was much higher than that in Marathwada districts throughout the period.²² In Deccan as a whole it was Rs. 151.88 in 1957-58 and Rs. 125.25 in 1958-59. Further, ambadi was not as important a crop among 'other fibres' in Deccan as in Marathwada. We, therefore, assume the value per acre of 'other fibres' in Deccan districts to be only twice that of kapas. There was no area under cotton in Konkan districts but some other residuary fibres. Value per acre of 'other fibres' in

22 See Appendix III below.

Deccan as a whole is used in the case of each of the Konkan districts.

Coming to 'other oilseeds' the BESM adopts a per acre value 90 percent of that of castor seed. However, there was hardly any outturn of castor seed in several districts of Maharashtra. We, therefore, employ a different method. The N.S.S. publication No. 32 on cost of cultivation gives value per acre of groundnut, sesamum, linseed, castor, rape and mustard and 'other oilseeds' for the whole country. In Konkan districts sesamum was the relatively important oilseed, the remaining oilseeds mentioned separately above hardly producing any yield.²³ From the N.S.S. data we find that value per acre under 'other oilseeds' (on an average of three rounds) was 81.7 percent of the corresponding value per acre under sesamum. For want of a better alternative we assume that value per acre of 'other oilseeds' in each Konkan district was 80 percent of that of sesamum. There was no outturn of sesamum in Thana in 1952-53. We assume value per acre under 'other oilseeds' in Thana in this year to be the same as that in Kolaba.

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The value contributed by coconut has already been estimated earlier.

In all Deccan and Marathwada districts groundnut was the overwhelmingly important oilseed. Neither in the case of Central India nor West India the N.S.S. publication gives both value per acre under groundnut and that under 'other oilseeds'. We, therefore, assume for the districts mentioned all-India relationships between these values. Accordingly the value per acre under 'other oilseeds' is taken to be 35 percent of that of groundnut. The same proportion is assumed in the case of all Vidarbha districts (except Bhandara and Chanda) where groundnut was a fairly important oilseed. In Bhandara linseed was the only important oilseed, and in Chanda it was quite important. Accordingly in the light of N.S.S. data the per acre value of 'other oilseeds' in Bhandara and Chanda is taken to be 85 percent of that of linseed.

'Other drugs and narcotics' were an insignificant category in Maharashtra districts. We follow the BESM by assuming the value per acre to be 90 percent of that of tobacco. If in any or all years there was no outturn of tobacco in a district, 90 percent of per acre value of tobacco in the region to which the district belongs, is used. There was some area under 'other drugs and narcotics' only in Thana among Konkan districts. As there was no area under tobacco in Thana we use a weighted average

value per acre of 'other drugs and narcotics' in the neighbouring Deccan districts of Nasik, Poona and Ahmadnagar.

The BESM adopts for fodder crops a value per acre of 90 percent of that of 'other cereals'. In NIS the C.S.O. assumed this value to be the same as that of small millets inclusive of millet straw. Since we are not evaluating 'small millets' separately for Maharashtra districts it would be advisable to relate the per acre value of fodder crops to that of 'other cereals'. From the N.S.S. publication we find that in Central India -- the nearest population zone of interest to us and for which the relevant data are given -- the value per acre of small millets (inclusive of straw) was 97 percent of the average value per acre of 'small millets and minor cereals' which together comprise what we have described here as 'other cereals'. We shall, therefore, obtain the value of fodder crops on the assumption that the per acre value of this category was 95 percent of that of 'other cereals'. It will be noted that in this context 'other cereals' are inclusive of kodra though tables on agricultural income in Konkan districts at the end show estimates separately for kodra and residuary cereals. On the other hand maize is excluded from the residuary category for the purpose here though in the income tables at the end it is merged into 'other cereals'. If there was no outturn of

'other cereals' in a district in a year the value per acre under fodder crops is taken to be 95 percent of the value per acre under 'other cereals' in the region to which the district belongs. In the case of Bombay Suburban district the per acre value of fodder crops is assumed to be the same as that in Thana.

The area under 'miscellaneous food and non-food crops' has been absolutely negligible in Maharashtra districts. On the basis of various enquiries the Report on the State Income of Madhya Pradesh assumed the value per acre of this category to be Rs. 40 in 1950-51. The BESM adopted the same value for the four years, 1955-56 to 1958-59 for which State income was estimated. We shall, however, assume this value for all the districts only for 1951-52 and 1952-53. It is projected to the remaining years by using the index numbers of farm harvest prices (1952-53 to 1959-60) relating to all agricultural commodities for the neighbouring State of Madhya Pradesh.²⁴

When we turn to evaluation of the byproducts it is seen that no district-level data are at all available. Hence the estimates of value would be relatively more

²⁴

Director of Land Records, Government of Madhya Pradesh : Index Numbers of Farm (Harvest) Prices in Madhya Pradesh, 1952-53 to 1959-60.

arbitrary. However, ordinarily the price per unit of byproducts is likely to be quite low. It is, therefore, expected that the margin of error involved in an estimate of income from agriculture by assuming for a few of the items arbitrary prices at a low level would be small. With the help of N.S.S. data on quantity and value of straw per acre we estimate for 1951-52 and 1952-53, composite prices of straw as a whole separately for Konkan, Deccan, Marathwada and Vidarbha. For this purpose we use N.S.S. data relating to the straw from the more important foodgrains, the regionwise breakdown being as follows: (a) Konkan -- paddy and ragi, (b) Deccan -- paddy, jowar and bajri, (c) Vidarbha -- paddy, jowar and small millets, and (d) Marathwada -- jowar, bajri and small millets. The N.S.S. data on quantity and value of straw from different foodgrains used for the purpose relate to the same population zones as were taken into account when estimating average yield of straw in the respective districts-groups. It may be observed that the data on prices used in the N.S.S. publication relate to farm harvest prices. The BESM projected the 1952-53 price to other years with the help of index numbers of wholesale prices for the whole country. A better alternative would be to use the index numbers of farm harvest prices of foodgrains in Maharashtra. Since no such data are available, we use index numbers of farm harvest prices

for foodgrains for the neighbouring State of Madhya Pradesh taken from the publication of the Director of Land Records, Government of Madhya Pradesh cited earlier. Prices derived for a districts-group are used uniformly for all the districts in that group.

The value of arhar and sesamum sticks in Maharashtra as a whole is obtained on the basis of a rate of Rs. 0.50 per maund adopted by the C.S.O. (in NIS) for all the years. The value in Maharashtra is allocated between districts on the basis of the relative outturn of the respective byproducts. The C.S.O. rate of Rs. 0.75 per maund in the case of cotton sticks is adopted for Maharashtra for all the years, and the value in the State distributed among the districts in the same manner as above. In obtaining the value of cotton seed it appears to be necessary to take into account the important fact that in India the producers usually sell cotton in the form of kapas (seed-cotton) and not as lint.²⁵ This means that there would be hardly anything like a relevant farm harvest price in the case of cotton seed since this byproduct is not sold at the village site. It would be

²⁵ See C. Nanjundayya and others : Cotton in India -- Monograph (published by the Indian Central Cotton Committee, Bombay, October, 1960), p. 114.

proper to evaluate the outturn of cotton seed by means of wholesale prices though our definition of 'agriculture' is slightly compromised thereby. For this purpose we use data on wholesale prices of cotton seed in DESAg's 'Agricultural Prices in India'. Data are given for two centres in Deccan (viz. Bombay and Dhulia) and three in Vidarbha (viz. Amravati, Akola and Nagpur). In the case of Marathwada we get prices in Nanded Centre from 1957 onwards. The price in Deccan is assumed to be a simple average of prices in Bombay and Dhulia, and that in Vidarbha an average of prices in the three centres mentioned. The price in Nanded in 1957 is projected backwards on the basis of the year-to-year difference in prices in Vidarbha. The Nanded prices are assumed to apply in the case of Marathwada region. A simple average of prices in two consecutive calendar years is treated as the price in the relevant agricultural year. We now evaluate the outturn of cotton seed separately in Deccan, Vidarbha and Marathwada. The value in a districts-group is distributed among the districts on the basis of relative outturn.

The yearly issues of the Census of Indian Manufactures (CMI) give Statewise data on the outturn and value of bagasse produced as a byproduct of the sugar industry. No data at all are available for Hyderabad State in the

relevant years. Data for Madhya Pradesh are shown from 1957 onwards but these are of little use to us as by this time Vidarbha was joined to the reorganised Bombay State. ^{the} In/case of Bombay the data only for 1958 are available. It is thus possible to estimate the price of bagasse in Bombay in 1958. The price clearly relates to the reorganised State which included all the four regions of Maharashtra. The CMI also furnishes data on outturn and value in all the States taken together year-by-year upto 1958. These data can be used to derive prices in the whole country during the period. The price in Bombay in 1958 is projected backwards on the basis of the percentage difference from year to year in the prices in the whole country. The calendar-year prices are converted into prices in agricultural years in the way already specified in several contexts earlier. No data are available for 1959 as the CMI series were eventually replaced by a new series under which only a summary report was published for 1959. The 1958 calendar-year price is, therefore, taken as the 1958-59 price. On the basis of prices so derived we estimate the value of bagasse in the four districts-groups. The value in a districts-group is allocated among the districts in proportion to the relative outturn of bagasse. In the case of sugarcane tufts we follow the practice of the

C.S.O. of assuming the value of outturn per acre to be Rs. 12.50 for all the years.

The NIC and the C.S.O. made an estimate of the outturn of grass on the basis of data in Burns' 'Technological Possibilities of Agricultural Development in India'. The NCAER study on 'Agricultural Income by States (1960-61)', however, uses information in N.S.S. publication No. 65 to estimate the outturn and value of grass in 1955-56, the value being projected to 1960-61 with the help of data in CMI reports. The value of grass in Maharashtra in 1960-61 so estimated by NCAER is distributed here among the districts of Maharashtra on the basis of proportionate combined area under permanent pastures and other grazing lands, miscellaneous tree crops and groves, culturable waste and fallow lands, the relevant area data being taken from BCAS. For want of data income from grass in 1958-59 in every district is assumed to be the same as that in 1960-61. We then project value in each district backwards on the basis of year-to-year percentage variations in the prices of grass consumed by the Paper and Paperboard Industry in Bombay State, as calculated from data in CMI reports. For this purpose the prices by calendar years are used to derive those by agricultural years in the way specified earlier. Again the 1958-59 price is taken to be the same as the 1958 calendar-year price.

The NCAER estimates the value of firewood and timber by means of prices data available with the DESAg. The NCAER publication shows the outturn and value each of the two byproducts in Maharashtra in 1960-61. From these estimates we obtain the relevant prices assumed for Maharashtra in 1960-61. Assuming the same prices in 1959-60 we project them backwards with the help of index numbers of farm harvest prices of all agricultural commodities for the neighbouring State of Madhya Pradesh prepared by the Director of Land Records, Madhya Pradesh. The index numbers are for the years 1952-53 to 1959-60. The prices in 1951-52 are assumed to be the same as those in 1952-53. The value of timber and firewood in Maharashtra so estimated is allocated as between districts on the basis of proportionate outturn.

Tables 9.4 to 9.33 show the gross agricultural income at current prices in the different districts and districts-groups by crops. Tables 9.34 and 9.35 show Maharashtra's gross agricultural income by crops and by districts respectively.

TABLE 9.4 : GROSS INCOME FROM AGRICULTURE IN THANA DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	68563	98931	108507	85410	85033	97626	136035	159372
Ragi	4379	4802	3228	2902	3895	6410	5558	6015
Kodra	95	136	252	68	191	80	61	31
Other cereals	960	1592	3354	870	2504	1603	2176	2254
Total cereals	<u>73997</u>	<u>105461</u>	<u>115341</u>	<u>89250</u>	<u>91623</u>	<u>105719</u>	<u>143830</u>	<u>167672</u>
Gram	65	163	87	163	131	167	132	198
Tur	544	649	463	354	490	538	735	876
Other pulses	886	1097	825	716	945	952	1140	1243
Total pulses	<u>1495</u>	<u>1909</u>	<u>1375</u>	<u>1233</u>	<u>1566</u>	<u>1657</u>	<u>2007</u>	<u>2317</u>
Total foodgrains	<u>75492</u>	<u>107370</u>	<u>116716</u>	<u>90483</u>	<u>93189</u>	<u>107376</u>	<u>145837</u>	<u>169989</u>
Sugarcane	108	77	46	27	38	41	47	54
Chillies	500	529	338	383	294	210	97	388
Other condiments and spices	86	113	41	47	36	17	8	22
Total condiments and spices	<u>586</u>	<u>642</u>	<u>379</u>	<u>430</u>	<u>330</u>	<u>227</u>	<u>105</u>	<u>410</u>
Fruits and vegetables	6546	7508	6115	4314	10835	9517	9120	8732
Fibres	566	300	743	516	416	443	555	734
Sesamum	71	-	82	87	142	162	92	54
Coconut	425	341	309	407	279	131	137	149
Other oilseeds	279	417	274	370	570	605	352	265
Total oilseeds	<u>775</u>	<u>758</u>	<u>665</u>	<u>864</u>	<u>991</u>	<u>898</u>	<u>581</u>	<u>468</u>
Drugs and narcotics	565	294	192	242	130	196	395	465
Fodder crops	5040	8233	16511	4012	14627	8296	11329	12190
Miscellaneous food and non-foodcrops	12	12	8	16	11	25	8	31
Straw	7984	13873	15757	12721	13768	14707	17857	21756
Arhar sticks	91	82	91	91	91	99	91	91
Farmyard wood	94	89	84	72	85	883	353	374
Grass	1559	1518	1327	1186	1150	1343	1548	1579
Other byproducts	47	49	52	44	47	62	62	55
Gross income	<u>99465</u>	<u>140805</u>	<u>158686</u>	<u>115018</u>	<u>135708</u>	<u>144113</u>	<u>187888</u>	<u>216928</u>

TABLE 9.5 : GROSS INCOME FROM AGRICULTURE IN BOMBAY SUBURBAN DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	2102	3087	3217	2496	2271	1920	2749	3050
Fruits and vegetables	1069	1238	998	651	1576	2719	2622	2758
Coconut	212	170	177	163	140	230	239	261
Fodder crops	324	531	1033	255	735	477	638	659
Straw	212	390	424	333	330	258	331	383
Arhar sticks	-	-	-	-	-	-	-	-
Farmyard wood	11	13	12	10	11	34	35	38
Grass	115	112	98	88	85	99	114	116
Other byproducts	-	-	-	-	-	-	-	-
Gross Income	4045	5541	5959	3996	5148	5737	6728	7265

TABLE 9.6 : GROSS INCOME FROM AGRICULTURE IN KOLABA DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	66575	77600	90753	61943	79666	77395	87593	110598
Ragi	3185	6023	5733	3905	6803	5285	4878	5289
Kodra	191	245	408	122	381	257	276	282
Other cereals	857	1592	2269	796	2161	1619	1570	1521
Total cereals	<u>70808</u>	<u>85460</u>	<u>99163</u>	<u>66766</u>	<u>89011</u>	<u>84556</u>	<u>94317</u>	<u>117690</u>
Gram	102	149	116	136	109	82	53	100
Tur	218	289	283	245	218	196	220	263
Other pulses	1631	2365	1975	1666	1715	1332	1663	1828
Total pulses	<u>1951</u>	<u>2803</u>	<u>2374</u>	<u>2047</u>	<u>2042</u>	<u>1610</u>	<u>1936</u>	<u>2191</u>
Total foodgrains	<u>72759</u>	<u>88263</u>	<u>101537</u>	<u>68813</u>	<u>91053</u>	<u>86166</u>	<u>96253</u>	<u>119881</u>
Sugarcane	54	46	53	27	38	-	-	-
Chillies	200	176	113	192	196	526	194	517
Other condiments and spices	359	302	169	311	319	943	337	906
Total condiments and spices	<u>559</u>	<u>478</u>	<u>282</u>	<u>503</u>	<u>515</u>	<u>1469</u>	<u>531</u>	<u>1423</u>
Fruits and vegetables	4476	4567	3682	2076	5023	5892	5472	5400
Fibres	113	57	97	64	52	58	132	146
Sesamum	212	321	381	348	190	324	367	218
Coconut	1582	1087	1129	1097	941	887	921	1006
Other oilseeds	48	13	16	14	7	6	7	5
Total oilseeds	<u>1842</u>	<u>1421</u>	<u>1526</u>	<u>1459</u>	<u>1138</u>	<u>1217</u>	<u>1295</u>	<u>1229</u>
Drugs and narcotics	-	-	-	-	-	-	-	-
Fodder crops	2242	4137	5878	2236	7577	6095	6456	6254
Miscellaneous food and non-foodcrops	-	-	452	16	43	-	4	4
Straw	9054	12397	14756	10436	11333	11955	12511	16739
Arhar sticks	37	37	37	45	37	37	27	27
Farmyard wood	1699	3740	1930	1366	1536	1505	1642	1748
Grass	1517	1478	1292	1155	1120	1308	1508	1538
Other byeproduct	99	112	109	112	114	107	107	105
Gross Income	94451	116733	131631	88308	119579	115809	125938	154494

TABLE 9.7 : GROSS INCOME FROM AGRICULTURE IN RATNABIRI DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	52154	59976	71013	57403	56377	68190	67970	82859
Ragi	8100	13867	9394	8242	10361	15088	13310	14034
Kodra	2630	3403	3144	1892	2725	4890	2679	4258
Other cereals	1183	1372	1178	759	1098	2055	1117	1606
Total cereals	<u>64067</u>	<u>78618</u>	<u>84729</u>	<u>68296</u>	<u>70561</u>	<u>90223</u>	<u>85076</u>	<u>102757</u>
Gram	-	-	-	-	-	-	-	-
Tur	54	104	109	102	136	98	73	175
Other pulses	2548	2586	2499	2250	2572	1806	2646	3233
Total pulses	<u>2602</u>	<u>2690</u>	<u>2608</u>	<u>2352</u>	<u>2708</u>	<u>1904</u>	<u>2719</u>	<u>3408</u>
Total foodgrains	<u>66669</u>	<u>81308</u>	<u>87337</u>	<u>70648</u>	<u>73269</u>	<u>92127</u>	<u>87795</u>	<u>106165</u>
Sugarcane	377	331	337	136	191	183	177	146
Chillies	200	176	338	2491	2356	631	389	906
Other condiments and spices	695	621	1042	7369	6968	1729	1151	3144
Total condiments and spices	<u>895</u>	<u>797</u>	<u>1380</u>	<u>9860</u>	<u>9324</u>	<u>2360</u>	<u>1540</u>	<u>4050</u>
Fruits and vegetables	8884	10913	9859	6390	16646	17335	17100	20797
Fibres	849	343	549	387	312	346	344	440
Sesamum	142	1220	1198	659	522	892	919	599
Coconut	9532	7592	7886	7532	6466	6202	6442	7035
Other oilseeds	899	35	92	52	39	32	13	8
Total oilseeds	10573	8847	9176	8243	7027	7126	7374	7642
Drugs and narcotics	-	-	-	-	-	-	-	-
Fodder crops	6430	8136	8429	3860	6547	11906	8103	12229
Miscellaneous food and non-foodcrops	-	-	8	-	-	12	197	76
Straw	8841	11042	12205	9907	11866	13663	14068	15840
Arhar sticks	9	18	18	18	18	18	9	18
Farmyard wood	182	189	2165	1675	1039	1111	1048	1237
Grass	4337	4224	3693	3301	3202	3740	4311	4397
Other byproducts	137	442	418	374	389	399	348	356
Gross Income	<u>108183</u>	<u>126590</u>	<u>135574</u>	<u>114799</u>	<u>129830</u>	<u>150326</u>	<u>142414</u>	<u>173393</u>

TABLE 9.8 : GROSS INCOME FROM AGRICULTURE IN KONKAN (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	189394	239594	273490	207252	223347	245131	294347	355879
Ragi	15664	24692	18355	15049	21059	26783	23746	25338
Kodra	2916	3784	3804	2082	3297	5227	3016	4571
Other cereals	3000	4556	6801	2425	5763	5277	4863	5381
Total cereals	<u>210974</u>	<u>272626</u>	<u>302450</u>	<u>226808</u>	<u>253466</u>	<u>282418</u>	<u>325972</u>	<u>391169</u>
Gram	167	312	203	299	240	249	185	298
Tur	816	1042	855	701	844	832	1028	1314
Other pulses	5065	6048	5299	4632	5232	4090	5449	6304
Total pulses	<u>6048</u>	<u>7402</u>	<u>6357</u>	<u>5632</u>	<u>6316</u>	<u>5171</u>	<u>6662</u>	<u>7916</u>
Total foodgrains	<u>217022</u>	<u>280028</u>	<u>308807</u>	<u>232440</u>	<u>259782</u>	<u>287589</u>	<u>332634</u>	<u>399085</u>
Sugarcane	539	454	436	190	267	224	224	200
Chillies	900	881	789	3066	2846	1367	680	1811
Other condiments and spices	1140	1036	1252	7727	7323	2689	1496	4072
Total condiments and spices	<u>2040</u>	<u>1917</u>	<u>2041</u>	<u>10793</u>	<u>10169</u>	<u>4056</u>	<u>2176</u>	<u>5883</u>
Fruits and vegetables	20975	24226	20654	13431	34080	35463	34314	37687
Fibres	1528	700	1389	967	780	847	1031	1320
Sesamum	425	1541	1661	1094	854	1378	1378	871
Coconut	11751	9190	9501	9199	7826	7450	7739	8451
Other oilseeds	1226	465	382	436	616	643	372	278
Total oilseeds	<u>13402</u>	<u>11196</u>	<u>11524</u>	<u>10729</u>	<u>9296</u>	<u>9471</u>	<u>9489</u>	<u>9600</u>
Drugs and narcotics	565	294	192	242	130	196	395	465
Fodder crops	14036	21037	31851	10363	29486	26774	26526	31332
Miscellaneous food and non-food crops	12	12	468	32	54	37	209	111
Straw	26091	37702	43142	33397	37297	40583	44767	54718
Arhar sticks	137	137	146	154	146	154	127	136
Farmyard wood	1986	4031	4191	3123	2671	3533	3078	3397
Grass	7528	7332	6410	5730	5557	6490	7481	7630
Other byproducts	283	603	579	530	550	568	517	516
Gross Income	<u>306144</u>	<u>389669</u>	<u>431850</u>	<u>322121</u>	<u>390265</u>	<u>415985</u>	<u>462968</u>	<u>552080</u>

TABLE 9.9 : GROSS INCOME FROM AGRICULTURE IN DHULIA DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	1307	2110	4529	3993	5277	4990	6782	7142
Wheat	3030	4944	10862	8939	9945	10039	7726	13868
Jowar	5892	17293	26581	18772	19615	38792	34366	39301
Bajri	9339	13477	32824	11715	14754	27541	29095	20030
Ragi	22	245	380	218	1307	1200	1592	1996
Other cereals	687	2520	2709	2002	1618	2521	2522	2237
Total cereals	<u>20277</u>	<u>40589</u>	<u>77885</u>	<u>45639</u>	<u>52516</u>	<u>85083</u>	<u>82083</u>	<u>84574</u>
Gram	1143	1480	2401	1960	1840	2406	1184	1777
Tur	1143	3186	2580	3136	1640	2584	3227	2969
Other pulses	902	4740	3500	2359	1959	4042	6011	4218
Total pulses	<u>3188</u>	<u>9406</u>	<u>8481</u>	<u>7455</u>	<u>5439</u>	<u>9032</u>	<u>10422</u>	<u>8964</u>
Total foodgrains	<u>23465</u>	<u>49995</u>	<u>86366</u>	<u>53094</u>	<u>57955</u>	<u>94115</u>	<u>92505</u>	<u>93538</u>
Sugarcane	2684	1966	1960	1307	1915	2921	3678	3631
Chillies	2202	2115	3719	2683	294	4100	3694	10739
Other condiments and spices	201	145	101	61	16	122	115	596
Total condiments and spices	<u>2403</u>	<u>2260</u>	<u>3820</u>	<u>2744</u>	<u>310</u>	<u>4222</u>	<u>3809</u>	<u>11335</u>
Fruits and vegetables	4542	4412	4118	2361	6304	9517	7296	6434
Cotton	6051	4900	28311	13310	12685	22382	26231	20936
Other fibres	375	291	1120	463	409	706	1058	970
Total fibres	<u>6426</u>	<u>5191</u>	<u>29431</u>	<u>13773</u>	<u>13094</u>	<u>23088</u>	<u>27289</u>	<u>21906</u>
Groundnut	16111	12394	19299	12144	16284	29597	44025	43181
Sesamum	513	1476	1797	2072	1560	2681	1844	1665
Linseed	-	-	-	41	51	108	50	63
Other oilseeds	354	525	812	270	514	684	711	625
Total oilseeds	<u>16978</u>	<u>14395</u>	<u>21908</u>	<u>14527</u>	<u>18409</u>	<u>33070</u>	<u>46630</u>	<u>45534</u>
Tobacco	-	-	-	-	-	-	-	-
Other drugs and narcotics	2049	790	941	780	1100	1427	553	144
Total drugs and narcotics	<u>2049</u>	<u>790</u>	<u>941</u>	<u>780</u>	<u>1100</u>	<u>1427</u>	<u>553</u>	<u>144</u>
Fodder crops	26	181	115	83	90	203	192	148
Miscellaneous food and non-foodcrops	172	52	15	10	4	8	260	36
Straw	10143	12272	24014	19384	22054	28923	30452	32835
Arhar sticks	181	381	344	581	363	426	472	490
Farmyard wood	279	179	169	134	30	31	32	35
Grass	1058	1030	901	805	781	912	1051	1072
Other byproducts	2438	2264	7268	5243	4955	7075	6124	5749
Gross Income	<u>72844</u>	<u>95368</u>	<u>181370</u>	<u>114826</u>	<u>127364</u>	<u>205938</u>	<u>220343</u>	<u>222887</u>

TABLE 9.10 : GROSS INCOME FROM AGRICULTURE IN JALGAON DISTRICT (AT CURRENT PRICES)
(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	664	740	2439	1564	1965	1673	1690	1131
Wheat	5605	2363	5195	4536	8918	7078	6123	13322
Jowar	33034	11281	51732	36404	24361	55461	52981	40015
Bajri	5593	5308	13065	7373	8498	10256	10539	8728
Ragi	-	-	-	22	27	29	35	38
Other cereals	140	89	263	108	149	121	186	155
Total cereals	<u>45036</u>	<u>19781</u>	<u>72694</u>	<u>50007</u>	<u>43918</u>	<u>74618</u>	<u>71554</u>	<u>63389</u>
Gram	737	298	863	736	672	1068	572	884
Tur	3525	1539	3788	2117	2809	4454	5194	6222
Other pulses	21832	14001	25350	10218	11827	23964	28935	25378
Total pulses	<u>26094</u>	<u>15838</u>	<u>30001</u>	<u>13071</u>	<u>15308</u>	<u>29486</u>	<u>34701</u>	<u>32484</u>
Total foodgrains	<u>71130</u>	<u>35619</u>	<u>102695</u>	<u>63078</u>	<u>59226</u>	<u>104104</u>	<u>106255</u>	<u>95873</u>
Sugarcane	379	273	715	533	1190	1816	2348	2500
Chillies	2803	793	1578	2204	1865	2839	2916	4270
Other condiments and spices	4517	850	1637	1745	2242	4246	2572	3877
Total condiments and spices	<u>7320</u>	<u>1643</u>	<u>3215</u>	<u>3949</u>	<u>4107</u>	<u>7085</u>	<u>5488</u>	<u>8147</u>
Fruits and vegetables	21376	22291	15600	9890	24329	32404	38190	37572
Cotton	32973	18538	60356	51804	28502	59341	86126	58557
Other fibres	510	232	606	498	301	675	856	579
Total fibres	<u>33483</u>	<u>18770</u>	<u>60962</u>	<u>52302</u>	<u>28803</u>	<u>60016</u>	<u>86982</u>	<u>59136</u>
Groundnut	27452	13704	20304	30922	29661	39845	48514	36096
Sesamum	1048	456	1482	959	1096	1869	1339	876
Linseed	84	-	79	41	51	54	50	74
Other oilseeds	18	2	15	15	17	26	10	7
Total oilseeds	<u>28602</u>	<u>14162</u>	<u>21880</u>	<u>31937</u>	<u>30825</u>	<u>41794</u>	<u>49913</u>	<u>37053</u>
Tobacco	-	-	-	-	-	183	-	-
Other drugs and narcotics	341	83	54	58	80	99	92	144
Total drugs and narcotics	<u>341</u>	<u>83</u>	<u>54</u>	<u>58</u>	<u>80</u>	<u>282</u>	<u>92</u>	<u>144</u>
Fodder crops	139	136	197	102	160	175	157	304
Miscellaneous food and non-foodcrops	4	4	4	42	32	107	4	13
Straw	29322	8414	31775	31873	20779	36011	41882	34181
Arhar sticks	672	263	772	754	781	735	789	727
Farmyard wood	198	202	127	55	61	69	68	79
Grass	783	763	667	596	578	675	778	794
Other bye-products	9296	7357	18116	17248	10633	18004	19073	19115
Gross Income	<u>203045</u>	<u>109980</u>	<u>256779</u>	<u>212417</u>	<u>181584</u>	<u>303277</u>	<u>352019</u>	<u>295638</u>

TABLE 9.11 : GROSS INCOME FROM AGRICULTURE IN NASIK DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	10321	12544	16548	13970	11956	21860	13937	27819
Wheat	13437	7798	17870	19422	15334	12110	17335	30481
Jowar	7540	868	5692	3532	3748	7317	8654	12336
Bajri	17637	18239	48054	31399	28959	48007	49027	51399
Ragi	7105	10780	19494	11237	14237	14806	17376	18357
Other cereals	4658	1268	2337	1284	1318	2162	2917	1907
Total cereals	<u>60698</u>	<u>51497</u>	<u>109995</u>	<u>80844</u>	<u>75552</u>	<u>106262</u>	<u>109246</u>	<u>142299</u>
Gram	4935	3005	3877	4754	4219	5391	2605	4716
Tur	2191	1719	2657	2345	1372	3574	4200	3813
Other pulses	7116	8345	11694	8592	6549	11626	9707	9800
Total pulses	<u>14242</u>	<u>13069</u>	<u>18228</u>	<u>15691</u>	<u>12140</u>	<u>20591</u>	<u>16512</u>	<u>18329</u>
Total foodgrains	<u>74940</u>	<u>64566</u>	<u>128223</u>	<u>96535</u>	<u>87692</u>	<u>126853</u>	<u>125758</u>	<u>160628</u>
Sugarcane	28181	12447	15734	13918	15689	22144	25151	32926
Chillies	1802	705	1352	1725	1276	1682	1361	3882
Other condiments and spices	315	165	353	268	213	16653	199	611
Total condiments and spices	<u>2117</u>	<u>870</u>	<u>1705</u>	<u>1993</u>	<u>1489</u>	<u>18335</u>	<u>1560</u>	<u>4493</u>
Fruits and vegetables	17368	19118	16661	11274	32899	39768	43434	46764
Cotton	776	572	2897	2858	3207	4620	2265	2017
Other fibres	280	204	541	330	318	576	1090	1056
Total fibres	<u>1056</u>	<u>776</u>	<u>3438</u>	<u>3188</u>	<u>3525</u>	<u>5196</u>	<u>3355</u>	<u>3073</u>
Groundnut	14816	7127	19000	14553	14379	18050	10773	22896
Sesamum	539	381	408	400	400	487	292	268
Linseed	51	54	54	41	51	52	50	136
Other oilseeds	1107	705	4289	1919	2221	2819	1498	3041
Total oilseeds	<u>16513</u>	<u>8267</u>	<u>23751</u>	<u>16913</u>	<u>17051</u>	<u>21408</u>	<u>12613</u>	<u>26341</u>
Tobacco	-	-	-	-	-	-	-	-
Other drugs and narcotics	427	166	108	144	107	174	184	115
Total drugs and narcotics	<u>427</u>	<u>166</u>	<u>108</u>	<u>144</u>	<u>107</u>	<u>174</u>	<u>184</u>	<u>115</u>
Fodder crops	6082	4838	5858	4473	4531	7824	12022	6756
Miscellaneous food and non-foodcrops	1492	20	209	42	133	127	8	22
Straw	22337	15758	30669	23744	23919	29375	33135	37195
Arhar sticks	517	391	554	700	572	591	626	509
Farmyard wood	2614	1311	248	205	241	274	278	154
Grass	1200	1169	1022	914	887	1036	1194	1218
Other byproducts	753	565	1234	1301	1207	1895	1184	1234
Gross Income	175597	130262	229414	175344	189942	275000	260502	321428

TABLE 9.12 : GROSS INCOME FROM AGRICULTURE IN AHMEDNAGAR DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	2580	2276	1470	1579	3397	5337	2973	4583
Wheat	7531	2585	4965	7680	11760	6109	11456	14307
Jowar	45563	13175	40192	30283	68299	57890	81248	85551
Bajri	23686	8101	19518	19770	23123	24806	35239	29231
Ragi	50	770	1143	1546	136	1343	1463	1839
Other cereals	1352	1143	1114	519	883	870	733	757
Total cereals	<u>80762</u>	<u>28050</u>	<u>68402</u>	<u>61377</u>	<u>107598</u>	<u>96355</u>	<u>133112</u>	<u>136268</u>
Gram	4737	2341	3846	5056	4300	4202	3227	4406
Tur	3507	1620	2650	2628	2477	4465	7626	7074
Other pulses	4964	3950	6067	5252	2172	4517	6143	4789
Total pulses	<u>13208</u>	<u>7911</u>	<u>12563</u>	<u>12936</u>	<u>8949</u>	<u>13184</u>	<u>16996</u>	<u>16269</u>
Total foodgrains	<u>93970</u>	<u>35961</u>	<u>80965</u>	<u>74313</u>	<u>116547</u>	<u>109539</u>	<u>150108</u>	<u>152537</u>
Sugarcane	89797	71552	83282	61000	77360	96198	102138	152870
Chillies	2202	2027	2479	2875	3043	4100	3791	4917
Other condiments and spices	437	111	239	109	135	220	216	359
Total condiments and spices	<u>2639</u>	<u>2138</u>	<u>2718</u>	<u>2984</u>	<u>3178</u>	<u>4320</u>	<u>4007</u>	<u>5276</u>
Fruits and vegetables	12358	14242	10920	7163	17730	22547	22572	21256
Cotton	13035	1241	12386	7013	10061	6716	12176	18297
Other fibres	894	280	1225	739	688	592	1283	2735
Total fibres	<u>13929</u>	<u>1521</u>	<u>13611</u>	<u>7752</u>	<u>10749</u>	<u>7308</u>	<u>13459</u>	<u>21032</u>
Groundnut	3672	3212	4799	9309	6239	9326	9223	10261
Sesamum	1184	408	817	762	501	811	487	830
Linseed	457	135	169	112	203	314	348	229
Other oilseeds	4177	3151	5499	5604	4441	4678	4532	5530
Total oilseeds	<u>9490</u>	<u>6906</u>	<u>11284</u>	<u>15787</u>	<u>11384</u>	<u>15129</u>	<u>14590</u>	<u>16850</u>
Tobacco	338	572	730	1334	261	836	844	1422
Other drugs and narcotics	266	103	60	80	28	68	142	267
Total drugs and narcotics	<u>604</u>	<u>675</u>	<u>790</u>	<u>1414</u>	<u>289</u>	<u>904</u>	<u>986</u>	<u>1689</u>
Fodder crops	3733	3564	4183	2501	5701	6073	4588	5967
Miscellaneous food and non-foodcrops	2232	68	-	170	436	426	21	4
Straw	37666	11578	29675	32639	35246	37283	56163	54714
Arhar sticks	863	309	690	980	636	881	953	898
Farmyard wood	720	296	200	279	146	157	156	163
Grass	744	725	634	567	550	643	741	756
Other byproducts	4727	2104	6289	4520	3992	4018	5912	6181
Gross Income	<u>273472</u>	<u>151639</u>	<u>245241</u>	<u>212069</u>	<u>283944</u>	<u>305426</u>	<u>376394</u>	<u>440193</u>

TABLE 9.13 : GROSS INCOME FROM AGRICULTURE IN POONA DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	22601	26704	25368	22294	31972	34002	29461	38413
Wheat	3234	2303	2832	4015	3392	3255	5329	7013
Jowar	27331	15004	16061	17087	24943	60127	56491	59263
Bajri	17421	11263	19141	19138	15089	21061	28022	26438
Ragi	3336	3260	2940	2871	1347	2973	2828	3397
Other cereals	1513	1833	2674	1252	776	1923	1724	1975
Total cereals	<u>75436</u>	<u>60367</u>	<u>69016</u>	<u>66657</u>	<u>77519</u>	<u>123341</u>	<u>123855</u>	<u>136499</u>
Gram	3906	3283	2287	1709	2545	3710	4577	5215
Tur	2519	1143	2062	1607	1414	1749	3479	4015
Other pulses	5337	3796	3732	1887	1656	4460	6068	4545
Total pulses	<u>11762</u>	<u>8222</u>	<u>8081</u>	<u>5203</u>	<u>5615</u>	<u>9919</u>	<u>14124</u>	<u>13775</u>
Total foodgrains	<u>87198</u>	<u>68589</u>	<u>77097</u>	<u>71860</u>	<u>83134</u>	<u>133260</u>	<u>137979</u>	<u>150274</u>
Sugarcane	33546	21315	26937	24734	20764	30619	47257	50021
Chillies	801	881	1014	958	1669	1787	1750	2588
Other condiments and spices	224	225	380	291	486	510	732	1688
Total condiments and spices	<u>1025</u>	<u>1106</u>	<u>1394</u>	<u>1249</u>	<u>2155</u>	<u>2297</u>	<u>2482</u>	<u>4276</u>
Fruits and vegetables	22178	23762	17659	12861	35854	43507	45828	49292
Cotton	980	988	109	1331	1735	1592	1878	2620
Other fibres	318	419	81	701	620	488	474	1103
Total fibres	<u>1298</u>	<u>1407</u>	<u>190</u>	<u>2032</u>	<u>2355</u>	<u>2080</u>	<u>2352</u>	<u>3723</u>
Groundnut	4326	2263	4777	5888	3395	4590	10082	2672
Sesamum	403	316	348	286	272	514	531	447
Linseed	-	-	-	-	-	-	-	-
Other oilseeds	3732	1732	3906	3553	3762	3380	5837	1258
Total oilseeds	<u>8461</u>	<u>4311</u>	<u>9031</u>	<u>9727</u>	<u>7429</u>	<u>8484</u>	<u>16450</u>	<u>4377</u>
Tobacco	338	218	180	191	87	95	383	383
Other drugs and narcotics	508	245	189	229	125	100	414	431
Total drugs and narcotics	<u>846</u>	<u>463</u>	<u>369</u>	<u>420</u>	<u>212</u>	<u>195</u>	<u>797</u>	<u>814</u>
Fodder crops	21761	30579	23568	15511	10497	28525	27042	29396
Miscellaneous food and non-foodcrops	-	32	8	13	43	127	651	9
Straw	27908	15182	22020	23938	27335	36066	43286	41454
Arhar sticks	408	254	363	381	272	344	391	426
Farmyard wood	174	152	136	458	137	153	166	194
Grass	1620	1578	1380	1232	1195	1396	1609	1641
Other byproducts	697	669	592	855	826	885	1375	1641
Gross Income	207120	169399	180744	165271	192208	287938	327665	337538

TABLE 9.14 : GROSS INCOME FROM AGRICULTURE IN SHOLAPUR DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	2661	1616	1440	2491	2483	2002	2706	3350
Wheat	4573	4067	5570	6568	4598	5286	7632	8804
Jawar	34437	27789	67629	56258	65693	72565	105482	114727
Bajri	2937	588	3539	1874	2396	2146	2594	3172
Ragi	-	-	30	22	24	-	32	33
Other cereals	720	615	910	452	606	971	1044	1073
Total cereals	<u>45328</u>	<u>34675</u>	<u>79118</u>	<u>67665</u>	<u>75800</u>	<u>82970</u>	<u>119490</u>	<u>131159</u>
Gram	3161	2232	2805	4501	3841	2168	3692	3215
Tur	7856	5764	8958	9065	6751	9575	15702	9697
Other pulses	1538	1867	3615	2806	2799	4030	4425	2711
Total pulses	<u>12555</u>	<u>9863</u>	<u>15378</u>	<u>16372</u>	<u>13391</u>	<u>15773</u>	<u>23819</u>	<u>15623</u>
Total foodgrains	<u>57883</u>	<u>44538</u>	<u>94496</u>	<u>84037</u>	<u>89191</u>	<u>98743</u>	<u>143309</u>	<u>146782</u>
Sugarcane	23226	32008	18041	9999	17574	27774	33849	26614
Chillies	4504	1939	3494	4983	3632	2733	2139	4787
Other condiments and spices	291	259	418	732	301	211	158	428
Total condiments and spices	<u>4795</u>	<u>2198</u>	<u>3912</u>	<u>5715</u>	<u>3933</u>	<u>2944</u>	<u>2297</u>	<u>5215</u>
Fruits and vegetables	9419	7198	5990	3704	9948	10197	11286	12754
Cotton	7999	1722	3871	3348	3512	2903	4691	5423
Other fibres	4418	1546	4627	2105	1465	1103	1906	3419
Total fibres	<u>12417</u>	<u>3268</u>	<u>8498</u>	<u>5453</u>	<u>4977</u>	<u>4006</u>	<u>6597</u>	<u>8842</u>
Groundnut	16322	10758	22877	18803	17460	18397	20570	23630
Sesamum	332	178	457	362	256	721	711	774
Linseed	202	109	76	76	153	448	447	398
Other oilseeds	3134	2657	5493	3520	3533	3230	3850	6164
Total oilseeds	<u>19990</u>	<u>13702</u>	<u>28903</u>	<u>22761</u>	<u>21402</u>	<u>22796</u>	<u>25578</u>	<u>30966</u>
Tobacco	1151	653	544	817	348	871	719	721
Other drugs and narcotics	279	207	134	160	118	343	348	284
Total drugs and narcotics	<u>1430</u>	<u>860</u>	<u>678</u>	<u>977</u>	<u>466</u>	<u>1214</u>	<u>1067</u>	<u>1005</u>
Fodder crops	787	1886	2659	1184	2820	4391	2253	2157
Miscellaneous food and non-foodcrops	2700	124	106	90	83	16	113	-
Straw	18668	13947	29310	42343	27112	27338	49731	57192
Arhar sticks	1081	999	1462	1680	1407	1888	2214	1561
Farmyard wood	315	158	153	106	127	142	146	163
Grass	1543	1503	1314	1175	1140	1332	1536	1567
Other byproducts	2586	1122	1682	1474	1512	1499	2226	2749
Gross Income	<u>156840</u>	<u>123511</u>	<u>197204</u>	<u>180698</u>	<u>181692</u>	<u>204280</u>	<u>282202</u>	<u>297567</u>

TABLE 9.15 : GROSS INCOME FROM AGRICULTURE IN SATARA DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	6660	9966	8493	12819	12479	9776	14414	11456
Wheat	2158	2416	2740	3876	3317	5146	5209	4518
Jawar	24721	20907	24609	27267	28788	39174	39595	48354
Bajri	15834	10849	11740	11085	9594	18934	15695	22825
Ragi	2151	3103	2172	2276	2545	2156	2795	1967
Other cereals	633	1189	759	404	498	960	646	855
Total cereals	<u>52157</u>	<u>48430</u>	<u>50513</u>	<u>57727</u>	<u>57221</u>	<u>76146</u>	<u>78354</u>	<u>89975</u>
Gram	1742	2417	2777	1198	1568	3512	2883	2522
Tur	3327	2940	1489	1948	2265	2545	3866	3879
Other pulses	7164	6643	3619	2625	3545	5164	6848	5270
Total pulses	<u>12233</u>	<u>12000</u>	<u>7885</u>	<u>5771</u>	<u>7378</u>	<u>11221</u>	<u>13597</u>	<u>11671</u>
Total foodgrains	<u>64390</u>	<u>60430</u>	<u>58398</u>	<u>63498</u>	<u>64599</u>	<u>87367</u>	<u>91951</u>	<u>101646</u>
Sugarcane	17749	15612	17248	9347	12492	16429	19561	21879
Chillies	1601	970	1578	1150	1080	1262	972	1811
Other condiments and spices	2741	1995	2594	1888	1857	2252	1704	3201
Total condiments and spices	<u>4342</u>	<u>2965</u>	<u>4172</u>	<u>3038</u>	<u>2937</u>	<u>3514</u>	<u>2676</u>	<u>5012</u>
Fruits and vegetables	10822	11533	10421	7733	17828	25266	25878	23095
Cotton	122	258	245	435	735	640	189	1361
Other fibres	572	812	735	1394	1117	471	136	968
Total fibres	<u>694</u>	<u>1070</u>	<u>980</u>	<u>1829</u>	<u>1852</u>	<u>1111</u>	<u>325</u>	<u>2329</u>
Groundnut	24022	19627	31542	13045	10338	22157	30770	24471
Sesamum	-	-	-	-	-	-	-	-
Linseed	-	52	44	25	51	56	50	40
Other oilseeds	1561	1346	2171	779	638	1296	1544	1181
Total oilseeds	<u>25583</u>	<u>21025</u>	<u>33757</u>	<u>13849</u>	<u>11027</u>	<u>23509</u>	<u>32364</u>	<u>25692</u>
Tobacco	1622	1536	997	1234	728	1298	1778	1177
Other drugs and narcotics	243	230	96	185	103	180	305	249
Total drugs and narcotics	<u>1865</u>	<u>1766</u>	<u>1093</u>	<u>1419</u>	<u>831</u>	<u>1478</u>	<u>2083</u>	<u>1426</u>
Fodder crops	4903	11132	5336	3194	4416	8623	5553	7049
Miscellaneous food and non-foodcrops	8	8	57	6	4	-	13	27
Straw	22061	18116	21593	24700	23951	26195	29336	34590
Arhar sticks	426	408	453	490	472	490	499	490
Farmyard wood	47	42	40	29	31	39	38	35
Grass	1052	1025	896	801	777	908	1047	1068
Other byproducts	319	336	352	418	391	459	482	812
Gross Income	<u>154261</u>	<u>145468</u>	<u>154796</u>	<u>130351</u>	<u>141608</u>	<u>195388</u>	<u>211806</u>	<u>225150</u>

TABLE 9.16 : GROSS INCOME FROM AGRICULTURE IN SANGLI DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	4289	3539	3782	5410	4443	4247	6715	8031
Wheat	1591	1788	2677	3062	2960	2989	4491	4114
Jawar	30998	32640	42316	40689	35035	61126	66218	100610
Bajri	7486	4702	8175	6307	6920	9967	8784	9318
Ragi	408	544	672	432	229	245	474	295
Other cereals	848	546	1040	1300	535	968	641	1150
Total cereals	<u>45620</u>	<u>43759</u>	<u>58662</u>	<u>57200</u>	<u>50122</u>	<u>79542</u>	<u>87323</u>	<u>123518</u>
Gram	2073	3273	2594	2453	1715	3228	3165	1941
Tur	4952	4128	4938	4219	2768	5737	8004	8554
Other pulses	5296	4371	5338	3305	2937	5617	7668	7487
Total pulses	<u>12321</u>	<u>11772</u>	<u>12870</u>	<u>9977</u>	<u>7420</u>	<u>14582</u>	<u>18837</u>	<u>17982</u>
Total foodgrains	<u>57941</u>	<u>55531</u>	<u>71532</u>	<u>67177</u>	<u>57542</u>	<u>94124</u>	<u>106160</u>	<u>141500</u>
Sugarcane	13285	8225	9403	10731	8145	9016	16096	16620
Chillies	2202	1939	2367	2204	2160	2733	2333	4787
Other condiments and spices	1884	1531	2034	1681	1705	2050	2256	3961
Total condiments and spices	<u>4086</u>	<u>3470</u>	<u>4401</u>	<u>3885</u>	<u>3865</u>	<u>4783</u>	<u>4589</u>	<u>8748</u>
Fruits and vegetables	6814	7198	5304	3500	7387	8044	8892	8617
Cotton	607	221	490	1198	1707	5081	1686	2645
Other fibres	192	125	196	174	155	412	216	392
Total fibres	<u>799</u>	<u>346</u>	<u>686</u>	<u>1372</u>	<u>1862</u>	<u>5493</u>	<u>1902</u>	<u>3037</u>
Groundnut	17607	11613	19660	18693	11447	19075	23534	19863
Sesamum	240	174	294	283	338	360	615	681
Linseed	-	-	-	-	-	-	-	-
Other oilseeds	909	470	1007	932	523	818	757	658
Total oilseeds	<u>18756</u>	<u>12257</u>	<u>20961</u>	<u>19908</u>	<u>12308</u>	<u>20253</u>	<u>24906</u>	<u>21202</u>
Tobacco	11410	10333	4773	3702	8575	4432	4741	5365
Other drugs and narcotics	1987	884	352	304	848	481	563	729
Total drugs and narcotics	<u>13397</u>	<u>11217</u>	<u>5125</u>	<u>4006</u>	<u>9423</u>	<u>4913</u>	<u>5304</u>	<u>6094</u>
Fodder crops	7931	9779	9529	5654	5409	5069	3330	7752
Miscellaneous food and non-foodcrops	-	108	57	-	-	-	-	-
Straw	18006	20850	30944	30625	34657	38066	42263	46805
Arhar sticks	908	708	1108	1126	1026	1081	1108	1053
Farmyard wood	43	20	6	6	6	7	9	9
Grass	1061	1033	903	807	783	915	1055	1076
Other byproducts	393	261	328	666	1002	1526	740	1104
Gross Income	<u>143420</u>	<u>131003</u>	<u>160287</u>	<u>149463</u>	<u>143415</u>	<u>193290</u>	<u>216354</u>	<u>263617</u>

TABLE 9.17 : GROSS INCOME FROM AGRICULTURE IN KOLHAPUR DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	27211	38661	32599	36940	56505	76334	67054	65022
Wheat	178	465	543	436	576	579	667	924
Jawar	15331	15481	9873	17101	18511	27473	23727	21440
Bajri	163	184	294	261	345	531	244	225
Ragi	3687	6268	5757	4252	6342	7775	7345	7385
Other cereals	2117	2447	2995	2630	3513	4743	3920	4041
Total cereals	<u>48687</u>	<u>63506</u>	<u>52061</u>	<u>61620</u>	<u>85792</u>	<u>117435</u>	<u>102957</u>	<u>99037</u>
Gram	314	391	707	495	740	769	685	381
Tur	1345	1565	1814	1628	2807	2434	2900	3530
Other pulses	1000	1120	1439	883	1531	1793	1929	2479
Total pulses	<u>2659</u>	<u>3076</u>	<u>3960</u>	<u>3006</u>	<u>5078</u>	<u>4996</u>	<u>5514</u>	<u>6390</u>
Total foodgrains	<u>51346</u>	<u>66582</u>	<u>56021</u>	<u>64626</u>	<u>90870</u>	<u>122431</u>	<u>108471</u>	<u>105427</u>
Sugarcane	64767	53737	63912	62720	58978	53253	62502	95550
Chillies	1601	2027	1465	2970	3337	3785	2527	2329
Other condiments and spices	263	297	200	301	365	496	337	25
Total condiments and spices	<u>1864</u>	<u>2324</u>	<u>1665</u>	<u>3271</u>	<u>3702</u>	<u>4281</u>	<u>2864</u>	<u>2354</u>
Fruits and vegetables	4208	5031	3682	2483	5319	6231	6498	7354
Cotton	563	290	286	514	1062	2538	397	1108
Other fibres	202	130	203	196	334	594	94	258
Total fibres	<u>765</u>	<u>420</u>	<u>489</u>	<u>710</u>	<u>1396</u>	<u>3132</u>	<u>491</u>	<u>1366</u>
Groundnut	15419	8602	15293	11349	12613	14600	18845	19901
Sesamum	109	-	98	-	-	84	77	97
Linseed	-	-	-	-	-	-	-	-
Other oilseeds	148	113	168	187	181	248	209	192
Total oilseeds	<u>15676</u>	<u>8715</u>	<u>15559</u>	<u>11536</u>	<u>12794</u>	<u>14932</u>	<u>19131</u>	<u>20190</u>
Tobacco	24413	17858	17164	16891	8371	18783	10480	6751
Other drugs and narcotics	181	217	162	144	125	208	151	112
Total drugs and narcotics	<u>24594</u>	<u>18075</u>	<u>17326</u>	<u>17035</u>	<u>8496</u>	<u>18991</u>	<u>10631</u>	<u>6863</u>
Fodder crops	4665	5952	5968	5021	8161	11825	10271	9066
Miscellaneous food and non-foodcrops	12	-	-	10	-	-	-	-
Straw	14805	14947	13377	17204	16130	21834	21918	21390
Arhar sticks	344	391	391	418	499	445	482	418
Farmyard wood	247	270	246	208	241	271	281	301
Grass	1498	1459	1276	1141	1107	1293	1491	1521
Other byeproducts	1389	1239	1187	1464	1557	1964	1946	2471
Gross Income	<u>186180</u>	<u>179142</u>	<u>181099</u>	<u>187847</u>	<u>209250</u>	<u>260883</u>	<u>246977</u>	<u>274271</u>

TABLE 9.18 : GROSS INCOME FROM AGRICULTURE IN DECCAN (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	78294	98156	96668	101060	130477	160221	145732	166947
Wheat	41337	28729	53254	58534	60800	52591	65968	97351
Jawar	224847	154438	284685	247393	288993	419925	468762	521597
Bajri	100096	72711	156350	108922	109678	163249	179239	171366
Ragi	16759	24970	32588	22876	26194	30527	33940	35307
Other cereals	12668	11650	14801	9951	9896	15239	14333	14150
Total cereals	<u>474001</u>	<u>390654</u>	<u>638346</u>	<u>548736</u>	<u>626038</u>	<u>841752</u>	<u>907974</u>	<u>1006718</u>
Gram	22748	18720	22157	22862	21440	26454	22590	25057
Tur	30365	23604	30936	28693	24303	37117	54198	49753
Other pulses	55149	48833	64354	37927	34975	65213	77734	66677
Total pulses	<u>108262</u>	<u>91157</u>	<u>117447</u>	<u>89482</u>	<u>80718</u>	<u>128784</u>	<u>154522</u>	<u>141487</u>
Total foodgrains	<u>582263</u>	<u>481811</u>	<u>755793</u>	<u>638218</u>	<u>706756</u>	<u>970536</u>	<u>1062496</u>	<u>1148205</u>
Sugarcane	273614	217135	237232	194289	214107	260170	312580	402611
Chillies	19718	13396	19046	21752	18356	25021	21483	40110
Other condiments and spices	10873	5578	7956	7076	7320	26760	8289	14746
Total condiments and spices	<u>30591</u>	<u>18974</u>	<u>27002</u>	<u>28828</u>	<u>25676</u>	<u>51781</u>	<u>29772</u>	<u>54856</u>
Fruits and vegetables	109085	114785	90355	60969	157598	197481	209874	213138
Cotton	63106	28730	108951	81811	63206	105813	135639	112964
Other fibres	7761	4039	9334	6600	5407	5617	7113	11480
Total fibres	<u>70867</u>	<u>32769</u>	<u>118285</u>	<u>88411</u>	<u>68613</u>	<u>111430</u>	<u>142752</u>	<u>124444</u>
Groundnut	139747	89300	157551	134706	121816	175637	216336	202971
Sesamum	4368	3389	5701	5124	4423	7527	5896	5638
Linseed	794	350	422	336	560	1032	995	940
Other oilseeds	15140	10701	23360	16779	15830	17179	18948	18556
Total oilseeds	<u>160049</u>	<u>103740</u>	<u>187034</u>	<u>156945</u>	<u>142629</u>	<u>201375</u>	<u>242175</u>	<u>228205</u>
Tobacco	39272	31170	24388	24169	18370	26498	18945	15819
Other drugs and narcotics	6281	2925	2096	2084	2634	3080	2752	2475
Total drugs and narcotics	<u>45553</u>	<u>34095</u>	<u>26484</u>	<u>26253</u>	<u>21004</u>	<u>29578</u>	<u>21697</u>	<u>18294</u>
Fodder crops	50027	68047	57413	37723	41785	72708	65408	68595
Miscellaneous food and non-foodcrops	6620	416	456	383	735	811	1070	111
Straw	200916	131064	233377	246450	231183	281091	348166	360356
Arhar sticks	5400	4104	6137	7110	6028	6881	7534	6572
Farmyard wood	4637	2630	1325	1480	1020	1143	1174	1133
Grass	10559	10285	8993	8038	7798	9110	10502	10713
Other byproducts	22598	15917	37048	33189	26075	37325	39062	41056
Gross Income	<u>1572779</u>	<u>1235772</u>	<u>1786934</u>	<u>1528286</u>	<u>1651007</u>	<u>2231420</u>	<u>2494262</u>	<u>2678289</u>

TABLE 9.19 : GROSS INCOME FROM AGRICULTURE IN AURANGABAD DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955--56	1956-57	1957-58	1958-59
Paddy	1324	1605	1141	1681	370	1445	1242	1011
Wheat	8464	8522	10428	9759	16011	9913	17440	22865
Jawar	21024	31436	53005	31091	25532	52499	51051	77964
Bajri	6890	5953	11673	7181	8916	13058	15854	12199
Ragi	26	-	-	-	55	29	43	46
Other cereals	424	581	825	491	669	635	476	612
Total cereals	<u>38152</u>	<u>48097</u>	<u>77072</u>	<u>50203</u>	<u>51553</u>	<u>77579</u>	<u>86106</u>	<u>114697</u>
Gram	4115	3363	3086	2564	4080	4694	5040	5284
Tur	6067	3875	6382	1958	4173	5764	7150	6949
Other pulses	6890	4697	8371	6054	9883	15087	21532	13367
Total pulses	<u>17072</u>	<u>11935</u>	<u>17839</u>	<u>10576</u>	<u>18136</u>	<u>25545</u>	<u>33722</u>	<u>25600</u>
Total foodgrains	<u>55224</u>	<u>60032</u>	<u>94911</u>	<u>60779</u>	<u>69689</u>	<u>103124</u>	<u>119828</u>	<u>140297</u>
Sugarcane	10476	5295	8612	5490	8295	9114	12692	15405
Chillies	2741	1841	3977	2905	3449	3860	3326	4944
Other condiments and spices	171	92	289	159	172	211	186	299
Total condiments and spices	<u>2912</u>	<u>1933</u>	<u>4266</u>	<u>3064</u>	<u>3621</u>	<u>4071</u>	<u>3512</u>	<u>5243</u>
Fruits and vegetables	8350	9288	7426	4396	10933	12463	13338	14477
Cotton	19608	9109	21869	26950	25370	24361	32105	30577
Other fibres	4562	2361	5209	4778	4485	4827	6592	6712
Total fibres	<u>24170</u>	<u>11470</u>	<u>27078</u>	<u>31728</u>	<u>29855</u>	<u>29188</u>	<u>38697</u>	<u>37289</u>
Groundnut	22156	16547	23536	21757	21410	26481	8495	11298
Sesamum	2334	1184	1275	855	845	1134	1289	1344
Linseed	2477	1906	1221	1208	1580	1734	2813	4379
Other oilseeds	8656	6645	9524	6679	7155	9216	2774	3620
Total oilseeds	<u>35623</u>	<u>26282</u>	<u>35556</u>	<u>30499</u>	<u>30990</u>	<u>38565</u>	<u>15371</u>	<u>20641</u>
Tobacco	214	122	95	205	105	230	401	848
Other drugs and narcotics	64	-	9	92	132	59	155	170
Total drugs and narcotics	<u>278</u>	<u>122</u>	<u>104</u>	<u>297</u>	<u>237</u>	<u>289</u>	<u>556</u>	<u>1018</u>
Fodder crops	75	66	123	48	56	121	77	126
Miscellaneous food and non-foodcrops	280	44	65	38	61	33	50	67
Straw	14952	16273	24577	14215	18341	23428	28667	35923
Arhar sticks	1135	708	1543	953	1007	1098	1017	989
Farmyard wood	199	199	166	136	172	126	133	144
Grass	1844	1796	1570	1403	1361	1590	1833	1870
Other byproducts	10991	7239	10449	9133	9534	9385	11351	12034
Gross Income	<u>166509</u>	<u>140747</u>	<u>216446</u>	<u>162179</u>	<u>184152</u>	<u>232595</u>	<u>247122</u>	<u>285523</u>

TABLE 9.20 : GROSS INCOME FROM AGRICULTURE IN PARBHANI DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	1285	1605	1408	1437	2013	2783	2941	2287
Wheat	2923	6851	4352	5423	10197	9326	12018	13806
Jawar	21495	35186	45991	33333	29011	104666	66039	71952
Bajri	113	319	310	224	320	350	212	237
Ragi	-	-	-	-	-	-	-	-
Other cereals	455	233	532	224	229	554	182	200
Total cereals	<u>26271</u>	<u>44194</u>	<u>52593</u>	<u>40641</u>	<u>41770</u>	<u>117679</u>	<u>81392</u>	<u>88482</u>
Gram	3287	9854	4247	3043	6466	5584	4537	6745
Tur	12572	8953	6471	1895	4398	9722	8048	9985
Other pulses	10749	12145	9464	3555	7641	11294	9427	10367
Total pulses	<u>26608</u>	<u>30952</u>	<u>20182</u>	<u>8493</u>	<u>18505</u>	<u>26600</u>	<u>22012</u>	<u>27097</u>
Total foodgrains	<u>52879</u>	<u>75146</u>	<u>72775</u>	<u>49134</u>	<u>60275</u>	<u>144279</u>	<u>103404</u>	<u>115579</u>
Sugarcane	2718	1463	1686	1026	1501	2911	2568	3122
Chillies	1913	1044	2046	1478	1585	2906	2488	2402
Other condiments and spices	476	207	354	234	325	603	627	509
Total condiments and spices	<u>2389</u>	<u>1251</u>	<u>2400</u>	<u>1712</u>	<u>1910</u>	<u>3509</u>	<u>3115</u>	<u>2911</u>
Fruits and vegetables	6613	6579	5242	3297	9456	10650	9234	8966
Cotton	25617	21056	23815	25383	18035	28782	35244	28736
Other fibres	7356	3764	5259	4200	3129	5470	5147	5087
Total fibres	<u>32973</u>	<u>24820</u>	<u>29074</u>	<u>29583</u>	<u>21164</u>	<u>34252</u>	<u>40391</u>	<u>33823</u>
Groundnut	13249	15093	21485	23708	14191	17993	5233	11583
Sesamum	304	255	302	356	158	484	411	418
Linseed	1226	1037	1024	973	1574	1494	2236	2812
Other oilseeds	3368	3978	4546	4479	3592	4559	1709	4003
Total oilseeds	<u>18147</u>	<u>20363</u>	<u>27357</u>	<u>29516</u>	<u>19515</u>	<u>24530</u>	<u>9589</u>	<u>18816</u>
Tobacco	-	141	111	119	-	134	-	-
Other drugs and narcotics	-	-	-	54	-	40	55	1082
Total drugs and narcotics	-	<u>141</u>	<u>111</u>	<u>173</u>	-	<u>174</u>	<u>55</u>	<u>1082</u>
Fodder crops	5	3	2	5	5	402	210	39
Miscellaneous food and non-foodcrops	92	4	8	10	14	4	67	13
Straw	10179	16793	16626	15181	14770	25526	25208	27395
Arhar sticks	1879	1307	1870	999	1062	2001	1362	1444
Farmyard wood	402	271	230	131	377	281	326	701
Grass	2177	2120	1854	1657	1607	1877	2164	2207
Other byproducts	10031	9940	11969	9612	8039	10948	11792	11961
Gross Income	<u>140484</u>	<u>160201</u>	<u>171204</u>	<u>142036</u>	<u>139695</u>	<u>261344</u>	<u>209485</u>	<u>228059</u>

TABLE 9.21 : GROSS INCOME FROM AGRICULTURE IN NANDED DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	4531	3527	3114	5314	2221	4721	3546	3799
Wheat	2104	4852	2013	3171	6955	5354	1635	7207
Jawar	13398	35250	26422	33379	19815	64306	42962	58358
Bajri	26	-	28	20	24	106	94	71
Ragi	-	29	70	-	-	-	43	-
Other cereals	197	132	357	209	188	259	287	237
Total cereals	<u>20256</u>	<u>43790</u>	<u>32004</u>	<u>42093</u>	<u>29203</u>	<u>74746</u>	<u>48567</u>	<u>69672</u>
Gram	2613	4041	3231	1803	3546	3123	4206	2474
Tur	14378	13221	5230	4254	4173	8651	7213	10017
Other pulses	10652	10320	6913	1763	2103	4527	4648	3666
Total pulses	<u>27643</u>	<u>27582</u>	<u>15374</u>	<u>7820</u>	<u>9822</u>	<u>16301</u>	<u>16067</u>	<u>16157</u>
Total foodgrains	<u>47899</u>	<u>71372</u>	<u>47378</u>	<u>49913</u>	<u>39025</u>	<u>91047</u>	<u>64634</u>	<u>85829</u>
Sugarcane	2864	1547	1528	1764	1714	2974	3142	3914
Chillies	6283	2909	5472	10254	4690	8303	7824	6968
Other condiments and spices	898	744	1319	1156	609	1253	1110	634
Total condiments and spices	<u>7181</u>	<u>3653</u>	<u>6791</u>	<u>11410</u>	<u>5299</u>	<u>9556</u>	<u>8934</u>	<u>7602</u>
Fruits and vegetables	3808	4257	3245	2035	5122	6118	6384	7354
Cotton	26149	18566	15629	20858	13198	20937	38467	39200
Other fibres	3625	3750	2922	3525	2417	3845	6834	5646
Total fibres	<u>29774</u>	<u>22316</u>	<u>18551</u>	<u>24383</u>	<u>15615</u>	<u>24782</u>	<u>45301</u>	<u>44846</u>
Groundnut	12693	9327	9879	8103	6016	7328	3486	7022
Sesamum	112	176	115	82	50	306	338	504
Linseed	417	492	557	571	566	977	1237	808
Other oilseeds	2061	1523	1755	1159	929	1079	559	624
Total oilseeds	<u>15283</u>	<u>11518</u>	<u>12306</u>	<u>9915</u>	<u>7561</u>	<u>9690</u>	<u>5620</u>	<u>8958</u>
Tobacco	214	161	126	136	139	152	436	436
Other drugs and narcotics	193	145	113	122	125	137	392	392
Total drugs and narcotics	<u>407</u>	<u>306</u>	<u>239</u>	<u>258</u>	<u>264</u>	<u>289</u>	<u>828</u>	<u>828</u>
Fodder crops	193	38	11	6	2	12	15	-
Miscellaneous food and non-foodcrops	24	24	8	10	7	4	8	76
Straw	7583	18274	10145	13668	9203	21093	14430	19892
Arhar sticks	1788	1607	1561	1588	1007	1498	1143	1471
Farmyard wood	390	271	253	174	229	279	251	346
Grass	1719	1674	1464	1309	1270	1484	1711	1745
Other byproducts	11032	9807	8976	8304	6492	8960	12135	15280
Gross Income	<u>129945</u>	<u>146664</u>	<u>112456</u>	<u>124737</u>	<u>92810</u>	<u>177786</u>	<u>164536</u>	<u>198141</u>

TABLE 9.22 : GROSS INCOME FROM AGRICULTURE IN BHIR DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	1218	1286	2032	1029	486	1844	2096	1788
Wheat	3121	2484	3127	4002	5313	5988	6782	13299
Jawar	25322	33410	36869	34072	20651	50833	62061	60025
Bajri	7921	4923	8924	5759	7908	6951	5787	6574
Ragi	26	-	-	22	28	29	128	-
Other cereals	882	589	997	783	649	2553	1260	1251
Total cereals	<u>38490</u>	<u>42692</u>	<u>51949</u>	<u>45667</u>	<u>35035</u>	<u>68198</u>	<u>78114</u>	<u>82937</u>
Gram	2019	2866	3423	1323	3209	3121	3988	4550
Tur	2767	1788	2751	1191	2594	1923	2242	2695
Other pulses	3240	2993	5438	2637	5398	3843	4652	4600
Total pulses	<u>8026</u>	<u>7647</u>	<u>11612</u>	<u>5151</u>	<u>11201</u>	<u>8887</u>	<u>10882</u>	<u>11845</u>
Total foodgrains	<u>46516</u>	<u>50339</u>	<u>63561</u>	<u>50818</u>	<u>46236</u>	<u>77085</u>	<u>88996</u>	<u>94782</u>
Sugarcane	2052	1498	1227	1227	1628	1950	2336	3457
Chillies	2591	1388	2213	2431	2100	2308	2056	3905
Other condiments and spices	732	676	1270	791	505	757	685	1258
Total condiments and spices	<u>3323</u>	<u>2064</u>	<u>3483</u>	<u>3222</u>	<u>2605</u>	<u>3065</u>	<u>2741</u>	<u>5163</u>
Fruits and vegetables	3874	4644	3557	2279	5713	7478	6726	7354
Cotton	8459	3156	11564	6258	9405	7954	11001	8108
Other fibres	2175	1234	3425	1822	2352	2595	3614	2452
Total fibres	<u>10634</u>	<u>4390</u>	<u>14989</u>	<u>8080</u>	<u>11757</u>	<u>10549</u>	<u>14615</u>	<u>10560</u>
Groundnut	20152	14692	25911	32673	26506	17300	15755	20593
Sesamum	1116	642	866	716	879	1179	1132	1062
Linseed	616	1139	955	1009	1229	1547	1357	1986
Other oilseeds	5644	3986	6353	5101	4811	3399	3702	4933
Total oilseeds	<u>27528</u>	<u>20459</u>	<u>34085</u>	<u>39499</u>	<u>33425</u>	<u>23425</u>	<u>21946</u>	<u>28574</u>
Tobacco	214	122	190	102	-	115	330	338
Other drugs and narcotics	96	-	-	15	-	69	198	76
Total drugs and narcotics	<u>310</u>	<u>122</u>	<u>190</u>	<u>117</u>	<u>-</u>	<u>184</u>	<u>528</u>	<u>414</u>
Fodder crops	58	23	54	14	93	17	14	22
Miscellaneous food and non-foodcrops	128	68	19	6	7	8	-	4
Straw	13308	15275	16864	15758	13540	18200	26444	25897
Arhar sticks	517	327	572	426	626	463	435	455
Farmyard wood	109	118	122	120	98	84	68	106
Grass	2591	2524	2207	1973	1914	2236	2578	2630
Other byproducts	4378	2255	5029	2958	3787	2951	3404	3595
Gross Income	<u>115326</u>	<u>104106</u>	<u>145959</u>	<u>126497</u>	<u>121429</u>	<u>147695</u>	<u>170831</u>	<u>183013</u>

TABLE 9.23 : GROSS INCOME FROM AGRICULTURE IN OSMANABAD DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	3872	3859	2847	4952	3563	5942	6397	4885
Wheat	2574	4775	3452	4296	8215	5717	8356	14454
Jawar	30098	52557	45444	48416	32717	69107	48674	85255
Bajri	3058	2393	2077	1150	1184	1420	1805	1226
Ragi	102	86	176	87	28	29	128	92
Other cereals	1257	916	1520	1102	880	983	941	1224
Total cereals	<u>40961</u>	<u>64586</u>	<u>55516</u>	<u>60003</u>	<u>46587</u>	<u>83198</u>	<u>66301</u>	<u>107136</u>
Gram	5196	9320	7892	5388	9202	5755	5428	8704
Tur	18684	12997	8408	4469	6428	8861	12361	15884
Other pulses	16193	14468	14381	1337	2922	4992	7626	6962
Total pulses	<u>40073</u>	<u>36785</u>	<u>30681</u>	<u>11194</u>	<u>18552</u>	<u>19608</u>	<u>25415</u>	<u>31550</u>
Total foodgrains	<u>81034</u>	<u>101371</u>	<u>86197</u>	<u>71197</u>	<u>65139</u>	<u>102806</u>	<u>91716</u>	<u>138686</u>
Sugarcane	10690	6322	9117	7797	9265	5384	7351	8110
Chillies	8785	2867	4444	3472	2590	4987	4082	5561
Other condiments and spices	6355	2911	4377	2614	1607	5088	2527	3541
Total condiments and spices	<u>15140</u>	<u>5778</u>	<u>8821</u>	<u>6086</u>	<u>4197</u>	<u>10075</u>	<u>6609</u>	<u>9102</u>
Fruits and vegetables	4409	5031	3370	3541	8569	9970	8892	7698
Cotton	8919	2940	6247	6466	3775	4898	6420	5792
Other fibres	9633	4297	7374	8388	4158	7065	10879	13371
Total fibres	<u>18552</u>	<u>7237</u>	<u>13621</u>	<u>14854</u>	<u>7933</u>	<u>11963</u>	<u>17299</u>	<u>19163</u>
Groundnut	28837	21311	35682	42801	21941	33085	26550	39418
Sesamum	1176	820	1225	1366	549	919	993	767
Linseed	1426	2517	1684	1747	2011	2007	3154	2688
Other oilseeds	7250	4514	6454	7578	3600	6200	7263	6180
Total oilseeds	<u>38689</u>	<u>29162</u>	<u>45045</u>	<u>53492</u>	<u>28101</u>	<u>42211</u>	<u>37960</u>	<u>49053</u>
Tobacco	214	-	252	271	139	305	312	332
Other drugs and narcotics	-	-	-	-	-	61	120	43
Total drugs and narcotics	<u>214</u>	<u>-</u>	<u>252</u>	<u>271</u>	<u>139</u>	<u>366</u>	<u>432</u>	<u>375</u>
Fodder crops	137	55	88	121	105	127	109	197
Miscellaneous food and non-foodcrops	88	40	27	54	32	66	307	-
Straw	15898	25168	21016	20370	16612	22558	21132	33672
Arhar sticks	2325	1580	2597	2251	1553	2105	2397	2078
Farmyard wood	212	252	210	178	330	232	232	237
Grass	2655	2586	2261	2021	1960	2290	2640	2693
Other byproducts	4393	2337	3826	2986	2736	2888	2973	2933
Gross Income	<u>194436</u>	<u>186919</u>	<u>196448</u>	<u>185219</u>	<u>146671</u>	<u>213041</u>	<u>200049</u>	<u>273997</u>

TABLE 9.24 : GROSS INCOME FROM AGRICULTURE IN MARATHWADA (AT CURRENT PRICES)
(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	12230	11882	10542	14413	8653	16735	16222	13770
Wheat	19186	27484	23372	26651	46691	36298	46231	71631
Jawar	111337	187839	207731	180291	127726	341411	270787	353554
Bajri	18008	13588	23012	14334	18352	21885	23752	20307
Ragi	154	115	246	109	111	87	342	138
Other cereals	3215	2451	4231	2809	2615	4984	3146	3524
Total cereals	<u>164130</u>	<u>243359</u>	<u>269134</u>	<u>238607</u>	<u>204148</u>	<u>421400</u>	<u>360480</u>	<u>462924</u>
Gram	17230	29444	21879	14121	26503	22277	23199	27757
Tur	54468	40834	29242	13767	21766	34921	37014	45530
Other pulses	47724	44623	44567	15346	27947	39743	47885	38962
Total pulses	<u>119422</u>	<u>114901</u>	<u>95688</u>	<u>43234</u>	<u>76216</u>	<u>96941</u>	<u>108098</u>	<u>112249</u>
Total foodgrains	<u>283552</u>	<u>358260</u>	<u>364822</u>	<u>281841</u>	<u>280364</u>	<u>518341</u>	<u>468578</u>	<u>575173</u>
Sugarcane	28800	16125	22170	17304	22403	22333	28089	34008
Chillies	22313	10049	18152	20540	14414	22364	19776	23780
Other condiments and spices	8632	4630	7609	4954	3218	7912	5135	6241
Total condiments and spices	<u>30945</u>	<u>14679</u>	<u>25761</u>	<u>25494</u>	<u>17632</u>	<u>30276</u>	<u>24911</u>	<u>30021</u>
Fruits and vegetables	27054	29799	22840	15548	39793	46679	44574	45849
Miscellaneous food and non-foodcrops	612	180	127	118	121	115	432	160
Cotton	88752	54827	79124	85915	69783	86932	123237	112413
Other fibres	27351	15406	24189	22713	16541	23802	33066	33268
Total fibres	<u>116103</u>	<u>70233</u>	<u>103313</u>	<u>108628</u>	<u>86324</u>	<u>110734</u>	<u>156303</u>	<u>145681</u>
Groundnut	97087	76970	116493	129042	90064	102187	59519	89914
Sesamum	5042	3077	3783	3375	2481	4022	4163	4095
Linseed	6162	7091	5441	5508	6960	7759	10797	12673
Other oilseeds	26979	20646	28632	24996	20087	24453	16007	19360
Total oilseeds	<u>135270</u>	<u>107784</u>	<u>154349</u>	<u>162921</u>	<u>119592</u>	<u>138421</u>	<u>90486</u>	<u>126042</u>
Tobacco	856	546	774	833	383	936	1479	1954
Other drugs and narcotics	353	145	1122	283	257	366	920	1763
Total drugs and narcotics	<u>1209</u>	<u>691</u>	<u>896</u>	<u>1116</u>	<u>640</u>	<u>1302</u>	<u>2399</u>	<u>3717</u>
Fodder crops	468	185	278	194	261	679	425	384
Straw	61920	91783	89228	79192	72466	110805	115881	142779
Arhar sticks	7644	5529	8143	6217	5255	7165	6354	6437
Farmyard wood	1312	1111	981	739	1206	1002	1010	1534
Grass	10986	10700	9356	8363	8112	9477	10926	11145
Other byproducts	40825	31578	40249	32993	30588	35132	41655	45803
Gross Income	<u>746700</u>	<u>738637</u>	<u>842513</u>	<u>740668</u>	<u>684757</u>	<u>1032461</u>	<u>992023</u>	<u>1168733</u>

TABLE 9.25 : GROSS INCOME FROM AGRICULTURE IN BULDHANA DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	504	937	547	506	327	1021	1225	931
Wheat	8111	5344	6515	6082	7635	11091	5194	12785
Jawar	50792	35620	36848	35427	31517	54995	45461	36345
Bajri	1095	823	905	769	791	1238	566	544
Ragi	-	-	-	-	-	-	-	-
Other cereals	25	35	29	30	41	56	26	75
Total cereals	<u>60527</u>	<u>42759</u>	<u>44844</u>	<u>42814</u>	<u>40311</u>	<u>68401</u>	<u>52472</u>	<u>50680</u>
Gram	1337	928	1398	736	1099	1515	567	1029
Tur	6864	4752	9449	5125	7075	8347	10290	11335
Other pulses	2877	4338	4357	4648	3040	6441	9258	8372
Total pulses	<u>11078</u>	<u>10018</u>	<u>15204</u>	<u>10509</u>	<u>11214</u>	<u>16303</u>	<u>20115</u>	<u>20736</u>
Total foodgrains	<u>71605</u>	<u>52777</u>	<u>60048</u>	<u>53323</u>	<u>51525</u>	<u>84704</u>	<u>72587</u>	<u>71416</u>
Sugarcane	929	539	478	552	474	885	1409	1332
Chillies	3403	657	1008	857	878	3752	2607	2754
Other condiments and spices	195	38	55	41	47	126	82	128
Total condiments and spices	<u>3598</u>	<u>695</u>	<u>1063</u>	<u>898</u>	<u>925</u>	<u>3878</u>	<u>2689</u>	<u>2882</u>
Fruits and vegetables	3474	3406	2933	1750	4432	5098	5586	5630
Cotton	69797	38834	45830	49348	42131	53532	65027	49716
Other fibres	1433	880	967	948	833	1077	1270	1004
Total fibres	<u>71230</u>	<u>39714</u>	<u>46797</u>	<u>50296</u>	<u>42964</u>	<u>54609</u>	<u>66297</u>	<u>50720</u>
Groundnut	9654	6399	12262	6706	5206	7058	6030	7328
Sesamum	417	303	481	382	384	318	341	410
Linseed	191	144	87	90	164	202	175	174
Other oilseeds	2170	837	2808	1530	1353	1329	898	1225
Total oilseeds	<u>12432</u>	<u>7683</u>	<u>15638</u>	<u>8708</u>	<u>7107</u>	<u>8907</u>	<u>7444</u>	<u>9137</u>
Tobacco	413	226	354	191	195	-	-	-
Other drugs and narcotics	-	-	-	-	-	120	66	88
Total drugs and narcotics	<u>413</u>	<u>226</u>	<u>354</u>	<u>191</u>	<u>195</u>	<u>120</u>	<u>66</u>	<u>88</u>
Fodder crops	-	1	1	-	1	2	-	-
Miscellaneous food and non-foodcrops	-	-	-	-	-	-	-	-
Straw	14697	9659	12773	13751	10483	15816	12396	12867
Arhar sticks	1852	1252	2842	1924	2659	1643	1524	1798
Farmyard wood	72	62	122	96	104	90	97	98
Grass	992	966	845	755	732	855	986	1006
Other byproducts	16650	12142	13560	13366	11648	15729	18155	17102
Gross Income	<u>197944</u>	<u>129122</u>	<u>157454</u>	<u>145610</u>	<u>133249</u>	<u>192336</u>	<u>189236</u>	<u>174076</u>

TABLE 9.26 : GROSS INCOME FROM AGRICULTURE IN AKOLA DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	1805	3192	2516	1675	1225	4181	3593	2599
Wheat	9474	7725	9381	7007	11917	14183	7713	17688
Jawar	65452	44382	43198	32349	38657	70851	32115	39967
Bajri	737	914	940	842	731	1234	481	674
Ragi	-	-	-	-	-	-	-	-
Other cereals	-	22	37	29	21	49	46	48
Total cereals	<u>77468</u>	<u>56235</u>	<u>56072</u>	<u>41902</u>	<u>52551</u>	<u>90498</u>	<u>43948</u>	<u>60976</u>
Gram	1539	1098	1948	1006	1551	1915	1340	1662
Tur	17541	7291	18042	10584	14264	11805	16354	14337
Other pulses	4364	3952	5159	2853	2322	4791	5343	3552
Total pulses	<u>23444</u>	<u>12341</u>	<u>25149</u>	<u>14443</u>	<u>18137</u>	<u>18511</u>	<u>23037</u>	<u>19551</u>
Total foodgrains	<u>100912</u>	<u>68576</u>	<u>81221</u>	<u>56345</u>	<u>70688</u>	<u>109009</u>	<u>66985</u>	<u>80527</u>
Sugarcane	258	124	96	78	102	221	300	236
Chillies	1783	1971	1680	1286	1756	1957	1738	1549
Other condiments and spices	122	129	128	105	87	130	106	76
Total condiments and spices	<u>1905</u>	<u>2100</u>	<u>1808</u>	<u>1391</u>	<u>1843</u>	<u>2087</u>	<u>1844</u>	<u>1625</u>
Fruits and vegetables	2739	2786	2496	1506	3940	5212	4902	4826
Cotton	93567	56697	64122	72806	59535	74511	71204	77475
Other fibres	1814	1018	1142	1101	887	1123	949	967
Total fibres	<u>95381</u>	<u>57715</u>	<u>65264</u>	<u>73907</u>	<u>60422</u>	<u>75634</u>	<u>72153</u>	<u>78442</u>
Groundnut	12891	8745	13731	9743	7316	11234	9544	9447
Sesamum	478	364	703	367	675	581	682	622
Linseed	779	620	573	425	1015	1389	1106	1189
Other oilseeds	140	76	137	91	95	174	113	101
Total oilseeds	<u>14288</u>	<u>9805</u>	<u>15144</u>	<u>10626</u>	<u>9101</u>	<u>13378</u>	<u>11445</u>	<u>11359</u>
Tobacco	-	-	-	-	-	-	-	-
Other drugs and narcotics	-	-	-	-	-	239	99	132
Total drugs and narcotics	-	-	-	-	-	<u>239</u>	<u>99</u>	<u>132</u>
Fodder crops	3	-	1	1	2	2	5	4
Miscellaneous food and non-foodcrops	4	4	4	3	4	4	-	4
Straw	17338	13253	14922	12295	11810	20380	10489	13636
Arhar sticks	3285	1334	3767	2760	3722	2323	2424	1897
Farmyard wood	54	47	123	98	73	52	55	48
Grass	1052	1025	896	801	777	908	1047	1068
Other byproducts	19951	15579	16714	17434	14385	20246	22323	26296
Gross Income	<u>257170</u>	<u>172348</u>	<u>202456</u>	<u>177245</u>	<u>176869</u>	<u>249695</u>	<u>194071</u>	<u>220100</u>

TABLE 9.27 : GROSS INCOME FROM AGRICULTURE IN AMRAVATI DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	1044	2144	1531	935	898	3005	2159	2065
Wheat	7778	7631	7350	6218	10320	10684	5069	12444
Jawar	41350	35220	39359	24772	22004	48944	28431	29670
Bajri	675	653	739	553	540	1068	410	528
Ragi	-	-	-	-	-	-	-	-
Other cereals	154	230	139	93	96	368	246	276
Total cereals	<u>51001</u>	<u>45878</u>	<u>49118</u>	<u>32571</u>	<u>33858</u>	<u>64069</u>	<u>36315</u>	<u>44983</u>
Gram	841	779	950	622	1157	1350	698	939
Tur	32070	15873	28377	14555	19835	15422	16966	20651
Other pulses	5912	3990	5306	1093	962	2884	1692	1587
Total pulses	<u>38823</u>	<u>20642</u>	<u>34633</u>	<u>16270</u>	<u>21954</u>	<u>19656</u>	<u>19356</u>	<u>23177</u>
Total foodgrains	<u>89824</u>	<u>66520</u>	<u>83751</u>	<u>48841</u>	<u>55812</u>	<u>83725</u>	<u>55671</u>	<u>68160</u>
Sugarcane	109	99	57	80	90	140	114	117
Chillies	3079	1577	1848	2000	2049	14028	11878	9641
Other condiments and spices	1298	101	110	113	70	492	506	287
Total condiments and spices	<u>4377</u>	<u>1678</u>	<u>1958</u>	<u>2113</u>	<u>2119</u>	<u>14520</u>	<u>12384</u>	<u>9928</u>
Fruits and vegetables	6012	6115	5366	3866	9062	10197	10488	10915
Cotton	83768	46508	59131	44297	42128	71568	53361	75132
Other fibres	2003	1121	775	641	599	1516	1834	1983
Total fibres	<u>85771</u>	<u>47629</u>	<u>59906</u>	<u>44938</u>	<u>42727</u>	<u>73084</u>	<u>55195</u>	<u>76115</u>
Groundnut	6407	2674	3737	2451	3797	5619	2441	4811
Sesamum	835	486	671	397	261	531	805	570
Linseed	669	479	390	331	819	1059	653	829
Other oilseeds	64	26	48	61	61	227	34	44
Total oilseeds	<u>7975</u>	<u>3665</u>	<u>4846</u>	<u>3240</u>	<u>4938</u>	<u>7436</u>	<u>3933</u>	<u>6254</u>
Tobacco	708	388	303	653	669	368	-	-
Other drugs and narcotics	-	-	-	-	-	578	199	264
Total drugs and narcotics	<u>708</u>	<u>388</u>	<u>303</u>	<u>653</u>	<u>669</u>	<u>946</u>	<u>199</u>	<u>264</u>
Fodder crops	4	5	7	6	6	8	7	19
Miscellaneous food and non-foodcrops	40	36	27	16	18	-	-	4
Straw	13665	11359	14358	10218	8856	13554	8432	11392
Arhar sticks	5202	2514	5128	3285	4484	2986	3114	4148
Farmyard wood	121	112	319	321	636	686	552	621
Grass	1184	1153	1008	901	874	1021	1177	1201
Other byproducts	23418	16866	20054	15674	14125	22108	18696	26573
Gross Income	<u>238410</u>	<u>158139</u>	<u>197088</u>	<u>134152</u>	<u>144416</u>	<u>230411</u>	<u>169962</u>	<u>215711</u>

TABLE 9.28 : GROSS INCOME FROM AGRICULTURE IN YEOTMAL DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	3344	4668	3172	2104	1415	5619	3414	3416
Wheat	2334	2947	2827	2133	4138	2587	2504	4782
Jawar	53747	64391	37146	34456	26094	75337	44121	42177
Bajri	1072	1307	1173	1220	520	1753	825	1341
Ragi	-	-	-	-	-	-	-	-
Other cereals	20	-	-	13	-	57	28	30
Total cereals	<u>60517</u>	<u>73313</u>	<u>44318</u>	<u>39926</u>	<u>32167</u>	<u>85353</u>	<u>50892</u>	<u>51746</u>
Gram	891	983	1199	634	1234	1333	590	1014
Tur	32417	50713	32628	18098	15375	22295	17758	33269
Other pulses	5647	12622	6616	2881	1509	3537	1812	2732
Total pulses	<u>38955</u>	<u>64318</u>	<u>40443</u>	<u>21613</u>	<u>18118</u>	<u>27165</u>	<u>20160</u>	<u>37015</u>
Total foodgrains	<u>99472</u>	<u>137631</u>	<u>84761</u>	<u>61539</u>	<u>50285</u>	<u>112518</u>	<u>71052</u>	<u>88761</u>
Sugarcane	671	380	292	217	194	244	248	340
Chillies	5348	2629	2857	2429	2635	2773	2462	3099
Other condiments and spices	414	208	209	154	189	115	193	192
Total condiments and spices	<u>5762</u>	<u>2837</u>	<u>3066</u>	<u>2583</u>	<u>2824</u>	<u>2888</u>	<u>2655</u>	<u>3291</u>
Fruits and vegetables	4208	4257	3370	2198	5319	5552	5586	5515
Cotton	74003	40476	38156	49134	25947	55589	62274	48665
Other fibres	2768	1684	1315	889	817	1556	1582	1202
Total fibres	<u>76771</u>	<u>42160</u>	<u>39471</u>	<u>50023</u>	<u>26764</u>	<u>57145</u>	<u>63856</u>	<u>49867</u>
Groundnut	12643	7038	10287	4171	3882	9619	2584	6166
Sesamum	1478	1457	1416	1089	1396	1220	1182	1020
Linseed	658	620	582	606	1222	1184	1276	1078
Other oilseeds	52	106	133	44	62	57	15	49
Total oilseeds	<u>14831</u>	<u>9221</u>	<u>12418</u>	<u>5910</u>	<u>6562</u>	<u>12080</u>	<u>5057</u>	<u>8313</u>
Tobacco	-	-	-	-	-	-	-	-
Other drugs and narcotics	-	-	-	-	-	-	-	44
Total drugs and narcotics	-	-	-	-	-	-	-	<u>44</u>
Fodder crops	-	-	-	-	-	-	2	-
Miscellaneous food and non-foodcrops	-	-	-	-	-	-	-	-
Straw	18652	20370	14011	13509	8303	20158	12688	14323
Arhar sticks	4848	7408	5437	3767	3204	4248	4275	3622
Farmyard wood	94	84	1900	1561	1037	1023	1014	993
Grass	1584	1543	1349	1206	1170	1367	1576	1608
Other byproducts	20623	14478	13891	15606	9948	18255	18917	16944
Gross Income	<u>247516</u>	<u>240369</u>	<u>179966</u>	<u>158119</u>	<u>115610</u>	<u>235478</u>	<u>186926</u>	<u>193621</u>

TABLE 9.29 : GROSS INCOME FROM AGRICULTURE IN WARDHA DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	517	560	383	234	272	1089	569	651
Wheat	6282	8540	7411	5372	9314	8516	5310	8271
Jawar	32377	29948	21386	17874	10955	29570	16469	23638
Bajri	-	-	-	-	-	-	-	209
Ragi	-	-	-	-	-	-	-	-
Other cereals	-	-	-	-	-	-	-	-
Total cereals	<u>39176</u>	<u>39048</u>	<u>29180</u>	<u>23480</u>	<u>20541</u>	<u>39175</u>	<u>22348</u>	<u>32769</u>
Gram	556	396	417	392	592	519	240	422
Tur	31947	9117	18885	9758	13393	12862	10293	22861
Other pulses	5627	2036	3363	602	1077	1611	886	1960
Total pulses	<u>38130</u>	<u>11549</u>	<u>22665</u>	<u>10752</u>	<u>15062</u>	<u>14992</u>	<u>11419</u>	<u>25243</u>
Total foodgrains	<u>77306</u>	<u>50597</u>	<u>51845</u>	<u>34232</u>	<u>35603</u>	<u>54167</u>	<u>33767</u>	<u>58012</u>
Sugarcane	58	50	58	50	56	77	99	54
Chillies	1458	920	1176	1143	1171	163	1448	1894
Other condiments and spices	78	99	136	86	190	19	124	179
Total condiments and spices	<u>1536</u>	<u>1019</u>	<u>1312</u>	<u>1229</u>	<u>1361</u>	<u>182</u>	<u>1572</u>	<u>2073</u>
Fruits and vegetables	4208	4567	3744	2401	6008	6911	7410	7813
Cotton	13837	10563	9824	9522	4915	23508	20972	19236
Other fibres	131	69	35	33	42	272	59	55
Total fibres	<u>13968</u>	<u>10632</u>	<u>9859</u>	<u>9555</u>	<u>4957</u>	<u>23780</u>	<u>21031</u>	<u>19291</u>
Groundnut	1181	631	480	259	263	653	206	436
Sesamum	1159	1352	793	745	302	1271	1494	1592
Linseed	1534	957	1203	915	1718	1425	1749	1497
Other oilseeds	5	10	61	27	-	-	-	-
Total oilseeds	<u>3879</u>	<u>2950</u>	<u>2537</u>	<u>1946</u>	<u>2283</u>	<u>3349</u>	<u>3449</u>	<u>3525</u>
Tobacco	-	-	-	-	-	-	-	-
Other drugs and narcotics	-	-	-	69	-	-	-	-
Total drugs and narcotics	-	-	-	<u>69</u>	-	-	-	-
Fodder crops	319	138	18	13	8	20	13	43
Miscellaneous food and non-foodcrops	-	4	-	-	-	4	4	-
Straw	8980	9025	8573	6920	4662	8745	5607	8132
Arhar sticks	5828	1625	3839	2478	3404	5451	2478	2941
Farmyard wood	1238	920	615	506	585	609	527	542
Grass	932	908	794	710	689	805	928	947
Other byproducts	9767	9171	8661	7915	5084	8654	7933	8187
Gross Income	<u>128019</u>	<u>91606</u>	<u>91855</u>	<u>68024</u>	<u>64700</u>	<u>112754</u>	<u>84818</u>	<u>111560</u>

TABLE 9.30 : GROSS INCOME FROM AGRICULTURE IN NAGPUR DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	5292	6017	6971	6124	9673	8203	6687	12532
Wheat	11153	14279	11672	9820	15196	16250	8533	19570
Jawar	40352	28637	37436	23267	18210	34712	24047	33638
Bajri	24	27	26	20	30	75	35	36
Ragi	-	-	-	-	-	-	-	-
Other cereals	25	10	11	16	22	31	26	30
Total cereals	<u>56846</u>	<u>48970</u>	<u>56116</u>	<u>39247</u>	<u>43131</u>	<u>59271</u>	<u>39328</u>	<u>65806</u>
Gram	1237	1055	1266	817	1565	1364	789	962
Tur	20311	27473	32340	14005	14994	17812	8891	19721
Other pulses	4553	6570	4878	512	839	1121	1724	1959
Total pulses	<u>26101</u>	<u>35098</u>	<u>38484</u>	<u>15334</u>	<u>17398</u>	<u>20297</u>	<u>11404</u>	<u>22642</u>
Total foodgrains	<u>82947</u>	<u>84068</u>	<u>94600</u>	<u>54581</u>	<u>60529</u>	<u>79568</u>	<u>50732</u>	<u>88448</u>
Sugarcane	116	58	66	54	54	48	94	94
Chillies	4051	1971	3865	3858	3806	3262	4201	5853
Other condiments and spices	1474	230	341	288	329	394	263	345
Total condiments and spices	<u>5525</u>	<u>2201</u>	<u>4206</u>	<u>4146</u>	<u>4135</u>	<u>3656</u>	<u>4464</u>	<u>6198</u>
Fruits and vegetables	20574	22059	17285	10541	26496	30591	32946	34240
Cotton	4874	4658	5823	4596	2379	7652	9771	7308
Other fibres	182	153	101	54	52	162	95	102
Total fibres	<u>5056</u>	<u>4811</u>	<u>5924</u>	<u>4650</u>	<u>2431</u>	<u>7814</u>	<u>9866</u>	<u>7410</u>
Groundnut	2400	1597	1839	1944	856	587	982	1095
Sesamum	1484	1974	1456	1239	599	1833	1821	2107
Linseed	2406	2360	2205	2076	2588	4283	3924	3412
Other oilseeds	12	94	66	31	36	44	46	44
Total oilseeds	<u>6302</u>	<u>6025</u>	<u>5566</u>	<u>5290</u>	<u>4079</u>	<u>6747</u>	<u>6773</u>	<u>6658</u>
Tobacco	708	776	1518	2287	2007	1100	266	285
Other drugs and narcotics	-	-	-	-	-	-	-	-
Total drugs and narcotics	<u>708</u>	<u>776</u>	<u>1518</u>	<u>2287</u>	<u>2007</u>	<u>1100</u>	<u>266</u>	<u>285</u>
Fodder crops	544	258	9	5	8	17	7	11
Miscellaneous food and non-foodcrops	4	8	11	13	14	20	34	31
Straw	12917	12144	15837	9929	9096	12659	8672	12610
Arhar sticks	5402	7136	9585	5183	5556	3340	1689	3077
Farmyard wood	3478	6230	705	530	612	538	553	581
Grass	1664	1621	1417	1267	1229	1435	1654	1687
Other byproducts	3668	4099	4839	2990	2615	3155	3629	3761
Gross Income	<u>148905</u>	<u>151494</u>	<u>161568</u>	<u>102466</u>	<u>118861</u>	<u>150688</u>	<u>121379</u>	<u>165091</u>

TABLE 9.31 : GROSS INCOME FROM AGRICULTURE IN BHANDARA DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	69760	88376	77446	77104	118804	107721	103039	172069
Wheat	4007	5469	5384	4541	2517	3065	3494	5522
Jawar	4741	5959	3732	4451	4866	5659	5190	5755
Bajri	-	-	-	-	-	-	-	-
Ragi	-	-	-	-	-	35	40	44
Other cereals	689	392	410	340	339	752	405	491
Total cereals	<u>79197</u>	<u>100196</u>	<u>86972</u>	<u>86436</u>	<u>126526</u>	<u>117232</u>	<u>112168</u>	<u>183881</u>
Gram	1546	1926	1911	1099	1648	2209	1161	1418
Tur	5085	4529	6694	3557	4642	968	1052	2411
Other pulses	6377	6741	4822	3096	5032	6154	3242	6969
Total pulses	<u>13008</u>	<u>13196</u>	<u>13427</u>	<u>7752</u>	<u>11322</u>	<u>9331</u>	<u>5455</u>	<u>10798</u>
Total foodgrains	<u>92205</u>	<u>113392</u>	<u>100399</u>	<u>94188</u>	<u>137848</u>	<u>126563</u>	<u>117623</u>	<u>194679</u>
Sugarcane	1851	1609	1796	1538	1490	1516	1347	833
Chillies	4699	3811	3529	4430	3806	2610	2462	3099
Other condiments and spices	486	394	314	447	403	308	215	256
Total condiments and spices	<u>5185</u>	<u>4205</u>	<u>3843</u>	<u>4877</u>	<u>4209</u>	<u>2918</u>	<u>2677</u>	<u>3355</u>
Fruits and vegetables	4142	4567	5054	3256	7978	7591	7752	8388
Cotton	-	-	-	-	-	-	-	-
Other fibres	65	70	73	44	37	97	101	84
Total fibres	<u>65</u>	<u>70</u>	<u>73</u>	<u>44</u>	<u>37</u>	<u>97</u>	<u>101</u>	<u>84</u>
Groundnut	234	260	160	200	313	305	139	140
Sesamum	63	136	147	100	87	137	141	135
Linseed	2019	2457	4211	3070	4816	4356	4128	5540
Other oilseeds	7	11	67	32	51	8	3	7
Total oilseeds	<u>2323</u>	<u>2864</u>	<u>4585</u>	<u>3402</u>	<u>5267</u>	<u>4806</u>	<u>4411</u>	<u>5822</u>
Tobacco	-	-	-	-	-	-	-	-
Other drugs and narcotics	-	-	-	-	-	-	-	-
Total drugs and narcotics	-	-	-	-	-	-	-	-
Fodder crops	429	170	154	111	-	3	-	-
Miscellaneous food and non-foodcrops	-	12	8	6	11	12	21	9
Straw	12535	11647	11159	11249	14785	15502	14246	18776
Arhar sticks	698	608	1026	680	890	181	200	372
Farmyard wood	2456	2475	587	461	519	415	402	415
Grass	1611	1569	1372	1226	1189	1389	1601	1633
Other byproducts	48	52	52	53	45	45	52	41
Gross Income	<u>123548</u>	<u>143240</u>	<u>130108</u>	<u>121091</u>	<u>174268</u>	<u>161038</u>	<u>150433</u>	<u>234407</u>

TABLE 9.32 : GROSS INCOME FROM AGRICULTURE IN CHANDA DISTRICT (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	51911	71819	64528	59359	75321	92508	69173	105445
Wheat	3967	7926	5884	5053	8100	6701	4458	7276
Jawar	22965	23843	19413	16834	14529	28753	28208	23740
Bajri	-	-	-	-	-	-	-	-
Ragi	32	35	43	27	34	-	40	44
Other cereals	335	198	250	277	279	547	364	449
Total cereals	<u>79210</u>	<u>103821</u>	<u>90118</u>	<u>81550</u>	<u>98263</u>	<u>128509</u>	<u>102243</u>	<u>136954</u>
Gram	1273	1990	2889	1559	2640	1857	1139	1176
Tur	6374	12403	5482	3254	2607	3794	1368	4184
Other pulses	4231	5386	4016	2465	4258	4668	3672	5805
Total pulses	<u>11878</u>	<u>19779</u>	<u>12387</u>	<u>7278</u>	<u>9505</u>	<u>10319</u>	<u>6179</u>	<u>11165</u>
Total foodgrains	<u>91088</u>	<u>123600</u>	<u>102505</u>	<u>88828</u>	<u>107768</u>	<u>138828</u>	<u>108422</u>	<u>148119</u>
Sugarcane	2082	1332	1287	1119	1399	1210	1134	762
Chillies	6806	6177	3865	3429	3513	7014	4780	7058
Other condiments and spices	550	488	333	243	270	598	344	472
Total condiments and spices	<u>7356</u>	<u>6665</u>	<u>4198</u>	<u>3672</u>	<u>3783</u>	<u>7612</u>	<u>5124</u>	<u>7530</u>
Fruits and Vegetables	2071	2399	2434	1506	3743	4305	4902	5056
Cotton	4261	3454	2785	2355	1875	2745	4477	4247
Other fibres	38	35	26	18	21	33	42	58
Total fibres	<u>4299</u>	<u>3489</u>	<u>2811</u>	<u>2373</u>	<u>1896</u>	<u>2778</u>	<u>4519</u>	<u>4305</u>
Groundnut	220	186	160	26	34	49	39	50
Sesamum	4357	4832	2811	2921	1265	4148	5459	6641
Linseed	3072	2652	2999	3008	6613	5359	5227	4116
Other oilseeds	13	134	125	55	33	44	44	48
Total oilseeds	<u>7662</u>	<u>7804</u>	<u>6095</u>	<u>6010</u>	<u>7945</u>	<u>9600</u>	<u>10769</u>	<u>10865</u>
Tobacco	575	315	493	1062	1087	1192	433	695
Other drugs and narcotics	-	-	-	-	-	-	-	-
Total drugs and narcotics	<u>575</u>	<u>315</u>	<u>493</u>	<u>1062</u>	<u>1087</u>	<u>1192</u>	<u>433</u>	<u>695</u>
Fodder crops	150	53	23	21	13	64	40	67
Miscellaneous food and non-foodcrops	4	4	4	3	7	12	4	9
Straw	16439	16918	15562	14740	14432	17491	17768	18816
Arhar sticks	1098	2088	1053	781	626	717	290	535
Farmyard wood	2396	2729	1017	784	771	898	842	872
Grass	2876	2801	2449	2189	2123	2481	2860	2917
Other byproducts	2222	2233	1914	1686	1267	1616	1904	1946
Gross Income	<u>140318</u>	<u>172430</u>	<u>141845</u>	<u>124774</u>	<u>146860</u>	<u>188804</u>	<u>159011</u>	<u>202484</u>

TABLE 9.33 : GROSS INCOME FROM AGRICULTURE IN VIDARBHA (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	134177	177713	157094	148041	207935	223347	189859	299708
Wheat	53106	59861	56424	46226	69137	73077	42275	88338
Jawar	311776	268000	238518	189430	166832	348821	224042	234930
Bajri	3603	3724	3783	3404	2612	5368	2317	3332
Ragi	32	35	43	27	34	35	80	88
Other cereals	1248	887	876	798	798	1860	1141	1399
Total cereals	<u>503942</u>	<u>510220</u>	<u>456738</u>	<u>387926</u>	<u>447348</u>	<u>652508</u>	<u>459714</u>	<u>627795</u>
Gram	9220	9155	11978	6865	11486	12062	6524	8622
Tur	152609	132151	151897	78936	92185	93305	82972	128769
Other pulses	39588	45635	38517	18150	19039	31207	27629	32936
Total pulses	<u>201417</u>	<u>186941</u>	<u>202392</u>	<u>103951</u>	<u>122710</u>	<u>136574</u>	<u>117125</u>	<u>170327</u>
Total foodgrains	<u>705359</u>	<u>697161</u>	<u>659130</u>	<u>491877</u>	<u>570058</u>	<u>789082</u>	<u>576839</u>	<u>798122</u>
Sugarcane	6074	4191	4130	3688	3859	4341	4745	3768
Chillies	30627	19713	19828	19432	19614	35559	31576	34947
Other condiments and spices	4617	1687	1626	1477	1585	2182	1833	1935
Total condiments and spices	<u>35244</u>	<u>21400</u>	<u>21454</u>	<u>20909</u>	<u>21199</u>	<u>37741</u>	<u>33409</u>	<u>36882</u>
Fruits and vegetables	47428	50156	42682	27024	66978	75457	79572	82383
Cotton	344107	201190	225671	232058	178910	289105	287086	281779
Other fibres	8434	5030	4434	3728	3288	5836	5932	4455
Total fibres	<u>352541</u>	<u>206220</u>	<u>230105</u>	<u>235786</u>	<u>182198</u>	<u>294941</u>	<u>293018</u>	<u>286234</u>
Ground-nut	45630	27530	42656	25500	21667	35124	21965	29473
Sesamum	10271	10904	8478	7240	4969	10039	11925	13097
Linseed	11328	10289	12250	10521	18955	19257	18238	17835
Other oilseeds	2463	1294	3445	1871	1691	1883	1153	1518
Total oilseeds	<u>69692</u>	<u>50017</u>	<u>66829</u>	<u>45132</u>	<u>47282</u>	<u>66303</u>	<u>53281</u>	<u>61923</u>
Tobacco	2404	1705	2668	4193	3958	2660	699	980
Other drugs and narcotics	-	-	-	69	-	937	364	528
Total drugs and narcotics	<u>2404</u>	<u>1705</u>	<u>2668</u>	<u>4262</u>	<u>3958</u>	<u>3597</u>	<u>1063</u>	<u>1508</u>
Fodder crops	1449	625	213	157	38	116	74	144
Miscellaneous food and non-foodcrops	52	68	54	41	54	52	63	57
Straw	115223	104375	107195	92611	82427	124305	90298	110552
Arhar sticks	28213	23965	32677	20858	24545	20889	15994	18390
Farmyard wood	9909	12659	5388	4357	4337	4311	4042	4170
Grass	11895	11586	10130	9055	8783	10261	11829	12067
Other byproducts	96347	74620	79685	75724	59117	89808	91609	100850
Gross Income	<u>1481830</u>	<u>1258748</u>	<u>1262340</u>	<u>1031481</u>	<u>1074833</u>	<u>1521204</u>	<u>1255836</u>	<u>1517050</u>

TABLE 9.34 : GROSS INCOME FROM AGRICULTURE IN MAHARASHTRA (BY CROPS) (AT CURRENT PRICES)

(Figures in thousand rupees)

Crops	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Paddy	414095	527345	537794	470766	5704412	645434	646160	836304
Wheat	113629	116074	133050	131411	176628	161966	154474	257320
Jowar	647960	610277	730934	617114	583551	1110157	963591	1110081
Bajri	121707	90023	183145	126660	130642	1190502	205308	1195005
Ragi	32609	49812	51232	38061	47398	57432	58108	60871
Other cereals	23047	23328	30513	18065	22369	32587	26499	29025
Total cereals	<u>1353047</u>	<u>1416859</u>	<u>1666668</u>	<u>1402077</u>	<u>1531000</u>	<u>2198078</u>	<u>2054140</u>	<u>2488606</u>
Gram	49365	57631	56217	44147	59669	61042	52498	61734
Tur	238258	197631	212930	122097	139098	166175	175212	225366
Other pulses	147526	145139	152737	76055	87193	140253	158697	144879
Total pulses	<u>435149</u>	<u>400401</u>	<u>421884</u>	<u>242299</u>	<u>285960</u>	<u>367470</u>	<u>386407</u>	<u>431979</u>
Total foodgrains	<u>1788196</u>	<u>1817260</u>	<u>2088552</u>	<u>1644376</u>	<u>1816960</u>	<u>2565548</u>	<u>2440547</u>	<u>2920585</u>
Sugarcane	309027	237905	263968	215471	240636	287068	345638	440587
Chillies	73558	44039	57815	64790	55230	84311	73515	100648
Other condiments and spices	25262	12931	18443	21234	19446	39543	16753	26994
Total condiments and spices	<u>98820</u>	<u>56970</u>	<u>76258</u>	<u>86024</u>	<u>74676</u>	<u>123854</u>	<u>90268</u>	<u>127642</u>
Fruits and vegetables	204542	218966	176531	116972	298449	355080	368334	379057
Cotton	495965	284747	413746	399784	311899	481850	545962	507156
Other fibres	45074	25175	39346	34008	26016	36102	47142	50523
Total fibres	<u>541039</u>	<u>309922</u>	<u>453092</u>	<u>433792</u>	<u>337915</u>	<u>517952</u>	<u>593104</u>	<u>557679</u>
Groundnut	282464	193800	316700	289248	233547	312948	297820	322358
Sesamum	20106	18911	19623	16833	12727	22966	23362	23701
Linseed	18284	17730	18113	16365	26475	28048	30030	31448
Other oilseeds	57559	42296	65320	53281	46050	51608	44219	48263
Total oilseeds	<u>378413</u>	<u>272737</u>	<u>419756</u>	<u>375727</u>	<u>318799</u>	<u>415570</u>	<u>395431</u>	<u>425770</u>
Tobacco	42532	33421	27830	29195	22711	30094	21123	18753
Other drugs and narcotics	7199	3364	2410	2678	3021	4579	4431	5231
Total drugs and narcotics	<u>49731</u>	<u>36785</u>	<u>30240</u>	<u>31873</u>	<u>25732</u>	<u>34673</u>	<u>25554</u>	<u>23984</u>
Fodder crops	65980	89894	89755	48437	71570	100277	92433	100455
Miscellaneous food and non-foodcrops	7296	676	1105	574	964	1015	1774	439
Straw	404150	364924	472942	451650	423373	556784	599112	668405
Arhar sticks	41394	33735	47103	34339	35974	35089	30009	31535
Farmyard wood	17844	20431	11885	9699	9234	9989	9304	10234
Grass	40968	39903	34889	31186	30250	35338	40738	41555
Other byproducts	160053	122718	157561	142436	116330	162833	172843	188225
Gross Income	<u>4107453</u>	<u>3622826</u>	<u>4323637</u>	<u>3622556</u>	<u>3800862</u>	<u>5201070</u>	<u>5205089</u>	<u>5916152</u>

TABLE 9.35 : GROSS INCOME FROM AGRICULTURE IN MAHARASHTRA (BY DISTRICTS)(AT CURRENT PRICES)

(Figures in thousand rupees)

Districts	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Thana	99465	140805	158686	115018	135708	144113	187888	216928
Bombay Suburban	4045	5541	5959	3996	5148	5737	6728	7265
Kolaba	94451	116733	131631	88308	119579	115809	125938	154494
Ratnagiri	108183	126590	135574	114799	129830	150326	142414	173393
KONKAN	<u>306144</u>	<u>389669</u>	<u>431850</u>	<u>322121</u>	<u>390265</u>	<u>415985</u>	<u>462968</u>	<u>552080</u>
Dhulia	72844	95368	181370	114826	127364	205938	220343	222887
Jalgaon	203045	109980	256779	212417	181584	303277	352019	295638
Nasik	175597	130262	229414	175344	189942	275000	260502	321428
Ahmednagar	273472	151639	245241	212069	283944	305426	376394	440193
Poona	207120	169399	180744	165271	192208	287938	327665	337538
Sholapur	156840	123511	197204	180698	181692	204280	282202	297567
Satara	154261	145468	154796	130351	141608	195388	211806	225150
Sangli	143420	131003	160287	149463	143415	193290	216354	263617
Kolhapur	186180	179142	181099	187847	209250	260883	246977	274271
DECCAN	<u>1572779</u>	<u>1235772</u>	<u>1786934</u>	<u>1528286</u>	<u>1651007</u>	<u>2231420</u>	<u>2494262</u>	<u>2678289</u>
Aurangabad	166509	140747	216446	162179	184152	232595	247122	285523
Parbhani	140484	160201	171204	142036	139695	261344	209485	228059
Nanded	129945	146664	112456	124737	92810	177786	164536	198141
Bhir	115326	104106	145959	126497	121429	147695	170831	183013
Osmanabad	194436	186919	196448	185219	146671	213041	200049	273997
MARATHWADA	<u>746700</u>	<u>738637</u>	<u>842513</u>	<u>740668</u>	<u>684757</u>	<u>1032461</u>	<u>992023</u>	<u>1168733</u>
Buldhana	197944	129122	157454	145610	133249	192336	189236	174076
Akola	257170	172348	202456	177245	176869	249695	194071	220100
Amravati	238410	158139	197088	134152	144416	230411	169962	215711
Yeotmal	247516	240369	179966	158119	115610	235478	186926	193621
Wardha	128019	91606	91855	68024	64700	112754	84818	111560
Nagpur	148905	151494	161568	102466	118861	150688	121379	165091
Bhandara	123548	143240	130108	121091	174268	161038	150433	234407
Chanda	140318	172430	141845	124774	146860	188804	159011	202484
VIDARBHA	<u>1481830</u>	<u>1258748</u>	<u>1262340</u>	<u>1031481</u>	<u>1074833</u>	<u>1521204</u>	<u>1255836</u>	<u>1517050</u>
MAHARASHTRA	<u>4107453</u>	<u>3622826</u>	<u>4323637</u>	<u>3622556</u>	<u>3800862</u>	<u>5201070</u>	<u>5205089</u>	<u>5916152</u>

CHAPTER X

THE STRUCTURE OF THE AGRICULTURAL INCOME OF MAHARASHTRA

As stated in the Introduction the purpose of estimation of agricultural income of Maharashtra district by district in this study is not to indicate the rates of growth in the agricultural sector of the respective districts. The main focus of our attention is the structure of Maharashtra's agricultural income. Structurally the agricultural income of Maharashtra -- meaning thereby in the context of this study the gross value in the aggregate of the crops raised -- is composed of the income from agriculture in the different districts. Thus an analysis of the structure of agricultural income is intended to highlight the diversities as between the districts in respect of agricultural income.

Further, it is felt that the relative position of a district with regard to a region's agricultural income is borne out satisfactorily not by estimates for a year or two but by those for a number of years. The income estimates relating to Maharashtra for the years 1951-52 to 1958-59 reveal a broad picture of relative differences which appears to be quite instructive. To be sure, in a scheme of ranking of districts on the basis of income

estimates at current prices the meaningfulness of a change in the precise relative position of a district from year to year is partially vitiated by the fact that prices of crops fluctuate differently in different districts.

Clearly the effect on the ranking of districts of these differences in the amplitude of price fluctuations could be removed if the crops in the districts are evaluated at the weighted average prices in Maharashtra as a whole instead of at the prices in the respective districts.

A limited effort on these lines is made in Appendix VI to show that probably the broad relative position of the respective districts would not change significantly even if the crops were to be revalued at Maharashtra prices. Then again, it will be seen later that there was a remarkable degree of constancy about the relative position of several districts over the period under study. It would be difficult to explain this in terms of any inter-compensatory change in productivity and prices. It is, therefore, better interpreted as an indication of diversity of performance in the agricultural sector.

It was explained in Chapter II that since the study of agricultural income of Maharashtra is principally a regional-sectoral study income in this context must be construed mainly as an index of productivity. When we therefore speak of the differences in the performance of

the districts we are referring to performance in terms of agricultural productivity, income being used as a composite index of such productivity. Clearly it would be meaningless to compare gross agricultural income in the aggregate in one district with that in another for the purpose in view. Productivity is a relationship between productive resources in use and income generated. In respect of the agricultural sector it is customary to analyse relationships of two types, the one between labour and income, and further that between land and income. We, however, leave the former out of account. A districtwise estimation of working force in agriculture for the years, 1951-52 to 1958-59 on the basis of decennial census data is likely to be somewhat arbitrary. Land utilisation data for the districts, on the other hand, are available for every year, and these data for Maharashtra districts seem to be reliable in a reasonable degree. It is, therefore, the land-income relationship which we shall analyse in order to highlight the inter-district diversities.

To begin with, it may be instructive to make a comparative study of the correlation between agricultural income and geographical size of the respective districts. Two proportions are calculated in the first instance:

- (i) the proportion of the agricultural income of a district

to that of Maharashtra, and (ii) the proportion of a district's geographical area to that of Maharashtra. When the two proportions are juxtaposed we can easily think in terms of a ratio between proportion (i) and proportion (ii), which we shall designate as the 'income-size ratio'. It is seen that the ratio for Maharashtra is 1, and that the ratios for the districts would spread themselves about the ratio for Maharashtra, some being higher and some lower than unity. Evidently if the ratio for a district turns out to be more than 1 it signifies that a district's proportionate contribution to Maharashtra's agricultural income was larger than its proportionate geographical size. Prima facie, this is a performance better than the average for Maharashtra. In the same way a ratio less than 1 should indicate a relatively inferior performance. As a first approximation we shall describe 'income-size ratio' higher than 1 as being favourable and that less than 1 as being unfavourable. Table 10.1 presents the proportions listed at (i) and (ii) above for all the districts, proportion (i) being shown year by year for the whole period.

Considering the districts-groups first it is seen from the table that in Marathwada the relative geographical size was larger than the proportionate contribution to Maharashtra's agricultural income throughout the period;

TABLE 10.1 : GEOGRAPHICAL AREA AND AGRICULTURAL INCOME - PROPORTIONS

(Percentages)

Districts	Proportion - geographical area	Proportion -- agricultural income							
		1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Thana	3.1	2.4	3.9	3.7	3.2	3.6	2.8	3.6	3.7
Bombay Suburban	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Kolaba	2.2	2.3	3.2	3.1	2.4	3.2	2.2	2.4	2.6
Ratnagiri	4.2	2.6	3.5	3.1	3.2	3.4	2.9	2.7	2.9
KONKAN	<u>9.6</u>	<u>7.4</u>	<u>10.8</u>	<u>10.0</u>	<u>8.9</u>	<u>10.3</u>	<u>8.0</u>	<u>8.8</u>	<u>9.3</u>
Dhulia	4.1	1.8	2.6	4.2	3.2	3.4	4.0	4.2	3.8
Jalgaon	3.7	4.9	3.0	5.9	5.9	4.8	5.8	6.8	5.0
Nasik	5.1	4.3	3.6	5.3	4.8	5.0	5.3	5.0	5.4
Ahmednagar	5.5	6.7	4.2	5.7	5.8	7.5	5.9	7.2	7.5
Poona	5.1	5.1	4.7	4.2	4.6	5.1	5.5	6.3	5.7
Sholapur	4.9	3.8	3.4	4.6	5.0	4.8	4.0	5.4	5.0
Satara	3.4	3.8	4.0	3.6	3.6	3.7	3.8	4.1	3.8
Sangli	2.8	3.5	3.6	3.7	4.1	3.8	3.7	4.2	4.4
Kolhapur	2.7	4.5	4.9	4.2	5.2	5.5	5.0	4.8	4.6
DECCAN	<u>37.3</u>	<u>38.4</u>	<u>34.0</u>	<u>41.4</u>	<u>42.2</u>	<u>43.6</u>	<u>43.0</u>	<u>48.0</u>	<u>45.2</u>
Aurangabad	5.4	4.1	3.9	5.0	4.5	4.8	4.5	4.8	4.8
Parbhani	4.1	3.4	4.4	3.9	3.9	3.7	5.0	4.0	3.8
Nanded	3.4	3.2	4.0	2.6	3.4	2.4	3.4	3.2	3.3
Bhir	3.6	2.8	2.9	3.4	3.5	3.2	2.8	3.3	3.1
Osmanabad	4.6	4.7	5.2	4.5	5.1	3.9	4.1	3.8	4.6
MARATHWADA	<u>21.1</u>	<u>18.2</u>	<u>20.4</u>	<u>19.4</u>	<u>20.4</u>	<u>18.0</u>	<u>19.8</u>	<u>19.1</u>	<u>19.6</u>
Buldhana	3.2	4.8	3.6	3.6	4.0	3.5	3.7	3.6	3.0
Akola	3.5	6.3	4.8	4.7	4.9	4.6	4.8	3.7	3.7
Amravati	4.0	5.8	4.4	4.6	3.7	3.8	4.4	3.3	3.7
Yeotmal	4.4	6.0	6.6	4.2	4.4	3.0	4.5	3.6	3.3
Wardha	2.1	3.1	2.5	2.1	1.9	1.7	2.2	1.6	2.0
Nagpur	3.2	3.6	4.2	3.7	2.8	3.0	2.9	2.3	2.8
Bhandara	3.1	3.0	3.9	3.0	3.3	4.6	3.1	2.9	4.0
Chanda	8.5	3.4	4.8	3.3	3.5	3.9	3.6	3.1	3.4
VIDARBHA	<u>32.0</u>	<u>36.0</u>	<u>34.8</u>	<u>29.2</u>	<u>28.5</u>	<u>28.1</u>	<u>29.2</u>	<u>24.1</u>	<u>25.9</u>
MAHARASHTRA	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

N.B. :- The proportion of geographical area is calculated on the basis of data in Census of India, 1961, Vol. X (Maharashtra), Part II-A at pp. 126-127.

in other words, the 'income-size ratio' was less than 1 suggesting, *prima facie*, an inferior performance within the agricultural sector. The ratio for Vidarbha was unfavourable for all years except 1951-52 and 1952-53. Similarly the ratio for Konkan indicates comparatively lower-grade performance in five of the eight years, viz., 1951-52, 1954-55, 1956-57, 1957-58 and 1958-59. It is seen that position relating to Deccan was the most satisfactory, ratio being more than one in all years except 1952-53. In the last four years the ratio for Deccan was even significantly higher than 1. If the income-size ratio is of any value it would appear that with regard to the performance of the agricultural sector Deccan ranked highest and Marathwada lowest, with Konkan and Vidarbha falling in between, Konkan probably having an edge over Vidarbha.

In order to organise discussion on the relative position of the districts we shall assume here that a ratio greater than 1 points to a 'high' category of performance and that lower than 1 to a 'low' category. It is not likely, however, that the ratio would be consistently in one direction only in every district in all the eight years. Since the indicator being considered, viz., income-size ratio, is only a first approximation we shall further assume that a ratio consistently higher than 1

indicates a 'high' category whereas that more than 1 for a majority number of years (i.e. at least five years out of eight) suggests a 'mostly high' category which may be considered along with the former category for purposes of a tentative analysis. Similarly in opposite cases we have a 'low' category and a 'mostly low' category.

Given the classification set out above borderline cases relate only to six districts, leaving out of consideration Bombay Suburban district, which was of little consequence from the point of view of agricultural income. The six districts are: Poona, Osmanabad, Amravati, Yeotmal, Wardha and Bhandara. For Poona the ratio was lower than 1 for three years, higher than 1 for another three years and just one for two years. However, one finds that the margin on the higher side between the proportionate contribution to agricultural income of Maharashtra and proportionate geographical size was relatively somewhat larger than that on the lower side. We shall therefore include Poona in the 'mostly high' category. On the basis of similar considerations Amravati and Bhandara are included in the same category. As for Osmanabad, Yeotmal and Wardha the ratio was lower than 1 for 4 years, higher for 3 years and just 1 for one year. These districts may be shown under the 'mostly low' category. Finally, it may be pointed out that Kolaba with a ratio higher than 1

for seven years and just 1 in one year, viz., 1956-57, is being included in the 'high' category. The classification of districts by income-size ratio made on the basis of the analysis above is given in Table 10.2.

TABLE 10.2 : CLASSIFICATION OF DISTRICTS (INCOME-SIZE RATIO)

High	Mostly High	Mostly Low	Low
1. Kolaba	1. Thana	1. Dhulia	1. Ratnagiri
2. Satara	2. Jalgaon	2. Nasik	2. Aurangabad
3. Sangli	3. Ahmednagar	3. Sholapur	3. Bhir
4. Kolhapur	4. Poona	4. Parbhani	4. Chanda
5. Akola	5. Buldhana	5. Nanded	
	6. Amravati	6. Osmanabad	
	7. Bhandara	7. Yeotmal	
		8. Wardha	
		9. Nagpur	

N.B. : (i) Bombay Suburban district has been left out.

(ii) In any category the district are not arranged in a serial order of performance.

One however feels that a less indirect measure of performance within the agricultural sector would be the ratio between the proportionate contribution by a district

to Maharashtra's agricultural income and the proportion of the district's gross cropped area to that of Maharashtra. We shall call this ratio 'income-area ratio'. Evidently the proportion of gross cropped area need not be the same from year to year. Strictly speaking, therefore, we must relate the two proportions for each year of the eight-year period. For purposes of a broad measure we have in view here this does not appear to be worthwhile. Instead we shall attempt to relate the two proportions in 1951-52, 1955-56 and 1958-59, i.e. in the first, a middle and the last years. It is seen that the proportion of gross cropped area in the respective districts did not change much in these three years. Table 10.3 presents the relevant information.

On the lines of the income-size ratio we shall assume that income-area ratio higher than 1 indicated a 'high' category of performance and ratio lower than 1 signified a 'low' category. Since the income-area ratio is a less indirect measure of productivity in the agricultural sector than the income-size ratio the categorisation on the basis of the former ratio must be treated as the more meaningful of the two for a study of the inter-district diversities in respect of agricultural productivity. There is one further point that needs to be noted. This relates to the implication of the difference between

TABLE 10.3 : GROSS CROPPED AREA AND AGRICULTURAL INCOME -- PROPORTIONS

(Percentages)

Districts	1951-52		1955-56		1958-59	
	Proportion: g.c.a.	Proportion: agricultu- ral income	Proportion: g.c.a.	Proportion: agricultu- ral income	Proportion: g.c.a.	Proportion: agricultu- ral income
Thana	1.6	2.4	1.5	3.6	1.6	3.7
Bombay Suburban	0.1	0.1	0.1	0.1	0.1	0.1
Kolaba	1.1	2.3	1.2	3.2	1.1	2.6
Ratnagiri	1.9	2.6	1.9	3.4	1.9	2.9
KONKAN	<u>4.7</u>	<u>7.4</u>	<u>4.7</u>	<u>10.3</u>	<u>4.7</u>	<u>9.3</u>
Dhulia	3.9	1.8	3.9	3.4	3.9	3.8
Jalgaon	4.7	4.9	4.5	4.8	4.6	5.0
Nasik	5.5	4.3	5.2	5.0	5.2	5.4
Ahmednagar	7.7	6.7	7.2	7.5	6.9	7.5
Poona	6.0	5.1	5.7	5.1	5.7	5.7
Sholapur	6.6	3.8	6.5	4.8	6.5	5.0
Satara	4.1	3.8	3.9	3.7	4.0	3.8
Sangli	3.8	3.5	3.7	3.8	3.6	4.4
Kolhapur	2.2	4.5	2.2	5.5	2.2	4.6
DECCAN	<u>44.5</u>	<u>38.4</u>	<u>42.8</u>	<u>43.6</u>	<u>42.6</u>	<u>45.2</u>
Aurangabad	6.1	4.1	6.9	4.8	7.1	4.8
Parbhani	4.5	3.4	5.1	3.7	4.9	3.8
Nanded	3.5	3.2	3.8	2.4	3.9	3.3
Bhir	4.2	2.8	4.5	3.2	4.5	3.1
Osmanabad	5.8	4.7	5.9	3.9	5.6	4.6
MARATHWADA	<u>24.2</u>	<u>18.2</u>	<u>26.2</u>	<u>18.0</u>	<u>26.0</u>	<u>19.6</u>
Buldhana	3.8	4.8	3.7	3.5	3.7	3.0
Akola	4.2	6.3	4.1	4.6	4.2	3.7
Amravati	3.7	5.8	3.6	3.8	3.6	3.7
Yeotmal	4.0	6.0	3.9	3.0	4.0	3.3
Wardha	2.2	3.1	2.1	1.7	2.2	2.0
Nagpur	2.9	3.6	2.9	3.0	2.9	2.8
Bhandara	2.6	3.0	2.7	4.6	2.7	4.0
Chanda	3.2	3.4	3.3	3.9	3.4	3.4
VIDARBHA	<u>26.6</u>	<u>36.0</u>	<u>26.3</u>	<u>28.1</u>	<u>26.7</u>	<u>25.9</u>
MAHARASHTRA	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

N.B. :- g.c.a. : gross cropped area.

the income-size and the income-area ratios of a district or a districts-group.

The income-size ratio is given by :

$$\frac{\text{Proportionate contribution to Maharashtra's agricultural income}}{\text{Proportionate geographical size}}$$

and the income-area ratio by :

$$\frac{\text{Proportionate contribution to Maharashtra's agricultural income}}{\text{Proportionate gross cropped area}}$$

The latter ratio would be larger than the former only if the proportion of a district's gross cropped area to that of Maharashtra were lower than the proportion of its geographical area. This is the same thing as saying that relatively to Maharashtra the district had a lower proportion of geographical area under crops. If we are to describe this situation as one of 'low utilisation' of geographical area for agricultural purposes then it would be proper to say that an income-area ratio higher than income-size ratio would signify 'low utilisation'. The opposite situation would be one of 'high utilisation'.

The income-area ratio was more than 1 in Konkan in all the three years. In 1955-56 it even exceeded 2 and was nearly 2 in 1958-59. Then again, in all the three years this ratio exceeded the income-size ratio in

a significant degree. In the light of what has been said earlier this would suggest that in Konkan agricultural productivity was relatively higher in a setting of low utilisation. The income-area ratio in Deccan was less than 1 in 1951-52 but more than unity in the other two years. Deccan thus would appear to come under the 'high' category. However, in all the three years the income-area ratio was lower than the income-size ratio. This would mean that the proportion of geographical area under crops was higher in Deccan than the average for the whole of Maharashtra; in other words, there was high utilisation in this region. Thus its agricultural productivity was not as high as mere income-size ratio indicated.

In Vidarbha the income-area ratio was more than 1 in 1951-52 and 1955-56, and slightly lower than 1 in 1958-59. This probably suggests a performance better than the average for Maharashtra. But, as in Konkan, the income-area ratio was higher than the income-size ratio implying a condition of low utilisation.

Marathwada presents a special case. Here two things need to be noted. The income-area ratio, like the income-size ratio, was less than 1 for all the three years. Secondly, the former ratio was even lower than

the latter. Thus not merely did Marathwada belong to the 'low' category but further this was so inspite of the fact that the proportion of gross cropped area to geographical area was higher in Marathwada than in Maharashtra as a whole. This is to say that in this region relatively low productivity was combined with comparatively high utilisation. In sum, a study of income-area ratio seems to show that in point of productivity Konkan ranked first followed by Vidarbha, Deccan and Marathwada, in that order.

We classify districts on the criterion of income-area ratio into 'high', 'mostly high', 'mostly low' and 'low', attaching the same meaning to these categories as was done earlier. Since the data considered relate only to three years the only possible borderline case would occur if the ratio was more than one, equal to one and less than one in one year each. No such case is seen. The classification of the districts is set out in the table on the next page.

A comparison between Tables 10.2 and 10.4 shows that the following districts appear in the same category in the two tables: (i) High: Kolaba and Kolhapur, (ii) Mostly High : Ahmednagar, (iii) Mostly low : Nasik, Yeotmal and Wardha, and (iv) Low : Aurangabad and Bhir. In the case of Kolaba and Kolhapur the income-area ratio

TABLE 10.4 : CLASSIFICATION OF DISTRICTS (INCOME-AREA RATIO)

High	Mostly High	Mostly Low	Low
1. Thana	1. Ahmednagar	1. Nasik	1. Dhulia
2. Kolaba	2. Sangli	2. Poona	2. Sholapur
3. Ratnagiri	3. Akola	3. Buldhana	3. Satara
4. Jalgaon	4. Nagpur	4. Yeotmal	4. Aurangabad
5. Kolhapur	5. Chanda	5. Wardha	5. Parbhani
6. Amravati			6. Nanded
7. Bhandara			7. Bhir
			8. Osmanabad

N.B. (i) Bombay Suburban district has been left out.

(ii) In any category the districts are not arranged in a serial order of performance.

was quite higher than the income-size ratio. The former rose to above 2 in the three years, 1951-52, 1955-56 and 1958-59. Earlier this has been characterised as a situation of low utilisation. The indicators being studied would thus suggest that in Kolaba and Kolhapur high productivity and low utilisation went together. In the same way by studying the relevant tables one may say that in Ahmednagar there was comparatively high productivity and high utilisation, in Nasik relatively low productivity

but high utilisation, in Yeotmal, comparatively low productivity and low utilisation, in Wardha, relatively low productivity and 'average'¹ utilisation, and in Aurangabad and Bhira, low productivity but high utilisation.

If we merge the 'Mostly High' category into 'High' and the 'Mostly Low' into 'Low', the following districts appear in the same category in the two Tables 10.2 and 10.4: (i) High : Thana, Kolaba, Jalgaon, Ahmednagar, Sangli, Kolhapur, Akola, Amravati and Bhandara, and (ii) Low : Dhulia, Nasik, Sholapur, Aurangabad, Parbhani; Nanded, Bhira, Osmanabad, Yeotmal and Wardha. Among the remaining six districts (leaving out Bombay Suburban), Ratnagiri, Chanda and Nagpur moved from 'low' to 'high' category in Table 10.4. Poona, Satara and Buldhana moved the other way. By comparing the relative geographical size of the respective districts with the relative gross cropped area it is seen that in the first three districts the proportion of geographical area under crops was lower than the average for Maharashtra while in Poona, Satara and Buldhana it was higher. Since income-area ratio (on which table 10.4 is based) is a less indirect measure of agricultural productivity we may, in the present context, interpret productivity in terms of Table 10.4, and probably

¹ Average utilisation would mean that the proportion of geographical area under crops in the respective district was almost the same as the average proportion for Maharashtra.

say that in Ratnagiri, Chanda and Nagpur low utilisation was accompanied by high productivity, whereas in the remaining three districts high utilisation and low productivity went together. One last point worth-noting that emerges from an analysis of the tables is that in all Konkan districts utilisation was relatively low but productivity high while in all Marathwada districts utilisation was high but productivity low.

A more direct income-measure of agricultural productivity based upon land-income relationship is income per acre under crops. In the context of this study this would mean gross income from agriculture per acre. The data on gross income per acre in the districts in the years, 1951-52 to 1958-59 are presented in Table 10.5.

A few facts relating to districts-groups which emerge from the table may be noted. Konkan had the highest income per acre in all the eight years. Marathwada, on the other hand, had the lowest throughout except in 1952-53 when Deccan ranked at the bottom. All the same even in this year the per acre income in Marathwada, viz., Rs. 67.94 was only slightly higher than that in Deccan which was Rs. 65.83. Then again, the income per acre in Konkan every year was more than twice that in the districts-group occupying the lowest rank, i.e., for

TABLE 10.5 : GROSS INCOME FROM AGRICULTURE PER ACRE CULTIVATED
(AT CURRENT PRICES)

(Rupees and Paise)

Districts	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Thana	146.27	207.37	233.36	167.66	199.86	198.78	255.63	294.34
Bombay Suburban	161.80	230.87	248.29	166.50	223.83	260.77	305.82	330.23
Kolaba	188.52	229.34	248.83	168.20	222.26	213.67	231.50	285.57
Ratnagiri	132.25	152.15	155.12	137.65	148.04	169.85	159.84	193.95
<u>KONKAN</u>	<u>151.26</u>	<u>190.64</u>	<u>204.96</u>	<u>155.69</u>	<u>184.35</u>	<u>191.34</u>	<u>211.21</u>	<u>251.63</u>
Dhulia	43.64	55.71	103.70	64.98	71.55	112.78	122.68	121.86
Jalgaon	101.37	55.88	125.75	103.36	87.72	144.69	168.83	139.98
Nasik	75.27	58.83	96.11	73.40	78.94	113.35	108.27	133.37
Ahmednagar	83.66	50.06	74.43	63.97	86.28	92.66	115.46	137.00
Poona	81.51	64.24	66.84	61.85	73.87	107.64	125.21	129.08
Sholapur	55.50	42.87	66.94	60.66	61.28	69.18	95.08	99.25
Satara	88.86	83.51	85.10	71.78	78.32	108.01	116.31	123.30
Sangli	88.86	80.42	96.91	89.55	84.56	119.02	132.33	159.86
Kolhapur	197.64	186.80	182.93	184.34	204.15	258.56	242.13	268.63
<u>DECCAN</u>	<u>83.07</u>	<u>65.83</u>	<u>91.23</u>	<u>77.65</u>	<u>84.05</u>	<u>113.19</u>	<u>127.21</u>	<u>136.14</u>
Aurangabad	63.89	52.52	75.63	51.80	58.50	72.46	76.63	86.89
Parbhani	73.02	74.89	75.79	59.96	59.04	108.22	91.96	100.55
Nanded	86.75	87.46	64.52	72.90	52.82	99.38	93.91	110.88
Bhir	64.36	57.68	77.84	61.89	59.00	72.19	82.73	88.16
Osmanabad	78.72	72.73	72.22	71.05	54.54	79.40	78.94	105.63
<u>MARATHWADA</u>	<u>72.56</u>	<u>67.94</u>	<u>73.52</u>	<u>62.44</u>	<u>56.98</u>	<u>85.03</u>	<u>83.69</u>	<u>97.30</u>
Buldhana	122.19	78.25	93.44	86.26	78.47	113.47	110.86	100.85
Akola	143.35	94.44	110.39	94.28	94.13	131.97	101.98	114.69
Amravati	151.76	98.96	120.99	81.35	87.26	137.97	102.26	128.78
Yeotmal	144.91	137.51	101.33	88.38	63.80	130.31	102.99	105.57
Wardha	136.04	93.00	91.67	68.02	65.42	113.89	84.40	109.48
Nagpur	120.57	119.19	123.33	77.74	90.05	114.42	92.16	123.94
Bhandara	112.62	125.98	108.24	98.93	141.57	129.24	129.24	189.65
Chanda	102.65	120.58	95.32	82.85	97.45	122.52	103.72	130.21
<u>VIDARBHA</u>	<u>130.75</u>	<u>108.10</u>	<u>105.85</u>	<u>85.57</u>	<u>88.89</u>	<u>125.12</u>	<u>103.74</u>	<u>123.38</u>
<u>MAHARASHTRA</u>	<u>96.46</u>	<u>83.61</u>	<u>95.91</u>	<u>79.33</u>	<u>82.86</u>	<u>112.60</u>	<u>113.75</u>	<u>128.13</u>

most part, Marathwada. This would indicate a wide degree of diversity among the districts-groups as regards agricultural productivity.

The gross income per acre in Vidarbha was next to that in Konkan in years 1951-52 to 1956-57, whereas in 1957-58 and 1958-59, Deccan ranked second. Moreover, it is seen that in all years except in 1951-52 the difference between income per acre in Konkan and that in the districts-group ranking second was much wider than the difference between the latter and income per acre in the districts-group ranking last. In fact in three or four years the former difference was almost thrice the latter difference. One gains the impression that in point of generation of agricultural income Konkan represented something of an isolated phenomenon among Maharashtra districts-groups, the remaining three districts-groups being relatively closer to one another.

It is clear that the income per acre of Maharashtra as a whole is indicative of an average performance in the agricultural sector which may be regarded as a 'norm' with reference to which the relative position of the respective districts-groups is judged. In all the eight years income per acre in Konkan was higher than that in Maharashtra. The other districts-groups with income per acre above the Maharashtra average were as follows :-

(i) 1951-52 to 1954-55 : Vidarbha, (ii) 1955-56 and 1956-57 : Vidarbha and Deccan, and (iii) 1957-58 and 1958-59: Deccan. This means that income per acre in Marathwada was less than that in Maharashtra for all the eight years, that in Deccan was so in the first four years and in Vidarbha, in the last two years.

Moreover the income per acre in Konkan all throughout was between 1 1/2 to 2 times (i.e. 150 to 200 percent of) that in Maharashtra but the corresponding amount in the districts-group ranking lowest -- mostly, Marathwada -- was between 70 and 75 percent of the Maharashtra average. It has already been noted that there was a sharp break between the income per acre in Konkan and that respectively in Vidarbha, Deccan and Marathwada. This probably means that the relative backwardness of Marathwada in respect of agricultural productivity was merely the lowest end-point of a graded backwardness of a large part of Maharashtra. The analysis above confirms the impression gained earlier that the land-income relationship was comparatively most favourable in Konkan and least so in Marathwada. Vidarbha and Deccan came in between, probably in that order.

It is useful to study the relative position of the different districts by comparing the income per acre of

the respective districts with that of Maharashtra as a whole. The districts with income per acre higher than that of Maharashtra will be treated as belonging to the 'high' category and the remaining ones to the 'low' category. Table 10.6 presents the relevant information for every year. Within each category also the districts are arranged in serial order according to the size of the income per acre.

It is seen that all the four Konkan districts were consistently in the 'high' category throughout the period. Then again, they were among the first five in that category in all years except 1951-52 and 1957-58 when one of them, viz. Ratnagiri, ranked somewhat lower. On the other hand, the five Marathwada districts were in the 'low' category in all years except 1952-53 when one of these districts, viz. Nanded, came under the 'high' category. Even here it is found that Nanded was the last in that category, and its income per acre of Rs. 87.46 was only slightly higher than that of Maharashtra which was Rs. 83.61. Moreover, in almost all the years three or more Marathwada districts figured among the last five in the 'low' category.

Among Deccan districts Kolhapur was in the 'high' category and Sholapur in the 'low' category in all the eight years. One also notes that whereas Kolhapur was among the first three districts in the 'high' category

in five of the eight years Sholapur was among the last three in the 'low' category in six years. In addition to Kolhapur two other districts on the 'high' side were Jalgaon and Sangli. Only in 1952-53 the income per acre in Jalgaon (Rs. 55.88) was less than -- in fact, significantly less than -- that in Maharashtra (Rs. 83.61). Sangli was in the 'low' category only in 1951-52 and 1952-53. However, against Maharashtra's income per acre of Rs. 96.46 and 83.61 respectively in 1951-52 and 1952-53, Sangli's was Rs. 88.86 and Rs. 80.42 respectively. Sangli thus was not much low down in the 'low' category.

Satara, Poona, Dhulia, Nasik and Ahmednagar can be described as districts on the 'low' side. Only in 1957-58 Satara was in the 'high' category but its income per acre (Rs. 116.31) was only slightly higher than Maharashtra's, viz. Rs. 113.75. Poona was in the 'high' category only in the two years, 1957-58 and 1958-59. In 1958-59 Poona's income per acre (Rs. 129.08) was hardly more than that of Maharashtra which was Rs. 128.13. Dhulia, Nasik and Ahmednagar were in the 'low' category in five of the eight years. In at least one of the remaining three years each district was only in a slightly better position than Maharashtra. The relevant amounts of income per acre were as follows : (1) 1953-54 : Maharashtra - Rs. 95.91, Nasik - Rs. 96.11; (2) 1956-57 : Maharashtra -

Rs. 112.60, Dhulia - Rs. 112.78; and (3) 1957-58 : Maharashtra - Rs. 113.75, Ahmednagar - Rs. 115.46. In conclusion we may say that except for Jalgaon, Sangli and Kolhapur, Deccan districts were, more or less, on the 'low' side.

In Vidarbha, Bhandara was in the 'high' category all throughout. Amravati, Akola, and Chanda were on the 'high' side. Amravati dropped into 'low' category only in 1957-58. Akola and Chanda were in the 'high' category in 6 out of 8 years. Again one finds that in 1953-54 the income per acre in Chanda, viz. Rs. 95.32 was only slightly less than that in Maharashtra, which was Rs. 95.91. Nagpur and Yeotmal are seen in the 'high' category for five out of eight years. In two of the three years when Nagpur dropped into 'low' category its income per acre was not much below that of Maharashtra, the relevant amounts being : 1954-55 : Maharashtra - Rs. 79.33, Nagpur - Rs. 77.74, and 1958-59 : Maharashtra - Rs. 128.13, Nagpur - Rs. 123.94. Nagpur can thus be regarded to be on the 'high' side. It is true that a similar consideration cannot be urged in favour of Yeotmal's inclusion in the 'high' category. All the same the fact that it was in the 'high' category for a majority number of years should be given due weight. Further, a scrutiny of its precise ranking in the two categories would suggest that

the district was better shown under the 'high' category. The remaining two districts of Vidarbha, viz., Buldhana and Wardha, were on the 'low' side. They were in the 'low' category in five of the eight years. Then again, in 1956-57 when they were in the 'high' category the income per acre in Buldhana and Wardha which was Rs. 113.47 and Rs. 113.89 respectively was only slightly higher than that in Maharashtra, viz. Rs. 112.60. In conclusion it may be said that in Vidarbha only two of the eight districts were on the 'low' side.

Table 10.7 shows a classification of Maharashtra districts into High and Low in the light of analysis made so far.

TABLE 10.7 : CLASSIFICATION OF DISTRICTS BY GROSS INCOME PER ACRE

High	Low
1. Thana	1. Dhulia
2. Bombay Suburban	2. Nasik
3. Kolaba	3. Ahmednagar
4. Ratnagiri	4. Poona
5. Jalgaon	5. Sholapur
6. Sangli	6. Satara
7. Kolhapur	7. Aurangabad
8. Akola	8. Parbhani
9. Amravati	9. Nanded
10. Yeotmal	10. Bhir
11. Nagpur	11. Osmanabad
12. Bhandara	12. Buldhana
13. Chanda	13. Wardha

N.B. :- In this table the districts are not shown in order of the size of income per acre.

If the classification in Table 10.7 is compared with that in Table 10.4, assuming that in the latter table 'Mostly High' and 'Mostly Low' could be merged into 'High' and 'Low' respectively then the two tables exactly tally except for one discrepancy. This is so inspite of the fact that the income-area ratio used as the criterion for Table 10.4 was estimated only for the three years, 1951-52, 1955-56 and 1958-59. The discrepancy is that whereas in Table 10.4 Ahmednagar and Yeotmal appear in 'High' and 'Low' categories respectively, the categories are reversed in Table 10.7. It will be noted that in Table 10.4 Ahmednagar and Yeotmal were actually shown under the two nearby categories of 'Mostly High' and 'Mostly Low' respectively. Since the above table is based upon a more direct measure, i.e. gross income per acre, it would be proper to prefer this table to Table 10.4 in the case of discrepancy.

At this stage we may note three important facts. The first relates to the number of districts in the 'low' category every year. Table 10.8 gives the relevant information.

TABLE 10.8 : NUMBER OF DISTRICTS IN THE 'LOW' CATEGORY,
1951-52 TO 1958-59

1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
12	13	12	13	13	9	14	13

This means that in four out of eight years half the number of districts were in the 'low' category; in one year, more than half and in two years, slightly less than half were in that category. Only in 1956-57 the number of districts in this category was about 1/3rd of the total number of districts. Secondly, the districts in the 'low' category mostly included those which are relatively the bigger ones in Maharashtra both from the points of view of geographical size and proportion of area under crops. These are Nasik, Ahmednagar, Poona, Sholapur, Aurangabad, Parbhani, Bhir and Osmanabad.²

Thirdly, the difference between the highest income per acre in the districts in every year and that in Maharashtra was much larger than the gap between the latter and the lowest income per acre in the districts. Thus the highest income per acre was more -- in some years much more -- than twice the relevant amount for Maharashtra. On the other hand, the proportion of the lowest income per acre to that of Maharashtra year by year was as is shown in the following table.

2

The proportion of geographical area and the proportion of gross cropped area in the different districts may be read off from Tables 10.1 and 10.3 respectively.

TABLE 10.9 : PROPORTION OF THE LOWEST INCOME PER ACRE
IN THE DISTRICTS TO THAT OF MAHARASHTRA,
1951-52 TO 1958-59

(Percentages)

1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
45.2	51.3	67.3	65.3	63.7	61.4	67.4	67.8

Thus whereas the highest income per acre was more than 100 percent higher than Maharashtra's the lowest was, for most part, only between 30 and 35 percent lower.

It may further be noted that extremely high income per acre by the Maharashtra 'norm' was not an isolated phenomenon limited only to one district. In order to bring this fact into relief we calculate for every year income per acre higher than Maharashtra's by the same percentage as that by which the lowest was lower. This is the 'equi-distant' income per acre on the 'higher' side. The number of districts with income per acre more than this every year is shown in the table below.

TABLE 10.10 : NUMBER OF DISTRICTS WITH 'EXTREMELY HIGH'
INCOME PER ACRE, 1951-52 TO 1958-59

1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
3	7	5	5	6	5	6	6

(N.R.: - Bombay Suburban district is included)

This implies that though five to seven districts had relatively speaking, extremely high income per acre, the average for the whole of Maharashtra gravitated markedly to the lowest income per acre. The three facts cited thus far would suggest that the performance within the agricultural sector over a large part of Maharashtra was compatible more with the performance at comparatively very low levels than with that at relatively very high levels. If the performance at very low levels within Maharashtra are to be treated, on the basis of external criteria, as a sign of agricultural backwardness then the conclusion that seems to follow is that a large part of Maharashtra was backward in point of agricultural productivity.

One fact that Table 10.5 appears to bear out is that the income per acre in the districts fell from the highest value to the lowest with discontinuous jumps in between. It is as if some values clustered together at the top, some in the middle and some at the bottom though, in the light of the preceding analysis, we may say that the clusters in the middle leaned more towards those at the bottom than those at the top. In any case it seems more instructive to classify districts into 'high', 'medium' and 'low' categories than into just 'high' and 'low'.

An attempt is now being made to derive the threefold

classification by taking account of the fact that the income per acre of Maharashtra is merely a kind of an average of income per acre in the districts. This would suggest that the 'medium' category of performance may be defined as that relating to incomes per acre clustering around the Maharashtra average, on both sides, high as well as low. Once the end-points (in terms of income per acre) at the top and the bottom of the medium range are determined the 'high' and the 'low' categories could be easily demarcated.

The method we shall employ to fix the two limits of the medium range is as follows. For every year we take the highest income per acre among the districts, that of Maharashtra and the lowest one. Let us designate these as a, b and c respectively. The range between the highest income per acre and the Maharashtra average was (a-b), and that between the latter and the lowest one, (b-c). We shall assume that the medium range stretched on the 'high' side of Maharashtra income per acre to the extent of $\frac{1}{3}$ (a-b) and on the 'low' side to the extent of $\frac{1}{3}$ (b-c). To illustrate, in 1951-52 the highest income per acre (i.e., a) was Rs. 197.64, the Maharashtra average (i.e., b), Rs. 96.46 and the lowest (i.e., c), Rs. 43.64. The range (a-b) was Rs. 101.18. As one-third of this is Rs. 33.73 the higher end-point of the medium range would be :

96.46 + 33.73, i.e. Rs. 130.19. Similarly the range (b-c) was Rs. 52.82. One-third of this being Rs. 17.61, the lower end-point of the medium range would be : 96.46 - 17.61, i.e. Rs. 78.85. We shall then say that in 1951-52 the 'high' category comprised incomes above Rs. 130.19 per acre and 'low', those below Rs. 78.85. Ranges of income per acre making up the 'high', 'medium' and 'low' categories calculated in the manner outlined above for every year are tabulated below:

TABLE 10.11 : RANGES OF INCOME - HIGH, MEDIUM AND LOW
(Rs. and Paise)

Year	Low	Medium	High
1951-52	Below 78.85	78.85 to 130.19	above 130.19
1952-53	Below 70.03	70.03 to 132.70	above 132.70
1953-54	Below 85.45	85.45 to 146.88	above 146.88
1954-55	Below 70.15	70.15 to 114.33	above 114.33
1955-56	Below 72.86	72.86 to 129.85	above 129.85
1956-57	Below 98.13	98.13 to 161.99	above 161.99
1957-58	Below 101.38	101.38 to 177.77	above 177.77
1958-59	Below 114.38	114.38 to 162.16	above 162.16

Using these ranges of income the districts are classified into 'high', 'medium' and 'low', the classification being set out in the table below. Within a category the

TABLE 10.12 : RANKING OF DISTRICTS INTO HIGH, MEDIUM AND LOW BY GROSS AGRICULTURAL INCOME PER ACRE

1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
<u>High</u>	<u>High</u>	<u>High</u>	<u>High</u>	<u>High</u>	<u>High</u>	<u>High</u>	<u>High</u>
1. Kolhapur	1. Bombay Sub-urban	1. Kolaba	1. Kolhapur	1. Bombay Suburban	1. Bombay Suburban	1. Bombay Suburban	1. Bombay Suburban
2. Kolaba	2. Kolaba	2. Bombay Suburban	2. Kolaba	2. Kolaba	2. Kolhapur	2. Thana	2. Thana
3. Bombay Suburban	3. Thana	3. Thana	3. Thana	3. Kolhapur	3. Kolaba	3. Kolhapur	3. Kolaba
4. Amravati	4. Kolhapur	4. Kolhapur	4. Bombay Suburban	4. Thana	4. Thana	4. Kolaba	4. Kolhapur
5. Thana	5. Ratnagiri	5. Ratnagiri	5. Ratnagiri	5. Ratnagiri	5. Ratnagiri		5. Ratnagiri
6. Yeotmal	6. Yeotmal			6. Bhandara			6. Bhandara
7. Akola							
8. Wardha							
9. Ratnagiri							
<hr/>							
<u>Medium</u>	<u>Medium</u>	<u>Medium</u>	<u>Medium</u>	<u>Medium</u>	<u>Medium</u>	<u>Medium</u>	<u>Medium</u>
1. Buldhana	1. Bhandara	1. Jalgaon	1. Jalgaon	1. Chanda	1. Jalgaon	1. Jalgaon	1. Sangli
2. Nagpur	2. Chanda	2. Nagpur	2. Bhandara	2. Akola	2. Amravati	2. Ratnagiri	2. Jalgaon
3. Bhandara	3. Nagpur	3. Amravati	3. Akola	3. Nagpur	3. Akola	3. Sangli	3. Ahmednagar
4. Chanda	4. Amravati	4. Akola	4. Sangli	4. Jalgaon	4. Yeotmal	4. Bhandara	4. Nasik
5. Jalgaon	5. Akola	5. Bhandara	5. Yeotmal	5. Amravati	5. Bhandara	5. Poona	5. Chanda
6. Satara	6. Wardha	6. Dhulia	6. Buldhana	6. Ahmednagar	6. Chanda	6. Dhulia	6. Poona
7. Sangli	7. Nanded	7. Yeotmal	7. Chanda	7. Sangli	7. Sangli	7. Satara	7. Amravati
8. Nanded	8. Satara	8. Sangli	8. Amravati	8. Nasik	8. Nagpur	8. Ahmednagar	8. Nagpur
9. Ahmednagar	9. Sangli	9. Nasik	9. Nagpur	9. Buldhana	9. Wardha	9. Buldhana	9. Satara
10. Poona	10. Buldhana	10. Chanda	10. Nasik	10. Satara	10. Buldhana	10. Nasik	10. Dhulia

Continued.

TABLE 10.12 : Concluded

1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
	11. Parbhani 12. Osmanabad	11. Buldhana 12. Wardha	11. Nanded 12. Satara 13. Osmanabad	11. Poona	11. Nasik 12. Dhulia 13. Parbhani 14. Satara 15. Poona 16. Nanded	11. Chanda 12. Yeotmal 12. Amravati 14. Akola	11. Akola
<hr/>							
<u>Low</u>	<u>Low</u>	<u>Low</u>	<u>Low</u>	<u>Low</u>	<u>Low</u>	<u>Low</u>	<u>Low</u>
1. Osmanabad	1. Poona	1. Satara	1. Wardha	1. Dhulia	1. Ahmednagar	1. Sholapur	1. Nanded
2. Nasik	2. Nasik	2. Bhir	2. Dhulia	2. Wardha	2. Osmanabad	2. Nanded	2. Wardha
3. Parbhani	3. Bhir	3. Parbhani	3. Ahmednagar	3. Yeotmal	3. Aurangabad	3. Nagpur	3. Osmanabad
4. Bhir	4. Jalgaon	4. Aurangabad	4. Bhir	4. Sholapur	4. Bhir	4. Parbhani	4. Yeotmal
5. Aurangabad	5. Dhulia	5. Ahmednagar	5. Poona	5. Parbhani	5. Sholapur	5. Wardha	5. Buldhana
6. Sholapur	6. Aurangabad	6. Osmanabad	6. Sholapur	6. Bhir		6. Bhir	6. Parbhani
7. Dhulia	7. Ahmednagar	7. Sholapur	7. Parbhani	7. Aurangabad		7. Osmanabad	7. Sholapur
	8. Sholapur	8. Poona	8. Aurangabad	8. Osmanabad		8. Aurangabad	8. Bhir
		9. Nanded		9. Nanded			9. Aurangabad

ranking is according to size of income per acre.

It is seen that the following districts were consistently in the respective category in which they are shown:

(1) High : Thana, Bombay Suburban, Kolaba and Kolhapur,
 (2) Medium : Sangli, and Chanda; and (3) Low : Sholapur, Aurangabad and Bhir. If we grant that inclusion of a district in a category for, say, 7 out of 8 years broadly indicates performance appropriate to that category then Ratnagiri would fall under the 'high' category, and Jalgaon, Satara, Buldhana, Akola, Amravati and Nagpur, under the 'medium' category.

Among the remaining districts Nasik and Bhandara were in the 'medium' category, and Parbhani and Osmanabad, in the 'low' category in six out of the eight years. Nasik was in the 'low' category in 1951-52 and 1952-53. However, in both the years it was fairly high up in that category. Nasik, therefore, may be included in the 'medium' category. Bhandara was in the 'high' category in the two years, 1955-56 and 1958-59, but it was the last district in the category in both the years. We shall include Bhandara also in the 'medium' category. Parbhani was in the 'medium' category in 1952-53 and 1956-57, and Osmanabad, in 1952-53 and 1954-55. Both the districts were, however, much low down in the category in the respective two years. One may, therefore, show these Marathwada districts under

the 'low' category.

That leaves six districts, viz., Dhulia, Ahmednagar, Poona, Nanded, Yeotmal and Wardha. None of these districts except Poona was in any one category for a majority number of years. As such the inclusion of these districts in one category or the other is likely to be somewhat more arbitrary. Poona was in the 'medium' category for five years and in the 'low' one for three years. It is felt that this would not warrant the inclusion of the district in the 'medium' category. In the case of these six districts we further examine the precise ranking in Table 10.12. For convenience of analysis each category may be divided into two parts, upper and lower, each part comprising half the number of districts in the parent category. We then have six sub-categories. The number of years for which each of the six districts came under the respective sub-categories is shown in the table that follows :

TABLE 10.13 : CLASSIFICATION OF SELECTED DISTRICTS

(Number of years)

Districts	High		Medium		Low	
	Upper	Lower	Upper	Lower	Upper	Lower
Dhulia	-	-	2	2	2	2
Ahmednagar	-	-	2	2	3	1
Poona	-	-	2	3	1	2
Nanded	-	-	-	4	2	2
Yeotmal	-	2	2	2	2	-
Wardha	-	1	1	2	3	1

One may infer from the table that all districts other than Yeotmal were on the 'low' side and hence are better included in the 'low' category. Yeotmal may be included in the 'medium' category.

The classification of Maharashtra districts into High, Medium and Low which may be made on the basis of eight-year data on income per acre is set out below :-

TABLE 10.14 : CLASSIFICATION OF MAHARASHTRA DISTRICTS INTO HIGH, MEDIUM AND LOW (1951-52 TO 1958-59)

High	Medium	Low
<u>Konkan</u>	<u>Deccan</u>	<u>Deccan</u>
1. Thana	1. Jalgaon	1. Dhulia
2. Bombay Suburban	2. Nasik	2. Ahmednagar
3. Kolaba	3. Satara	3. Poona
4. Ratnagiri	4. Sangli	4. Sholapur
<u>Deccan</u>	<u>Vidarbha</u>	<u>Vidarbha</u>
5. Kolhapur	5. Buldhana	5. Wardha
	6. Akola	
	7. Amravati	<u>Marathwada</u>
	8. Yeotmal	1. Aurangabad
	9. Nagpur	2. Parbhani
	10. Bhandara	3. Nanded
	11. Chanda	4. Bhir
		5. Osmanabad

N.B.: In this table the districts are not arranged serially according to the size of income per acre.

In brief, all Konkan districts were in the 'high' category

and all Marathwada districts in the 'low' one. Among Deccan districts other than Kolhapur (which was in the 'high' category) half the number was in the 'medium' category and the other half in the 'low' one. The 'low' category included all the relatively bigger-sized Deccan districts except Nasik. In Vidarbha all districts other than Wardha were in the 'medium' category, Wardha being in the 'low' one.

Thus far the districts have been ranked in relation to the income per acre of Maharashtra. It may be useful to consider the districts-groups separately in order to rank the districts within the respective group. In Konkan the income per acre in Kolaba and Bombay Suburban was above the average for the districts-group in all the eight years. This income for Thana was higher than the Konkan average in all years except 1951-52, when, however, the former was only slightly less than the latter. The income per acre in Ratnagiri was less than that in Konkan in all the eight years. It may, therefore, be said that within Konkan Thana, Bombay Suburban and Kolaba were in the 'high' category and Ratnagiri in the 'low' one.

In Deccan the income per acre in Sangli and Kolhapur was higher than the group average all throughout. In fact the income per acre in Kolhapur was more than twice that of Deccan in almost all the years. Jalgaon was above the

group average in seven of the eight years. Jalgaon, Sangli and Kolhapur can thus be regarded as constituting the 'high' category in Deccan. In all the eight years Poona and Sholapur were below the group average. Dhulia was so in seven years, and Nasik and Satara in six years. Though Ahmednagar's income per acre exceeded that of Deccan in three years, the difference was slight. The relevant amounts are as follows : (1) 1951-52 : Deccan - Rs. 83.07, Ahmednagar - Rs. 83.66; (2) 1955-56 : Deccan - Rs. 84.05, Ahmednagar - Rs. 86.28; and (3) 1958-59: Deccan - Rs. 136.14; Ahmednagar - Rs. 137.00. The six districts mentioned can thus be regarded as making up the 'low' category in Deccan.

Among Marathwada districts Aurangabad and Bhir are seen to be particularly backward in point of agricultural productivity. In six of the eight years income per acre respectively in these two districts was lower than the group average. On the other hand, the relevant income in Parbhani was higher than the Marathwada average in seven years, and it was so in Nanded for six years. We may say that Aurangabad and Bhir were in the 'low' category, and Parbhani and Nanded in the 'high' category in Marathwada. Finally, Osmanabad was in the 'high' category in four years and in the 'low' one in the remaining four years. In two years, viz., 1953-54 and 1955-56, when Osmanabad

was in the 'low' category, the difference between the Marathwada income per acre and that of the district was negligibly small. It may therefore seem proper to assume that Osmanabad belonged to the 'high' category within Marathwada, if it is to be included in one category or the other on the basis of gross income per acre.

In Vidarbha Bhandara was on the 'high' side with income per acre above the group average in seven of the eight years. In the same way Wardha was on the 'low' side since its income per acre was less than that of Vidarbha in the same number of years. Buldhana was in the same category as Wardha for six years of the period. Thus it seems possible to classify these three districts without much difficulty. Probably Akola which was in the 'high' category in five years and in the 'low' one in three could be described as 'high' since in 1957-58 its income per acre, viz., Rs. 101.98, was only little less than that of Vidarbha which was Rs. 103.74.

The position in respect of the remaining four districts of Vidarbha was more uncertain. In Amravati, Yeotmal and Nagpur the income per acre was above and below the group average in four years each. In Chanda it was below in five and above in three years; but in 1957-58 its income per acre of Rs. 103.72 was almost the same as

that of Vidarbha, viz., Rs. 103.74. Earlier while analysing the ranking of districts in relation to Maharashtra's income per acre an attempt was made to place the borderline cases in one category or the other by an examination of the precise rankings of the districts concerned. Probably the method had some justification in that context as only six districts were involved in a total of twenty-six. It does not seem proper to employ this method for ranking four districts within a districts-group consisting in all of eight districts. The only conclusion therefore is that nothing definite can be said about the respective agricultural productivity in these districts vis-a-vis that of Vidarbha when viewed over a period of eight years.

A final point about the district incomes in relation to income per acre of the respective districts-groups may be noted. It appears from Table 10.5 that the per acre incomes in Vidarbha and Marathwada districts clustered around the averages for the respective districts-groups more closely than was the case with Deccan. In other words, there was a greater degree of diversity within Deccan than Marathwada or Vidarbha. As regards Konkan the per acre incomes in Thana, Bombay Suburban and Kolaba appear to be fairly close to one another whereas that in Ratnagiri seems to diverge significantly from those of

the other three districts.

So far an attempt has been made to examine the inter-area diversities within Maharashtra in respect of gross income per acre under crops. It would be fruitful to supplement this analysis by studying the differentials with regard to income per acre respectively under certain major categories of crops. We consider a division of crops only into foodgrains and cashcrops. In this context the value of foodgrains would include the value not only of cereals and pulses but also of the byproducts such as straw from foodgrains and arhar sticks. Income per acre under foodgrains would mean this value divided by area under foodgrains. On the other hand, the value of cashcrops which would be taken into account for calculating income per acre is the aggregate value of sugarcane, condiments and spices, fruits and vegetables, fibres, oilseeds, drugs and narcotics as also of the relevant byproducts, viz., sugarcane tufts, bagasse, sesamum sticks, cotton sticks and cotton seed. It will be seen that the only categories that remain are : fodder crops, miscellaneous food and non-foodcrops and some of the byproducts. These together accounted for a small proportion of the total agricultural income in the districts. Thus a study of diversities with regard to income per acre respectively under foodgrains and cashcrops would be quite significant. Tables 10.15 and 10.16 present data on income per acre

TABLE 10.15 : GROSS INCOME PER ACRE OF FOODGRAINS (AT CURRENT PRICES)

(Rupees and Paise)

Districts	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Thana	177.80	257.04	279.67	214.30	222.09	247.83	328.23	383.67
Bombay Suburban	210.36	316.09	364.10	282.90	260.10	311.14	440.00	490.42
Kolaba	194.88	236.38	266.66	182.29	236.00	227.74	254.18	320.02
Ratnagiri	128.22	154.46	164.02	131.44	137.79	170.11	168.66	202.70
<u>KONKAN</u>	<u>163.26</u>	<u>210.93</u>	<u>231.03</u>	<u>172.72</u>	<u>192.50</u>	<u>211.41</u>	<u>245.47</u>	<u>295.53</u>
Dhulia	28.49	48.98	84.78	60.38	64.97	98.22	100.51	101.49
Jalgaon	77.13	35.90	104.68	84.39	75.15	128.16	131.79	116.77
Nasik	54.60	46.41	83.22	65.68	61.17	85.04	85.99	107.61
Ahmednagar	49.29	18.82	39.90	39.38	57.43	55.51	78.05	79.20
Poona	61.91	44.48	50.36	48.65	57.68	85.95	95.26	99.82
Sholapur	32.37	25.01	50.43	52.08	48.76	53.68	80.72	82.74
Satara	74.64	67.02	66.70	73.05	72.73	92.13	98.69	110.80
Sangli	65.08	66.11	83.87	80.23	75.61	107.48	121.67	152.58
Kolhapur	122.46	151.71	123.08	142.79	183.45	249.50	222.57	218.99
<u>DECCAN</u>	<u>55.82</u>	<u>44.24</u>	<u>67.38</u>	<u>61.99</u>	<u>66.58</u>	<u>88.15</u>	<u>99.56</u>	<u>105.91</u>
Aurangabad	44.60	44.57	64.45	36.30	43.29	59.88	68.58	80.40
Parbhani	56.86	72.56	67.01	43.81	51.77	110.34	88.90	97.78
Nanded	66.13	92.55	56.76	63.09	45.80	103.03	74.33	94.19
Bhir	49.83	51.20	62.69	47.12	42.57	65.99	76.13	79.69
Osmanabad	60.05	72.18	58.53	54.36	46.36	69.92	67.83	97.02
<u>MARATHWADA</u>	<u>52.93</u>	<u>64.51</u>	<u>62.05</u>	<u>47.30</u>	<u>45.80</u>	<u>78.54</u>	<u>74.39</u>	<u>89.02</u>
Buldhana	97.73	71.00	82.33	74.92	74.07	114.79	94.96	94.59
Akola	124.27	88.00	104.84	74.69	94.43	139.23	83.75	98.52
Amravati	140.43	102.94	135.31	82.03	92.57	128.88	91.95	115.61
Yeotmal	128.23	166.91	105.36	79.78	62.04	137.89	90.09	108.00
Wardha	170.58	112.38	115.99	77.91	77.84	119.31	77.07	122.27
Nagpur	109.60	111.37	124.63	73.98	77.51	98.62	63.90	106.15
Bhandara	105.02	122.22	108.05	100.20	144.18	132.45	127.36	199.65
Chanda	100.86	127.55	101.55	88.28	100.93	128.09	103.33	133.34
<u>VIDARBHA</u>	<u>118.58</u>	<u>114.13</u>	<u>108.62</u>	<u>82.16</u>	<u>92.20</u>	<u>125.42</u>	<u>93.16</u>	<u>124.10</u>
<u>MAHARASHTRA</u>	<u>75.85</u>	<u>74.49</u>	<u>83.88</u>	<u>68.59</u>	<u>73.71</u>	<u>100.62</u>	<u>98.84</u>	<u>115.12</u>

TABLE 10.16 : GROSS INCOME PER ACRE OF CASHCROPS (AT CURRENT PRICES)

(Rupees and Paise)

Districts	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Thana	383.04	401.17	341.33	247.58	491.81	494.96	472.39	519.90
Bombay Suburban	640.50	704.00	587.50	407.00	858.00	983.00	953.67	1006.33
Kolaba	420.18	445.40	383.27	302.93	458.67	582.87	538.36	593.07
Ratnagiri	409.72	408.92	402.20	470.02	605.16	504.52	527.12	619.09
KONKAN	<u>409.71</u>	<u>419.04</u>	<u>387.74</u>	<u>384.19</u>	<u>558.30</u>	<u>529.43</u>	<u>529.08</u>	<u>605.12</u>
Dhulia	78.82	74.12	159.65	73.93	85.82	144.69	171.85	165.91
Jalgaon	146.51	88.83	161.81	126.55	101.18	162.87	212.72	166.16
Nasik	225.90	166.83	250.53	138.05	193.98	280.00	249.95	303.29
Ahmednagar	327.31	267.94	345.56	230.78	257.08	314.04	355.02	515.22
Poona	348.98	262.54	298.79	251.83	310.69	381.24	489.67	492.00
Sholapur	229.39	153.19	180.54	117.29	132.62	152.45	185.46	201.24
Satara	293.66	253.77	330.21	171.06	212.68	312.03	356.28	348.89
Sangli	226.50	165.28	184.83	160.83	153.28	183.77	200.09	212.41
Kolhapur	496.97	381.03	457.36	408.31	384.34	421.25	423.02	542.42
DECCAN	<u>231.74</u>	<u>174.66</u>	<u>237.27</u>	<u>162.40</u>	<u>172.28</u>	<u>229.04</u>	<u>263.09</u>	<u>282.59</u>
Aurangabad	93.36	65.08	95.79	81.75	86.06	99.49	91.93	98.61
Parbhani	93.42	75.68	86.87	85.33	68.81	101.96	94.86	102.26
Nanded	111.47	77.74	73.77	85.77	61.68	91.05	122.54	137.22
Bhir	90.45	68.93	107.49	92.40	92.93	83.36	96.49	106.52
Osmanabad	113.41	70.54	99.82	101.63	68.70	96.79	99.05	122.19
MARATHWADA	<u>100.24</u>	<u>71.42</u>	<u>92.49</u>	<u>89.06</u>	<u>75.76</u>	<u>95.67</u>	<u>99.98</u>	<u>111.78</u>
Buldhana	151.64	85.42	105.51	98.77	82.12	110.84	127.70	106.48
Akola	164.86	100.24	115.23	136.82	93.95	123.70	119.93	130.35
Amravati	161.47	93.68	106.92	79.46	81.38	143.98	108.50	137.02
Yeotmal	164.26	97.00	92.13	95.55	63.25	118.14	114.94	99.66
Wardha	85.90	65.87	58.55	52.89	46.25	103.25	90.01	90.58
Nagpur	143.66	122.79	113.88	82.55	119.82	153.06	161.67	167.56
Bhandara	158.30	131.05	102.01	84.42	116.01	98.68	129.68	112.26
Chanda	91.70	78.69	61.44	54.12	73.33	90.46	93.76	105.23
VIDARBHA	<u>147.67</u>	<u>93.39</u>	<u>98.23</u>	<u>88.33</u>	<u>81.12</u>	<u>121.61</u>	<u>116.81</u>	<u>119.04</u>
MAHARASHTRA	<u>157.02</u>	<u>110.80</u>	<u>134.87</u>	<u>112.37</u>	<u>110.10</u>	<u>149.30</u>	<u>158.85</u>	<u>170.10</u>

under the two respective categories of crops district by district.

It is found that income per acre under cashcrops was higher than that per acre under foodgrains in every year in Konkan, Deccan and Marathwada but not in Vidarbha. In Vidarbha in five out of eight years it was the latter category of income which was higher. A further fact which may be noted is that relating to the proportion of the income per acre under foodgrains to that per acre under cashcrops. Yearwise data relating to districts-groups are presented below :-

TABLE 10.17 : PROPORTION OF INCOME PER ACRE UNDER FOOD-GRAINS TO THAT PER ACRE UNDER CASHCROPS

(percentages)

Districts-group	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Konkan	39.8	50.3	59.6	44.9	34.5	39.9	46.4	48.8
Deccan	24.1	25.3	28.4	38.2	38.6	38.5	37.8	37.5
Marathwada	52.8	90.3	67.1	53.1	60.5	82.1	74.4	79.6
Vidarbha	80.3	122.2	110.6	93.0	113.7	103.1	79.7	104.2
Maharashtra	48.3	67.2	62.2	61.0	66.9	67.4	62.2	67.7

The proportion was the largest in Vidarbha and next to

that in Marathwada in all the eight years. Konkan ranked third and Deccan fourth in this respect except in 1955-56 when the ranks were reversed. In sum, one could say that the gap between the income per acre under cashcrops and that per acre under foodgrains was proportionately largest in Deccan, somewhat less so in Konkan, still less in Marathwada and least in Vidarbha. In other words, relative to foodgrains the cash crops were most income-yielding in Deccan, and less so in Konkan, Marathwada and Vidarbha in that order. Further, it will be noted that the difference between the proportions in the respective districts-groups was quite marked which testifies to the great diversity in the relative importance of cashcrops in the districts-groups from the point of view of income-generation.

Moreover we may treat the relative significance of cashcrops in Maharashtra in Table 10.17 as a kind of 'norm'. It is then seen that the proportions in Deccan and Konkan were consistently lower than those for Maharashtra. The Vidarbha proportions were higher in all years. Those for Marathwada exceeded the proportions for Maharashtra in most of the years. This means that the importance of cashcrops relatively to foodgrains in respect of income-generation was greater in Deccan and Konkan than in Maharashtra. On the other hand, it was less in Vidarbha and Marathwada, in comparison with that

in Maharashtra.

When we consider the income per acre under foodgrains and that per acre under cashcrops separately we find that the ranking of the districts-groups is of a piece with the rankings set up earlier in different contexts. Income per acre of foodgrains was the highest in Konkan in all years. It was the lowest in Marathwada throughout except in 1952-53 when Deccan ranked lowest. Similarly Vidarbha ranked second in all years except 1957-58 when income per acre in Deccan was higher than that in Vidarbha. By and large this is a replica of the picture of ranking in respect of income per acre under crops. Then again, in all the years the income per acre of foodgrains in Konkan was higher than that in Maharashtra and that in Marathwada, lower. The relevant income per acre in Vidarbha was higher and that in Deccan lower than the Maharashtra average in all years except 1957-58.

One also notes that, for most part, the gap between income per acre of foodgrains in Konkan and that in the district-group ranked second was much larger than the gap between the latter and the corresponding income in the district-group ranked lowest. Thus the agricultural productivity in terms of foodgrains was relatively very much higher in Konkan than in other regions of Maharashtra. Another aspect of the same fact is that the relevant

income per acre in Konkan was between two to three times that in Maharashtra as a whole. It is further observed that the gap between the income per acre in the second-ranked districts-group and that in the third-ranked was also mostly larger than the one between the latter income and the income per acre in the lowest-ranked districts-group. Deccan and Marathwada were thus much closer to one another in this respect than either was to Konkan or Vidarbha. We do not find this so consistently in the case of income per acre under crops.

In respect of income per acre under cashcrops in all years except in 1954-55 the ranking of the districts-groups was in the following order : (1) Konkan, (2) Deccan, (3) Vidarbha and (4) Marathwada. The only change in 1954-55 was that Marathwada ranked third and Vidarbha last. Then again, the income per acre under cashcrops in Konkan and Deccan was above and that in Vidarbha and Marathwada below the corresponding income in Maharashtra in all the eight years. Thus one finds that the placement of Konkan and Marathwada is the same, whether the criterion used is income per acre under foodgrains or that per acre of cashcrops.

Moreover there is a wide gap separating income per acre under cashcrops in Konkan, the first-ranked districts-group and that in Deccan, the second-ranked. In fact

the relevant income per acre in Konkan was more than twice that of Deccan in most of the years. Similarly the margin between the income per acre of cashcrops in Deccan and that in the third-ranked districts-group was much greater than the margin between the latter income and the income per acre of cashcrops in the last-ranked districts-group. This means that we find in the case of income per acre under cashcrops also the two features noted in relation to income per acre of foodgrains, viz., (a) that income per acre in Konkan was, relatively speaking, something of an isolated phenomenon, and (b) that districts-groups ranked third and fourth were closer to one another than either was to the first or the second-ranked. It may look as if (b) is intriguing since it is observed separately in the case of income per acre under foodgrains and that per acre of cashcrops but not in the case of income per acre under crops. In respect of income per acre under crops the second-ranked and the third-ranked were closer to each other than the latter and the last-ranked in most of the years. The explanation probably is something like this. With regard to income per acre under cashcrops Deccan was second-ranked and Vidarbha third-ranked. The ranks by income per acre under foodgrains were reversed in most cases. The reversal of ranks would mean that the gaps

between income per acre of the two types in the second-ranked and the third-ranked districts-groups were not cumulative but mutually corrective. Hence in the case of income per acre under crops the districts-groups at the second and third ranks appeared closer.

When districts are considered separately it is seen that income per acre of cashcrops was consistently higher than that per acre of foodgrains in all Konkan and Deccan districts. The difference between the two types of income per acre was particularly large in Ratnagiri in Konkan, and in Ahmednagar and Poona in Deccan. Besides it was fairly large in Nasik, Sholapur, Satara, Sangli and Kolhapur. The same kind of relationship between the two types of income per acre obtained in Aurangabad and Bhir in all the years, and in the remaining three districts of Marathwada in most of the years. Further, generally speaking, in all Marathwada districts the difference between the two types of income was proportionately smaller than that in most of the Konkan and Deccan districts. When this is read with the fact already noted that Marathwada districts ranked in the 'low' category on the basis of income per acre under crops, one would expect that in respect of both income per acre under foodgrains and that per acre under cashcrops Marathwada districts would figure in the 'low' category only. This, as we shall see, is a fact.

In Vidarbha there were notable diversities among districts with regard to relationship between the two types of per acre income. In Buldhana and Nagpur the income per acre under cashcrops was higher than that per acre under foodgrains in seven of the eight years. On the other hand, the relationship between the two types of per acre income were just the opposite in Chanda in all the years and in Wardha in seven years. In the remaining four districts the relationship was one way for some years and the other way for the remaining years. Lastly, the gap between the two types of income per acre was proportionately less in Vidarbha districts than in most of the districts of the other three regions.

It would be instructive to categorise districts into 'high' and 'low' separately by the income per acre under foodgrains and that per acre under cashcrops assuming the Maharashtra income as a 'norm'. The classification based upon foodgrains income per acre is considered first. Table 10.18 gives the necessary classification. Within each category, 'high' or 'low', the districts are arranged according to the size of income per acre.

It will be seen that the districts with income per acre under foodgrains consistently above and below that of Maharashtra were as follows : (1) Above : Thana,

Bombay Suburban, Kolaba, Ratnagiri, Kolhapur, Bhandara and Chanda; (2) Below : Nasik, Ahmednagar, Poona, Sholapur, Aurangabad, Bhira and Osmanabad. We may include Jalgaon, Amravati, and Wardha in the 'high' category, and Satara and Parbhani in the 'low' category as these districts were in the respective categories in seven of the eight years.

That leaves only seven districts, viz., Dhulia, Sangli, Nanded, Buldhana, Akola, Yeotmal and Nagpur. Even among these the inclusion of Dhulia and Nanded in the 'low' category over the whole period is clearly indicated as they were in that category in six years and as in one of the remaining two years the relevant income per acre in each case was only slightly higher than that of Maharashtra. It must be admitted that there is a greater element of arbitrariness in the placement of the remaining five districts in one category or other. If we place a district in a category in which it appeared for a majority number of years (i.e. at least five out of eight), then Sangli, Akola, Yeotmal and Nagpur would come under 'high' category. It will also be noted that in years in which these districts appeared in the 'low' category they were fairly high up in that category with the only exception of Nagpur in 1957-58. The one district that remains is Buldhana which was in one

category in four years and in the other in the remaining four. A comparison of the income per acre under foodgrains in Buldhana every year with that in Maharashtra shows that when Buldhana was on the 'low' side its income, for most part, was only slightly less than that of Maharashtra. We shall therefore show Buldhana under the 'high' category. Table 10.19 gives categorisation of districts into 'high' and 'low' for the whole period.

TABLE 10.19 : CLASSIFICATION OF DISTRICTS BY GROSS INCOME PER ACRE UNDER FOODGRAINS

High	Low
1. Thana	1. Dhulia
2. Bombay Suburban	2. Nasik
3. Kolaba	3. Ahmednagar
4. Ratnagiri	4. Poona
5. Jalgaon	5. Sholapur
6. Sangli	6. Satara
7. Kolhapur	7. Aurangabad
8. Buldhana	8. Parbhani
9. Akola	9. Nanded
10. Amravati	10. Bhir
11. Yeotmal	11. Osmanabad
12. Wardha	
13. Nagpur	
14. Bhandara	
15. Chanda	

N.B.:— In this table the districts are not arranged serially according to the size of the income per acre under foodgrains.

The classification of districts into 'high' and 'low' on the basis of income per acre under cashcrops is shown in Table 10.20.

The picture with regard to income per acre under cashcrops appears to be much more simple. Out of the 26 Maharashtra districts 19 were consistently in either of the two categories. Categorywise these were :

(1) High: Thana, Bombay Suburban, Kolaba, Ratnagiri, Nasik, Ahmednagar, Poona, Sholapur, Satara, Sangli and Kolhapur; and (2) Low: Aurangabad, Parbhani, Nanded, Bhira, Osmanabad, Buldhana, Wardha and Chanda. In other words, all the Konkan districts, and Deccan districts other than Dhulia and Jalgaon, were in the 'high' category in all the eight years. On the other hand, all the Marathwada districts and three districts of Vidarbha were in the 'low' category throughout.

Of the remaining seven districts Amravati and Yeotmal were in the 'low' category in seven of the eight years. These could therefore be shown in that category. Probably Akola and Dhulia could be placed in the same category as they appeared there for six of the eight years. The placement of only three districts is somewhat arbitrary. Even then Bhandara was in the 'low' category for a majority number of years, and hence could be shown in

that category. Jalgaon and Nagpur were in the two categories in four years each. In the case of Nagpur the proportionate difference between the Maharashtra income per acre and that of the district is observed to be of a smaller order on the 'high' side than on the 'low' side. Nagpur is therefore shown under the 'low' category. Jalgaon cannot be easily categorised even on the basis of this consideration. All the same the proportionate difference on the 'high' side has a slight edge over that on the 'low' side. As such Jalgaon is included in the 'high' category. Table 10.21 gives the relevant classification for the whole period.

TABLE 10.21 : CLASSIFICATION OF DISTRICTS BY GROSS INCOME PER ACRE UNDER CASHCROPS

High	Low
1. Thana	1. Dhulia
2. Bombay Suburban	2. Buldhana
3. Kolaba	3. Akola
4. Ratnagiri	4. Amraoti
5. Jalgaon	5. Yeotmal
6. Nasik	6. Wardha
7. Ahmednagar	7. Nagpur
8. Poona	8. Bhandara
9. Sholapur	9. Chanda
10. Satara	10. Aurangabad
11. Sangli	11. Parbhani
12. Kolhapur	12. Nanded
	13. Bhir
	14. Osmanabad

N.B.:— In this table the districts are not shown in order of the size of the income per acre under cashcrops.

In the end it would be instructive to make a comparison between the classification in the three tables, 10.7, 10.19 and 10.21. If we compare Table 10.19 with Table 10.7, we find that classification in both almost exactly tallies except that Buldhana and Wardha were in the 'low' category on the basis of income per acre under crops (i.e. Table 10.7) but in the 'high' category by income per acre of foodgrains (i.e. Table 10.19). On the other hand, the classification by income per acre under cashcrops in Table 10.21 is seen to be significantly divergent from that in Table 10.7. Eleven districts (five of Deccan and six of Vidarbha) have changed their categories in the two tables. In the five Deccan districts (viz., Nasik, Ahmednagar, Poona, Sholapur and Satara) income per acre of cashcrops was higher and income per acre under foodgrains was lower than the corresponding income per acre in Maharashtra for all the eight years.³ In other words, the cashcrops, relative to foodgrains, were more income-yielding in these districts than in Maharashtra as a whole. Still in point of income per acre under crops these Deccan districts figured in the 'low' category. This means that the relatively low level

³ In Satara, however, income per acre under foodgrains was lower than that in Maharashtra in seven of the eight years.

of income per acre of foodgrains in these Deccan districts proved more decisive in determining their category in respect of the income per acre under crops.

The six Vidarbha districts, viz., Akola, Amravati, Yeotmal, Nagpur, Bhandara and Chanda, were in the 'high' category by income per acre under foodgrains but in the 'low' category by that per acre under cashcrops. In the aggregate they were in the 'high' category on the basis of income per acre under crops. If a district which was in a given category on the basis of income per acre under crops was in the same category by income per acre under, say, foodgrains (cashcrops) and in a different category by income per acre under cashcrops (foodgrains) one may be permitted to say broadly that it was income per acre of foodgrains (cashcrops) which was more decisive in determining the ultimate category of the district. Cases of this type are unambiguous. When, however, the district was in the same category, whatever income per acre was considered, one could not say merely on the basis of per acre income data as to whether income per acre of foodgrains or cashcrops was the more decisive. The year-to-year categorisation of the six Vidarbha districts separately on the basis of the three types of income per acre is tabulated below:

TABLE 10.22 : CLASSIFICATION OF SIX VIDARBHA DISTRICTS
BY THREE INDICATORS OF INCOME PER ACRE

(Categories: High. and Low)

Districts	Indicator	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Akola	I	High	High	High	High	High	High	Low	Low
	II	High	High	High	High	High	High	Low	Low
	III	High	Low	Low	High	Low	Low	Low	Low
Amravati	I	High	High	High	High	High	High	Low	High
	II	High	High	High	High	High	High	Low	High
	III	High	Low	Low	Low	Low	Low	Low	Low
Yeotmal	I	High	High	High	High	Low	High	Low	Low
	II	High	High	High	High	Low	High	Low	Low
	III	High	Low	Low	Low	Low	Low	Low	Low
Nagpur	I	High	High	High	Low	High	High	Low	Low
	II	High	High	High	High	High	Low	Low	Low
	III	Low	High	Low	Low	High	High	High	Low
Bhandara	I	High	High	High	High	High	High	High	High
	II	High	High	High	High	High	High	High	High
	III	High	High	Low	Low	High	Low	Low	Low
Chanda	I	High	High	Low	High	High	High	Low	High
	II	High	High	High	High	High	High	High	High
	III	Low	Low	Low	Low	Low	Low	Low	Low

N.B.

- (1) Indicator I : Income per acre under crops;
 " II : Income per acre under foodgrains;
 " III : Income per acre under cashcrops.

(2) Source of Data:

- (i) Classification by indicator I : Table 10.6;
 (ii) Classification by indicator II : Table 10.18; and
 (iii) Classification by indicator III : Table 10.20.

It will be seen that cases in which a district came in the same category by all the three indicators are relatively few. There are six districts and a comparison between indicators is made for eight years for every district. This means that there are 48 cases of comparison. Of these in only 16 cases the category was the same by each of the three indicators. Districtwise the distribution of these cases was : Akola - 4; Amravati - 2; Yeotmal - 4; Nagpur - 3; Bhandara - 3; and Chanda - Nil.

Clearly the more interesting cases are the overwhelming majority of 32 cases. Among these in only 4 cases we find that the category of a district on the basis of income per acre of crops was the same as that by income per acre under cashcrops. This occurred only in the case of two districts, viz., Nagpur in 1954-55 and 1956-57, and Chanda in 1953-54 and 1957-58. In the remaining 28 cases the category based upon income per acre under crops was the same as that by income per acre under foodgrains and not that by cashcrops income per acre. One may say that in over 85 percent of the unambiguous cases it was the income per acre of foodgrains which was decisive in determining the ultimate category of a district. The conclusion seems to be that in the case of the eleven districts of Deccan and Vidarbha which came under different categories in Tables 10.7 and 10.21 the foodgrains income

per acre is seen to be crucial on the basis of a closer analysis.

A final point that needs to be made is that in all the three tables the four Konkan districts of Thana, Bombay Suburban, Kolaba and Ratnagiri are in the 'high' category and the five Marathwada districts of Aurangabad, Parbhani, Nanded, Bhir and Osmanabad, in the 'low' category. The inference is that land-income relationship was consistently favourable in Konkan districts and relatively unfavourable in Marathwada districts in these eight years. It will be remembered that position did not turn out to be so favourable in Konkan districts on the basis of income-size ratio, though it was just the opposite with regard to income-area ratio. This was an expression of the fact that the proportion of geographical area under crops in Konkan was less than that in Maharashtra. Interestingly, Marathwada districts were found to be in the 'low' category both on the basis of income-size ratio and income-area ratio, and further in these districts the former ratio was higher than the latter. This means, as was pointed out earlier, that Marathwada districts with a relatively high proportion of geographical area under crops, trailed behind the rest of Maharashtra in point of agricultural productivity.

CHAPTER XI

AGRICULTURAL INCOME OF MAHARASHTRA - A REVIEW

An attempt has been made in this study to estimate the agricultural income of Maharashtra by districts and by crops over the period 1951-52 to 1958-59. It was pointed out in the Introduction that the main purpose of this study is two-fold. Firstly, it is intended to analyse the sources of data which could be used for making district estimates of agricultural income of a fairly elaborate type so as to be able to comment on the possibility of error in the estimates. Secondly, the year-to-year income over a period of eight years is estimated with the objective of studying the structure of Maharashtra's agricultural income in terms of its distribution as between the 26 districts.

It was made clear at the outset that a study of Maharashtra's agricultural income is a regional-sectoral study. As such income is to be interpreted primarily as a composite measure of productivity. It cannot be easily used as an index of welfare in the sense of an indicator of the overall economic position of a conveniently identifiable group of persons. Even then it is true that particularly in a country like India income from

agriculture within a region may serve roughly as an index of welfare since agricultural income produced within a region would mostly accrue to residents only. This applies specially to large areas such as States in India. However, the welfare aspect of this income-measure has not received attention in the present study.

Two more points about the nature of the indicator employed here may be made. In the first place, it is the gross, and not the net, concept which is kept in view. The reason is that the breakdown of most of the deductible costs by districts and by crops presents a serious difficulty. Hardly any data on these items are available at the level of districts. Some of the important costs are overhead items that do not lend themselves to satisfactory allocation between the different crops. Even those data which may be used for the whole of Maharashtra are not available yearwise, and what is more, at least some of the data are even conjectural. In consequence even if the estimated costs for Maharashtra were to be distributed among the districts by means of, say, appropriate allocators, the results are not likely to be satisfying in an adequate degree. Then again, one may say that the objective of elucidating inter-district diversities is quite usefully served even by estimates of gross income.

Secondly, the estimates of agricultural income made are at current prices and not at constant prices. This means that changes in income from year to year do not reflect the rates of growth in agriculture in the districts. However, it is felt that the current prices estimates provide a reasonably instructive picture of the structure of Maharashtra's agricultural income. This is particularly so because there was a remarkable degree of constancy in the broad relative position of several districts over the period in question.

As a part of the actual estimation of agricultural income an analysis of the sources of data on area and outturn was made separately for (a) Konkan and Deccan, (b) Vidarbha, and (c) Marathwada. In this connection the available data were examined from the points of view of (i) coverage and (ii) reliability. The analysis has to answer two questions here: (1) which one of the alternative sources of data is the most suitable? and (2) how far is the most suitable source satisfactory?

In point of coverage our conclusion is that the Season and Crop Reports issued by State Governments are the most suitable for our purpose. Then again, the data on area and outturn in these Reports are quite elaborate. The relevant SCRs give data relating to Konkan, Deccan

and Vidarbha for all the eight years. The same cannot be said about data for Marathwada. Before the reorganisation of States in 1956 Marathwada was a part of Hyderabad State which did not issue any SCRs. It was the practice of the Hyderabad Government to publish in the Statistical Abstracts some of the data collected in the annual agricultural censuses. These are found to be unsatisfactory more on the count of reliability than coverage since even in the case of the 'selected' crops¹ SAs showed outturn estimated on the basis of the traditional annewari method and not crop-cutting surveys. Thus for data upto 1955-56 (inclusive) it is necessary to depend upon 'secondary' sources recently made available by the Government of Maharashtra. Data for the years 1956-57, 1957-58 and 1958-59 are taken from the SCRB.

It was observed in connection with the problem of reliability that the data in the different sources were based upon the same methods of estimation, and hence the main problem was not the one relating to comparison between the different sources of data but that regarding the degree of reliability in the best possible source. One aspect of the reliability of data on area and outturn

¹ It will be remembered that in Chapter III crops the outturn of which is estimated by crop-cutting surveys were designated as 'selected' crops. (See footnote 24, chapter III, p. 85).

which needs to be cited is that data for unsurveyed and/or 'non-reporting' areas are likely to be quite rough in nature. It seems, however, that the possibility of error in estimates on this account would be of a small order as the proportion of (a) unsurveyed area to the geographical area and (b) non-reported area to the gross cropped area during the period was probably not quite significant in Maharashtra districts in general. The proportion (b) was quite high only in Ratnagiri particularly in the earlier years. As was pointed out in Chapter III this would introduce a significant margin of error in estimates only if the average yield per acre on 'non-reported' area diverged substantially from that on 'reported' area.

Another probable problem that is posed for reliability of data relating to Konkan, Deccan and Vidarbha districts is that reporting of data in princely states (which were merged into Bombay and Madhya Pradesh States after Independence) was known to be much less satisfactory. However, it appears that after merger the two States took steps immediately to extend the appropriate reporting agency to these merged areas. It is quite likely that in any case since 1951-52, the initial year of our period, the data reported for the merged areas have been on par with those for the other parts of the respective States in respect of reliability.

As for the actual method of estimation the area statistics in all the districts of Maharashtra throughout the period were based upon the method of complete enumeration. There is reason to believe that this method yields more accurate results at the level of districts than even the method of random sampling. Outturn data in Maharashtra districts were based partly upon the traditional annewari method and partly on the method of crop-cutting surveys. In this connection the crops were classified into three categories, (a), (b), and (c). The first category consisted of crops which we designated as 'selected' or 'specified' crops in Chapter III. The crops, estimates of outturn of which were made by annewari method, made up the category (b). The last category was inclusive of all the remaining crops for which no outturn data were available. It was argued that though the relative proportion of area in a district under the respective categories was not a completely satisfactory index of reliability of income estimates it was likely to be instructive under certain conditions, particularly when one could have some idea about the broad probable relationship between the per acre values of the more important crops in the three categories.

If there is reason to believe that the proportion of income contributed by the 'selected' crops was sub-

stantially high then one may be permitted to infer that the income estimates are reliable in a large degree. Probably the proportionate contribution to agricultural income by the 'selected' crops would be high when two conditions are satisfied. These are : (1) that the proportion of gross cropped area under category (a) was substantially large, and (2) that of the remaining quite a small proportion of area was accounted for by crops not coming under category (a) and known to be yielding high income per acre, such as for example, fruits and vegetables, sugarcane, some of the condiments and spices, and so on. Considering further that estimates relating to crops under category (c) are likely to be much more rough in nature than those for crops under category (b), we may say that overall reliability of income estimates would be of a high order if a third condition is also fulfilled : (3) that the proportion of area under category (c) was quite small.

From the point of view outlined in the preceding paragraph the position in Vidarbha districts is seen to be the most satisfactory. In all districts except Bhandara and Chanda the proportion of area under (a) was as high as 80 percent. Even in Bhandara and Chanda the proportion was mostly around 70 percent. Then again, the proportion under (c) was negligibly small -- for most part, about 1

to 2 percent. Finally, in all districts other than Nagpur the relatively high-income-yielding crops (such as fruits and vegetables, chillies, sugarcane and tobacco) which were grown to some extent in these districts accounted for less than 2 percent of the gross cropped area. In Nagpur the relevant proportion was about 5 to 6 percent.

It appears that next to Vidarbha districts, the position was satisfactory in all Deccan districts except Kolhapur. The proportion of area under (a) was, more or less, 80 percent in Sholapur, Dhulia and Ahmednagar. In Jalgaon and Sangli it was in the vicinity of 75 percent. It ranged mostly between 65 and 70 percent in the districts of Nasik, Poona and Satara. Only in Kolhapur the proportion was relatively less, i.e. around 55 percent. Secondly, in all districts other than Kolhapur the area under the comparatively more lucrative crops such as sugarcane, condiments and spices, and fruits and vegetables which did not come under category (a) accounted for hardly 2 to 3 percent of the gross cropped area. The proportionate area under (c) was fairly large in some districts but it is seen that in most cases, a large part of this area was under the fodder crops, a category that presumably yielded very low income per acre. This would suggest that the proportion of area under category

(a) represented at least the floor to the percentage contribution of this category of crops to the value of agricultural output. Since the proportionate area under the category was quite large it seems reasonable to infer that, to a large extent, the estimates of income depend upon fairly reliable outturn data.

Apparently, Kolhapur does not seem to be on par with the other Deccan districts. The proportion of area under categories (a) and (c) was in the neighbourhood of 55 percent and 20 percent respectively. Then again, 7 to 8 percent of the gross cropped area was under sugarcane, condiments and spices, and fruits and vegetables. It was, however, pointed out in Chapter III that the value per acre of 'selected' crops as a group was likely to have been significantly higher in Kolhapur than in the other Deccan districts. The reason is that two of the relatively higher-income-yielding crops in this category, viz. paddy and tobacco, were comparatively more important in this district. Under the circumstances it was probable that the proportionate difference between the per acre values of the more lucrative crops on the one hand and of the 'selected' crops on the other was of a smaller order here than in other Deccan districts. In addition the relatively low-yielding crops not coming under category (a) such as fodder crops and cereals and pulses

other than rice, wheat, jowar, bajri and gram together accounted for about 40 percent of the gross cropped area in Kolhapur. One may infer that in this district the proportionate contribution of category (a) crops to the value of the agricultural output was presumably even higher than the proportion of area under this category, i.e. 55 percent. If that be so it would be proper to say that income estimates for Kolhapur district are largely reliable.

Konkan and Marathwada do not appear to have fared as well as Vidarbha and Deccan. The proportion of area under category (a) ranged between 50 and 55 percent in Thana and Ratnagiri. In Kolaba it was somewhat higher, i.e. over 60 percent. A significantly large proportion of area under crops was under category (c). However, the relatively lucrative crops with a composite per acre value probably 3 to 7 times that of the 'selected' crops in these districts, accounted for hardly 2 to 4 percent of the gross cropped area. Moreover about 40 percent of the area was under fodder crops and low-yielding cereals and pulses. The inference is that the proportion of area under 'selected' crops probably represented at least the minimum proportionate contribution of these crops to the agricultural income in Konkan districts. Since the proportion was not insubstantial one may con-

clude that income estimates for these districts are reliable in a reasonable degree.

The facts relating to Marathwada are a little less encouraging. It seems that over a large part of the period the proportion of area under category (a) varied between only 40 and 50 percent. However, the proportion relating to category (c), though not as small as in Vidarbha, was quite low as compared to that in Konkan and even several Deccan districts. Besides, the more remunerative variety in category (c), viz. fruits and vegetables, accounted for less than 0.5 percent of the gross cropped area in every Marathwada district. The income estimates for Marathwada districts may thus be presumed to be dependable in a useful degree.

A final problem that may arise in the present context is that relating to the probable difficulty in making comparison between the different districts-groups in view of the differing proportions under 'selected' crops in these regions. Presumably the difficulty is not serious. There is reason to believe that in most cases the proportionate contribution of 'selected' crops to agricultural income was fairly large so that the possibility of error in estimates for all districts would be limited in extent. Furthermore these estimates have been used for broad

categorisation in order to compare the relative positions of the respective districts over the whole period. Probably this type of comparison is not much vitiated by the likely magnitude of error in estimates.

The reliability of income estimates would be further affected by the fact that area and outturn data by districts have not been fully revised to allow for changes in district boundaries. It is, however, important to note that of the 26 districts of Maharashtra 17 were not affected at all by boundary readjustments. Among the remaining nine the adjustment between two districts, viz. Sangli and Satara, was absolutely minor in nature involving a transfer of a small village from one to the other. That leaves only seven districts. One of these is Bombay Suburban which was of little consequence from the point of view of agricultural income. Thus only six districts, viz. Thana, Dhulia, Kolhapur, Nanded, Osmanabad and Chanda were affected by border readjustments in a significant degree. Of the six districts the alteration in geographical size was substantially large only in the case of Osmanabad. Then again, the secondary sources have revised data on area and outturn of the principal crops in the earlier years for all these districts except Thana and Dhulia. The importance of the need for 'correction' of official data to allow for boundary

adjustments must not, therefore, be exaggerated. Lastly, wherever 'correction' of data appeared to be essential an attempt was made to take into consideration the probable cropping pattern in the areas 'gained' or 'lost' by the respective districts. It is felt that this method of 'correction' is satisfactory in an adequate degree.

Apart from the data on area and outturn one would require information on prices in order to be able to estimate the value of outturn of the different crops. For reasons explained in Chapter IX we opted in favour of farm harvest prices. Considering the availability of data on farm harvest prices it would be convenient to divide crops roughly into three types : (1) crops broadly covered by year-to-year data on farm harvest prices furnished by the official agencies; (2) crops not so covered but relating to which data on some kinds of prices are available enabling an investigator to deduce very roughly the relevant prices accruing to producers; and (3) crops, mostly residuary in character, for which prices data of hardly any kind are obtainable.

It will be noted that crops listed at (1) above include, besides those designated as 'selected' or category (a) crops in Chapter III, also a few of those des-

cribed as category (b) crops. From the data on relative proportions of gross cropped area respectively under categories (a), (b) and (c) provided in earlier chapters, it is possible to infer that crops mentioned at (1) above were the more important in Maharashtra districts accounting for the bulk of the gross cropped area. The broad conclusion that emerges is that in the case of the more important crops in the districts of Maharashtra the farm harvest prices used for estimation are those reported every year by primary agencies. Considering that the problem of averaging of quotations of centre prices at the district level is relatively simple and assuming that the data on centre prices compiled by the State agencies were adequately dependable, one may conclude that the prices data used to evaluate a substantially large part of the outturn of crops are fairly accurate.

On closer analysis, however, we find that the conclusion reached above requires to be modified to some extent. It was stated that crops listed at (1) above were broadly covered by primary data on farm harvest prices. There were, however, gaps in data on prices of crops. Methods used in order to fill in these gaps were explained in Chapter IX. Essentially the procedure consisted in deriving the price of a crop in a district in a year on the basis of prices in neighbouring districts or

regions employing either a method of simple averaging or that of projection. Prices arrived at in this way may be termed 'derived' prices as distinct from 'reported' prices which are published in official sources of data. Clearly derived prices would be less satisfactory than reported prices.

It is observed in this connection that the coverage for Deccan districts was the most satisfactory. The reported prices of the important crops in all years were available for all the districts with one exception. SCRB, 1957-58 did not report any farm harvest prices for Satara. All the prices of the relevant crops in Satara in 1957-58 used for evaluation are derived prices. In Konkan the three crops of major importance were rice (paddy), ragi and kodra. The reported prices of these crops in Konkan districts in most of the years are available.

It must be admitted that the coverage of data on reported prices was relatively less satisfactory for the districts of Vidarbha and Marathwada. The data relating to Vidarbha districts for the years, 1955-56 to 1958-59 were on an adequate scale. But the number of crops for which the reported prices were available in the first four years was quite small in most of the districts. The position in respect of Buldhana was particularly unsatis-

factory. No data on prices in this district in 1954-55 were reported. For 1953-54 the reported prices relate to only two crops, viz. wheat and jowar. The other Vidarbha districts were much better placed than Buldhana in this respect. At least a few of the important crops in these districts were covered by the data on prices.

With regard to Marathwada districts data for the last three years were quite satisfactory except in relation to Parbhani. Among the first five years data for 1955-56 were particularly inadequate. Thus we have information on farm harvest price only of maize in 1955-56 in Aurangabad and Bhir. No data on prices in this year were reported for Parbhani. Data pertaining to Osmanabad related only to four crops, viz. wheat, maize, gram and cotton. Only Nanded was relatively satisfactorily covered by prices data as information on prices of eight important crops in the year is obtainable. In comparison the data for the first four years appear to be somewhat more satisfactory. Among the districts Parbhani fared worst as no data on prices in this district in 1955-56, 1956-57 and 1957-58 were reported in official publications. On the whole a greater use of derived prices had to be made in the case of Vidarbha and Marathwada districts particularly for estimation of income in the earlier years. One feels, however, that this would not cause a substantial

margin of error in income estimates especially because there was not a wholly distressing lack of data on reported prices in these districts even in the earlier years.

It is true that the income from crops listed at (3) above had to be estimated by arriving at approximate per acre values. But an attempt was made to postulate a probable relationship between the per acre value of a major crop and that of the relevant residuary category by taking into account reported farm harvest prices, wherever available, of an important item in the residuary variety in Maharashtra districts. Thus, for example, the value per acre under 'other fibres' was estimated by assuming a ratio between the value per acre of kapas (seed-cotton) and that of ambadi -- a crop more important among the residuary fibres in several Maharashtra districts, particularly those of Marathwada. The SCRB data on prices of ambadi in a few districts were used in this context.

When income from agriculture in Maharashtra during 1951-52 to 1958-59 was estimated districtwise it became possible to highlight the structure of Maharashtra's agricultural income over the period in terms of the inter-district diversities. The agricultural income of a small area like a district has to be interpreted principally from the point of view of productivity. In the absence

of adequately satisfactory data on working force from year to year the best approximation to an index of productivity seems to be the land-income relationship. The less direct measures of this relationship are : (i) the income-size ratio, and (ii) the income-area ratio, the latter being less indirect than the former. Income-area ratio is more usefully treated as a productivity criterion, whereas the relationship between the two ratios may be presumed to indicate the level of utilisation of geographical area for agricultural purposes.

It is seen that in all Konkan districts utilisation was relatively low but productivity comparatively high. On the other hand, in the five Marathwada districts utilisation was high but productivity low in relation to the respective average standard for Maharashtra as a whole. Within Deccan and Vidarbha there were inter-district differences. Table 11.1 (next page) summarises the position for all the Maharashtra districts. It will be noted that for the level of productivity the table uses the classification in Table 10.4, the 'Mostly High' and the 'Mostly Low' categories in that table being merged with 'High' and 'Low' categories respectively.

Table 11.1 reveals that eleven districts were in the low-productivity - high-utilisation category whereas

TABLE 11.1 : UTILISATION AND PRODUCTIVITY IN MAHARASHTRA DISTRICTS

Productivity	Utilisation	
	High	Low
High	Jalgaon, Ahmednagar, Sangli, Akola	Thana, Bombay Sub-urban, Kolaba, Ratnagiri, Kolhapur, Amravati, Nagpur, Bhandara, Chanda.
Low	Nasik, Poona, Sholapur, Satara, Buldhana, Wardha (x), Aurangabad, Parbhani, Nanded, Bhira, Osmanabad	Dhulia, Yeotmal

(x) N.B. :- In Chapter IX, it was stated that utilisation in Wardha was 'average'. However, it was slightly on the 'high' side, and hence the district is shown here in the column for 'High Utilisation'.

nine others were in the high-productivity -- low-utilisation category. This suggests that in most of the Maharashtra districts utilisation and productivity were oppositely related, the two being in the same direction only in six districts. Further, all the Konkan districts were in one and the same category; the same can be said about the districts of Marathwada. Among Deccan districts three were in the high-productivity-high-utilisation category, four in the low-productivity-high-utilisation one, and one each in

the remaining two categories. As regards Vidarbha, one district was in the category mentioned first above, two in that mentioned second, four in the high-productivity-low-utilization category and one in the remaining category. There is thus a rough indication that by a composite criterion of utilization and productivity the inter-districts diversity was the least in Konkan and Marathwada but much more in Deccan and Vidarbha.

A more direct measure of productivity is the gross income per acre under crops. On the basis of this category of income per acre the ranking among the four districts-groups over the period on the whole was: Konkan, Vidarbha, Deccan and Marathwada, in that order. Further, in all years income per acre in Konkan was about 150 to 200 percent and that in the region at the lowest rank between 70 and 75 percent of the income per acre of Maharashtra. It thus appears that income per acre in Konkan was something of an isolated phenomenon among the four regions of Maharashtra. Furthermore the relative backwardness of Marathwada was the lowest end-point of a graded backwardness of a large part of Maharashtra.

The division of districts into 'high' and 'low' categories with reference to income per acre in Maharashtra turns out to be almost exactly the same as that based upon

income-area ratio though the latter classification is made with the help of data for three years 1951-52, 1955-56 and 1958-59. The only discrepancy is that whereas Ahmednagar is a 'high' and Yeotmal, a 'low' district by income-area ratio the respective categories are reversed when income per acre is considered. Since income-area ratio was calculated only for three years it seems proper to categorise Ahmednagar as 'low' and Yeotmal as 'high' from the standpoint of productivity. If that be so in Table 11.1 Ahmednagar would be transferred to the low-productivity-high-utilisation category and Yeotmal to the high-productivity-low-utilisation category. In other words, two more districts are added to the initial list of twenty districts in which utilisation and productivity were oppositely related over the period in question. In only four districts, viz. Dhulia, Jalgaon, Sangli and Akola, the two were in the same direction.

The districts could be more elaborately classified into 'high', 'medium' and 'low'. The categorisation of the four Konkan districts and Kolhapur as 'high' is not changed thereby. Similarly the five Marathwada districts, four districts of Deccan (viz. Dhulia, Ahmednagar, Poona and Sholapur), and Wardha in Vidarbha remain in the 'low' category only. The 'medium' category would consist of the remaining eleven districts -- four of Deccan and seven

of Vidarbha. Thus almost the whole of Vidarbha would come under the 'medium' category. The division of the nine Deccan districts is as follows : (1) High: one; (2) Medium : four; and (3) Low : four. This indicates that in point of productivity, there was greater diversity between the districts of Deccan than between those of any other region over the period 1951-52 to 1958-59. This impression is confirmed when we study income per acre in the districts within a region with reference to that in the relevant region.

A few additional facts may also be noted. The relatively bigger-sized districts in Maharashtra were mostly on the 'low' side. It is also found that income per acre in Maharashtra as a whole gravitated more towards the income per acre on the lower side than that on the higher side. In other words, the performance within the agricultural sector over a large part of Maharashtra was compatible more with performance at comparatively very low levels than that at relatively very high levels.

Finally, a regionwise study of income per acre in districts yields a few definite conclusions. Within Konkan, Ratnagiri was in the 'low' category and Kolaba and Bombay Suburban in the 'high' one in all the eight years. Thana was mostly in the 'high' category. In relation

to the average income per acre in Deccan, Jalgaon, Sangli and Kolhapur could be definitely classified as 'high', and Dhulia, Nasik, Poona, Sholapur and Satara, as 'low'. Probably Ahmednagar was on the 'low' side. In Marathwada, Parbhani and Nanded seemed to be the 'high' districts whereas Aurangabad and Bhir, the 'low' ones. The classification of Osmanabad is somewhat difficult though in all probability it was on the 'high' side. Lastly, with reference to Vidarbha income per acre, Bhandara was clearly on the 'high' side, and Buldhana and Wardha on the 'low' side. Probably Akola could be classified as 'high'. It is much more difficult to classify the remaining four districts of Vidarbha.

It is also instructive to consider separately the income per acre under foodgrains and that per acre of cashcrops. For most part the cashcrops were more income-yielding in the districts of Konkan, Deccan and Marathwada. Within Vidarbha the same relationship between the two types of income per acre mostly existed in Buldhana and Nagpur. On the other hand, in Wardha and Chanda the foodgrains were most lucrative. In the remaining four districts the relationship was one way for some years and the other way for the remaining years.

When we classify districts into 'high' and 'low'

in relation to Maharashtra average separately by income per acre under foodgrains and that per acre under cash-crops we find that the placement of the districts of Konkan and Marathwada turns out to be the same by both the types of per acre income as that by income per acre under crops. The same cannot be said about the districts of Deccan and Vidarbha. On the basis of income per acre under foodgrains all the Vidarbha districts figure in the 'high' category and Deccan districts other than Jalgaon, Sangli and Kolhapur in the 'low' one. On the other hand, all the Deccan districts, with the exception of Dhulia appear in the 'high' category by income per acre under cashcrops whereas the eight Vidarbha districts come under the 'low' category. There seems to be substance in the argument that in the case of districts which respectively figure in separate categories by the two types of income per acre (viz., that of foodgrains and of cashcrops), it was the income per acre of foodgrains which was more decisive in determining the ultimate category of each of these districts on the basis of the income per acre under crops.

APPENDIX I

GLOSSARY OF ABBREVIATIONS

ASI	'Agricultural Situation in India' (monthly), (Economic and Statistical Adviser, Ministry of Food and Agriculture, Government of India).
BCAS	Basic and Current Agricultural Statistics of Maharashtra State (Department of Agriculture, Government of Maharashtra) (1964).
BESB	Bureau of Economics and Statistics, Government of Bombay.
BESM	Bureau of Economics and Statistics, Government of Maharashtra.
CMI	Census of Indian Manufactures (annual).
C.S.O.	Central Statistical Organisation, Government of India.
DESAg	Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India.
DSA	Socio-economic Review and District Statistical Abstract (for the different districts of Maha- rashtra issued by the BESM).

- DSH Districtwise Statistics pertaining to Telangana, Marathwada and Karnataka regions of Hyderabad State, 1954-55 (issued by Bureau of Economics and Statistics, Finance Department, Government of Hyderabad).
- EMh Estimates of Area, Average Yield and Production of Principal Crops of Maharashtra State (Department of Agriculture, Government of Maharashtra) (1961).
- 'Estimates' Estimates of Area and Production of Principal Crops in India (annual) (DESAg).
- FHPPC Farm (Harvest) Prices of Principal Crops, 1947-48 to 1954-55 (DESAg) (1957).
- GIPE Gokhale Institute of Politics and Economics, Poona.
- IAS Indian Agricultural Statistics (annual) (DESAg).
- ICAR Imperial Council of Agricultural Research.
- ICCC Indian Central Cotton Committee (Bombay).
- MhG Maharashtra and Gujarat Agricultural Statistics (DESAg) (1963).
- MR Marketing Reports (issued separately for the

different commodities by the Directorate of Marketing and Inspection, Ministry of Food and Agriculture, Government of India.)

NCAER	National Council of Applied Economic Research (New Delhi).
NIC	National Income Committee.
NIS	National Income Statistics - Proposals for a revised series of National Income Estimates for 1955-56 to 1959-60 (1961) (C.S.O.).
N.S.S.	National Sample Survey.
SA	Statistical Abstract.
SAB	Statistical Abstract of Bombay State.
SAH	Statistical Abstract, Hyderabad State.
SAMh	Statistical Abstract of Maharashtra State.
SAMP	Statistical Abstract of Madhya Pradesh.
SCR	Season and Crop Report (annual).
SCRB	Season and Crop Report of the Bombay State.
SCRMP	Season and Crop Report of Madhya Pradesh.

APPENDIX II

DISTRICTS IN THE DIFFERENT REGIONS OF MAHARASHTRA

<u>Region</u>	<u>Districts</u>
I. KONKAN	1. Thana 2. Bombay Suburban 3. Kolaba 4. Ratnagiri
II. DECCAN	1. Dhulia 2. Jalgaon 3. Nasik 4. Ahmednagar 5. Poona 6. Sholapur 7. Satara 8. Sangli 9. Kolhapur
III. MARATHWADA	1. Aurangabad 2. Parbhani 3. Nanded 4. Bhir 5. Osmanabad
IV. VIDARBHA	1. Buldhana

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2. Akola
3. Amravati
4. Yeotmal
5. Wardha
6. Nagpur
7. Bhandara
8. Chanda

APPENDIX III

TABLE A-3.1 : GROSS INCOME PER ACRE UNDER COTTON

(Rupees and Paise)

Districts	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Dhulia	46.84	34.60	121.77	51.43	45.43	92.95	142.95	121.30
Jalgaon	98.16	44.69	112.31	83.03	43.05	102.26	164.55	103.38
Nasik	58.33	44.32	112.73	91.61	66.26	102.89	209.72	188.52
Ahmednagar	111.70	19.73	124.99	56.83	67.48	53.81	128.31	235.79
Poona	264.86	299.27	40.43	233.54	154.95	116.24	169.22	229.83
Sholapur	232.53	97.83	229.05	111.98	79.63	69.79	125.43	183.83
Satara	204.17	369.14	408.33	435.50	294.00	168.32	40.13	302.47
Sangli	63.87	48.15	81.67	72.59	64.65	187.49	98.05	139.96
Kolhapur	72.24	59.16	92.19	81.67	119.29	228.66	39.35	107.54
Aurangabad	41.32	21.01	42.98	52.39	42.80	46.09	61.04	56.88
Parbhani	51.80	38.88	40.83	48.84	31.80	54.27	69.93	57.03
Nanded	55.26	36.77	30.31	42.99	26.86	43.30	81.36	83.03
Bhir	33.56	20.57	44.60	30.77	37.69	43.83	63.63	45.07
Osmanabad	32.81	16.35	24.98	31.82	16.09	28.26	42.63	42.10
Buldhana	125.72	68.25	74.98	82.10	62.41	84.45	104.56	76.95
Akola	142.29	80.83	88.51	95.33	73.93	94.79	90.34	99.14
Amravati	122.52	64.96	74.93	55.52	51.86	91.08	66.10	89.82
Yeotmal	127.26	69.31	60.87	76.98	39.47	82.35	89.38	68.51
Wardha	43.62	28.74	255.26	25.42	13.27	68.02	53.36	49.64
Nagpur	36.34	28.81	31.65	23.44	12.11	46.40	59.22	44.45
Chanda	54.69	39.39	32.69	29.62	23.32	36.56	59.62	64.05

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N.B. The table gives value per acre of kapas (i.e. seed-cotton) exclusive of that of byproducts, such as cotton seed and cotton sticks.

APPENDIX IV

TABLE A-4.1 : GROSS INCOME PER ACRE UNDER GROUNDNUT

(Rupees and Paise)

District	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Dhulia	60.45	58.43	155.76	57.20	91.85	124.62	147.69	130.89
Jalgaon	104.70	54.73	141.99	140.11	119.84	125.26	141.81	105.02
Nasik	84.14	49.35	185.36	77.00	82.31	96.68	57.55	109.87
Ahmednagar	86.61	59.82	117.33	122.32	81.55	96.44	90.24	110.81
Poona	122.56	53.63	130.53	122.16	104.77	103.62	189.50	48.67
Sholapur	119.23	59.50	134.49	89.03	82.79	79.23	93.93	125.56
Satara	180.62	144.00	239.50	92.32	72.34	155.60	208.04	166.24
Sangli	111.02	70.68	130.20	113.85	66.36	107.16	116.27	99.51
Kolhapur	131.79	73.39	136.79	97.00	110.25	136.45	161.20	161.14
Aurangabad	136.01	97.11	156.28	104.55	115.48	141.08	44.02	57.44
Parbhani	136.59	122.41	158.79	134.70	104.58	138.95	50.17	122.96
Nanded	241.30	163.05	179.61	130.48	102.66	134.95	61.37	128.14
Bhir	171.36	102.31	199.32	145.41	137.05	86.54	95.02	127.43
Osmanabad	150.35	84.97	138.79	136.83	71.21	107.38	101.06	131.52
Buldhana	126.04	58.33	168.20	83.51	79.24	80.11	62.42	80.62
Akola	117.83	66.10	122.49	83.56	66.39	107.81	87.64	85.11
Amravati	129.44	57.25	125.41	64.83	92.17	150.65	51.51	84.10
Yeotmal	135.66	71.75	113.79	46.71	48.58	135.29	34.01	86.97
Wardha	118.08	69.36	104.33	61.76	77.38	181.47	50.37	92.68
Nagpur	205.09	91.76	131.39	102.30	81.53	55.35	65.93	65.97
Bhandara	167.14	136.84	106.67	125.00	195.62	190.62	86.87	87.50
Chanda	129.41	88.57	123.08	32.50	170.00	122.50	65.00	100.00

APPENDIX V

TABLE A-5.1 : GROSS INCOME PER ACRE UNDER TOBACCO

(Rupees and Paise)

Districts	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Ahmednagar	423.00	381.13	331.64	444.63	153.71	379.86	527.44	592.38
Poona	1128.00	544.50	299.50	317.67	174.20	158.83	766.80	958.50
Sholapur	767.67	384.29	247.45	355.09	217.75	544.44	553.15	450.69
Satara	901.33	640.08	356.00	514.21	383.26	499.42	846.90	692.18
Sangli	920.14	426.99	186.45	153.62	448.95	222.70	260.49	337.45
Kolhapur	1004.65	482.64	360.58	399.32	231.88	462.64	335.91	250.06
Aurangabad	714.33	202.67	105.67	256.00	209.60	328.43	573.57	942.00
Parbhani	-	707.00	553.00	595.50	-	445.67	-	-
Nanded	428.60	230.29	315.25	271.40	278.00	254.00	726.00	1089.00
Bhir	1071.50	304.00	317.17	170.67	-	383.33	1100.33	844.00
Osmanabad	357.17	-	360.43	387.86	1390.00	338.78	445.29	474.43
Buldhana	1376.00	377.17	505.86	476.50	487.75	-	-	-
Amravati	1769.25	1293.00	607.00	933.29	955.86	916.75	-	-
Nagpur	3538.50	862.11	758.80	846.93	590.35	916.75	888.00	950.00
Chanda	1437.50	1050.67	822.17	816.69	543.60	627.26	393.64	534.46

APPENDIX VICATEGORISATION OF DISTRICTS ON THE BASIS OF
INCOME ESTIMATED AT MAHARASHTRA PRICES

It would be instructive to examine to what extent the broad categorisation of districts into 'high' and 'low' made in Chapter X is affected by the fact that price of a crop in one district in a year may be different from that in another. Thus, for example, if the prices of the more important crops were consistently higher in Konkan districts than in those of Marathwada, the classification of the former set of districts as 'high' and the latter as 'low' on the basis of income per acre that actually accrued in the respective districts, would not necessarily imply that composite productivity in agriculture in Konkan districts was higher than that in Marathwada.

In order to obtain an approximate idea of the impact of differences in prices of crops in the districts on categorisation in Chapter X it was decided to carry out a small exercise. The essential operation is to evaluate crops in the districts at the weighted average prices in Maharashtra as a whole and compare the broad categorisation done on that basis with that in Chapter X. It would be extremely laborious if the exercise is to be carried out in the case of all the crops in the 26 Maharashtra districts

in each year of the period, 1951-52 to 1958-59. It appears that our purpose is served if we choose the more important crops and evaluate their outturn at Maharashtra prices in a fairly large number of districts in selected years. We select the following twelve crops which have been the more important in Maharashtra districts : paddy, wheat, jowar, bajri, ragi, gram, tur, sugarcane, kapas, groundnut, sesamum and linseed. The two years for which values are obtained are 1951-52 and 1958-59, the first and last years respectively of the period chosen.

As for the districts it seems essential to take at least half the number of districts in each of the four regions of Maharashtra. Thus the number of districts selected regionwise is as follows : (1) Konkan: two, (2) Deccan: five, (3) Vidarbha: four, and (4) Marathawada: three. In all there would be fourteen districts. The main consideration in the selection of districts is the degree of constancy over the eight-year period in the broad relative position as set out in Table 10.12 (p.415) Thus we select straightaway the eight districts which consistently appeared in one category or the other in all the eight years. Categorywise these are: (1) High: Thana, Kolaba and Kolhapur, (2) Medium: Sangli and Chanda, and (3) Low: Sholapur, Aurangabad and Bhir. We would require two more districts of Deccan, three of Vidarbha and one

of Marathwada, Jalgaon and Satara appeared in the 'medium' category for seven of the eight years. These are, therefore, included in our list. Of the four Vidarbha districts which figure in the 'medium' category for the same number of years we shall select Akola, Amravati and Nagpur as these three with Chanda would be fairly representative of Vidarbha. The additional Marathwada district we choose is Parbhani which was found to be relatively on the 'high' side within Marathwada, the other two already selected being on the 'low' side within that region.

After estimating the weighted average price of each of the twelve crops in Maharashtra in the two years 1951-52 and 1958-59 we obtain the aggregate value of these crops in each of the selected districts on the basis of Maharashtra prices. It is then possible to estimate income per acre from these twelve crops taken together in the fourteen districts in 1951-52 and 1958. The results are presented in Table A-6.1 in which we also show the income per acre from the same crops in Maharashtra as a whole.

It would not be possible to categorise these fourteen districts into 'high', 'medium' and 'low' on the lines of Table 10.12 as that would require estimation for all the 26 districts. We can, however, classify the districts simply into 'high' and 'low' by following the criterion underlying classification in Table 10.6 (p.405). Those

TABLE A-6.1 : INCOME PER ACRE FROM MAJOR CROPS (Rs. AND Paise)

Districts	1951-52	1958-59
1. Thana	153.06	371.44
2. Kolaba	195.43	331.54
3. Jalgaon	74.30	109.62
4. Sholapur	40.20	83.24
5. Satara	79.66	109.08
6. Sangli	54.21	102.26
7. Kolhapur	224.17	296.38
8. Aurangabad	59.85	74.55
9. Parbhani	56.82	86.77
10. Bhir	50.99	76.36
11. Akola	100.51	106.32
12. Amravati	116.62	118.73
13. Nagpur	94.47	87.93
14. Chanda	95.70	122.73
Maharashtra	80.80	107.92

districts with income per acre higher than that of Maharashtra are ranked as 'high' and those with lower, 'low'. The rankings of the fourteen districts in 1951-52 and 1958-59 on the basis of the information in Table A-6.1

and that in Table 10.6 are given in Table A-6.2.

TABLE A-6.2 : RANKING OF FOURTEEN DISTRICTS

1951-52		1958-59	
Table 10.6	Table A-6.1	Table 10.6	Table A-6.1
<u>High</u>	<u>High</u>	<u>High</u>	<u>High</u>
1. Kolhapur	1. Kolhapur	1. Thana	1. Thana
2. Kolaba	2. Kolaba	2. Kolaba	2. Kolaba
3. Amravati	3. Thana	3. Kolhapur	3. Kolhapur
4. Thana	4. Amravati	4. Sangli	4. Chanda
5. Akola	5. Akola	5. Jalgaon	5. Amravati
6. Nagpur	6. Chanda	6. Chanda	6. Jalgaon
7. Chanda	7. Nagpur	7. Amravati	7. Satara
8. Jalgaon			
<u>Low</u>	<u>Low</u>	<u>Low</u>	<u>Low</u>
1. Satara	1. Satara	1. Nagpur	1. Akola
2. Sangli	2. Jalgaon	2. Satara	2. Sangli
3. Parbhani	3. Aurangabad	3. Akola	3. Nagpur
4. Bhir	4. Parbhani	4. Parbhani	4. Parbhani
5. Aurangabad	5. Sangli	5. Sholapur	5. Sholapur
6. Sholapur	6. Bhir	6. Bhir	6. Bhir
	7. Sholapur	7. Aurangabad	7. Aurangabad

N.B. :- The districts are arranged in serial order according to the relevant income per acre.

The table shows that the precise ranking of districts by income estimated at the respective district prices is not quite the same as that by income from major crops computed at Maharashtra prices. However, the important point is that the broad categorisation of districts into 'high' and 'low' is more or less the same by the two alternative criteria. The exceptions are few and mostly minor. One is that whereas in 1951-52 Jalgaon appeared as 'high' in Table 10.6 it came under 'low' on the basis of estimation at Maharashtra prices. However, in Table 10.6 it was the last in the 'high' category whereas in the latter case it was quite high up in the 'low' category. The other exception is in 1958-59. Satara as well as Sangli appear in different categories by the two criteria. This exception also does not appear to be quite significant.

It is further important to note that Thana, Kolaba and Kolhapur were quite 'high' in both the years by the two types of income per acre estimated whereas Aurangabad, Bhir and Sholapur were very 'low'. Further Table A-6.1 also shows that there was a sharp break in the income per acre of Thana, Kolaba and Kolhapur on the one hand and that respectively in the other districts. Finally, in this table also the Maharashtra average gravitates markedly towards the lowest income per acre in the districts rather than towards the highest. We may, therefore, say that the

substantive conclusions of Chapter X are borne out even when income is estimated at Maharashtra prices thus eliminating the impact of differences in prices of respective crops in the different districts. It then seems to be proper to interpret classification of districts on the basis of income estimated at the respective district prices in terms of differences in overall agricultural productivity in the districts.

One last point needs to be made. When the impact of price differences as between districts in a year is eliminated the differences in income per acre can be traced back to two types of differences : (1) those in the average yield of the respective crops in the districts, and (2) those in the cropping pattern. The differences that come under (1) obviously make for those in the composite agricultural productivity of the districts. It is important to note that even differences falling under (2) lend themselves to a similar interpretation. When the income per acre at Maharashtra prices is higher in a district A than that in a district B because the one grows more of, say, paddy and the other more of, say, jowar, what this means in effect is that the cropping pattern in A is oriented to relatively higher yield crops and that in B to comparatively lower yield crops. In that case clearly one is warranted in inferring that the overall agricultural productivity is higher in A than in B.

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