
CHAPTER**1****RESEARCH BACKDROP**

1.1 LAND UTILISATION

"Land resources form the most important natural wealth of the country and their proper utilisation is a matter of utmost (important) concern to its people".¹ The utilisation of land according to its capacity ensures the best possible advantages. "Land-use is the surface utilisation of all developed and vacant land on a specific point at a given time and space".² "The land use is also related to conversion of land from one major use to another general use".³ Man, according to his needs, changes the use of land. Stamps has classified the needs of man into six major categories viz. the need of work, home, food, transportation, communication, defense and recreation⁴. One of the most important features of land use in India is the large proportion of area suitable for agriculture that already has been brought under cultivation.

A detailed classification of land utilisation⁵ as introduced in India in the post Independence period is as follows.

1 Land under forests

2 Area not available for cultivation:

(a) barren and unculturable land;

(b) land put to non-agricultural use.

3 Other uncultivated land excluding current follow:

(a) permanent pastures and other grazing lands;

(b) miscellaneous tree crops and groves not included
in the net area sown;

(c) cultivable waste.

4 Fallow Lands:

(a) current fallow;

(b) fallow land other than current fallows

5 Net area sown

6 Area sown more than once

7 Total cropped area

Table 1.1 shows the land utilisation pattern of India since 1950-51.

Table 1.1

Land utilisation in India

(million hectares)

Particulars	1950-51	1960-61	1970-71	1980-81	1985-86
(1) Reporting area	284.3	298.5	303.8	304.6	304.3
(2) Area under forests	40.5	54.0	63.9	67.4	66.7
(3) Area not available for cultivation	47.5	50.8	44.6	39.6	40.6
(4) Other uncultivable land except fallow land	49.4	37.6	35.2	32.2	31.2
(5) Fallow land	28.1	22.8	19.4	24.6	24.9
(6) Net area sown	118.8	133.2	140.3	140.3	141.1
(7) Area sown more than once	13.1	19.6	25.0	33.0	36.3
(8) Total cropped area	131.9	152.8	165.8	173.3	177.3

Source: Agrawal, A.N., H.O. Varma and R.C. Gupta, Indian Economic Information Year Book, 1990-91, P.109.

1.2 SIGNIFICANCE OF CROPPING PATTERN

"By crop pattern we mean the proportion of area under different crops at a point of time, changes in this distribution over a period of time and factors determining this change in distribution. Cropping pattern in India is determined mainly by natural factors like rainfall, climate and soil conditions."⁶ The cropping pattern is of greater importance for the following reasons:

- (1) It indicates how the available land is distributed for the production of different crops.
- (2) It determines the productivity and production of land.
- (3) It reflects the fact as to whether farming is subsistence or commercial.
- (4) It represents the topography, quality and quantity of land.
- (5) It determines the economic conditions of the farmers.
- (6) It reveals the use of available land.
- (7) It represents the progress of agriculture and the position of agriculture in the country's economy.

1.3 FACTORS DETERMINING CROPPING PATTERN

The cropping pattern of any country depend upon a number of factors which can be classified into the broad categories of natural, social, historical and economic. In addition, the government of a country can also effect changes in crop pattern through its agricultural policy.

1.3.1 Natural Factors

These pertain to the physical characteristics and natural endowments of a region and are the most important factors determining its crop pattern. Nature of soil, types of climate, extent of rainfall, etc. will determine the basic crop pattern of a region over a period of time. For example in areas having sufficient rainfall and water

logging, the most appropriate crop is rice since it can withstand water. This explains the cultivation of rice in West Bengal. In area having low rainfall and little availability of water supply, the choice will naturally fall upon jowar and bajra which require small quantity of water.

1.3.2 Economic Factors

These pertain to prices of agricultured commodities incomes of farmers, size of land holdings, availability of agricultural inputs, nature of land tenure etc. The importance of these factors in affecting the crop pattern is self evident. For example, consistent increase in prices for some years of a certain crop relative to that of other crops can induce the farmers to shift over to that crop. The size of farm holding also affects the crop pattern. Small farmers give first priority food crops because they are more interested in fulfilling their food requirements in the first instance. As against large farmers with substantial holdings man tend to devote a part of their land for growing cash crops. Availability of agricultural inputs like seeds, fertilizers, irrigation, etc. too affects the crop pattern.

1.3.3 Historical Factors / ✓

In certain areas certain crops are grown by sheer accident or necessity and then that cropping pattern is maintained through years. Historical pattern of land tenure

also plays its role. If the land is divided into a number of small plots with ownership vested in numerous small and marginal farmers (as under ryotwari), the tendency will be to grow food crops. As against this, if ownership of land is vested in large landowners (as under zamindari) the tendency will be to produce more cash crops. / to

1.3.4 Social Factors

Social environment, customs, traditions, outlook towards material things etc. also influence crop pattern to some extent. For example, in the pre-Independence period, the outlook of a majority of farmers was very narrow and they were bound by traditions. Therefore, the same crop pattern was continued to be adopted by successive generations. After Independence, gradual changes in social awareness and social consciousness are emerging which are in turn, making farmers more and more responsive to price changes and productivity possibilities of different crops.

1.3.5 Government Policy

Policies of the government relating to different crops, exports, taxes, subsidies, supplies of inputs, availability of credit, etc. can affect the cropping pattern in a significant way. The policies of expansion of irrigation facilities, determination of agricultural prices like procurement prices, support prices and a host of other /

policies have all contributed to changing crop pattern. /changing/

1.4 MICRO-ANALYSIS OF CHANGES IN CROPPING PATTERN

1.4.1 Objectives of The Study

Changes in cropping pattern in any region anywhere is a continuous process and is affected by all the factors outlined earlier. It is always interesting and useful to peruse the manner and extent to which the cropping pattern of a region has undergone changes over a period of time. The present study is a micro-level study of Sangli district, which is one of the 30 districts of Maharashtra state. Following are the objectives of the study.

- (1) To bring out the class of crop/crops having maximum area in the district as well as in each taluka. *group of crops*
- (2) To focus attention on long-term behaviour of principal crops of the district through considerations of the range of variation of area, fitting of trend lines and estimating the values of coefficients of variation for each taluka.
- (3) To establish conclusions regarding changes in cropping pattern over the span of 24 years (1964-65 to 1986-87).

1.4.2 Methodology

Methodological framework of the present study is given below.

Universe of study

The investigation is the micor-level study of croppig pattern of Sangli district which is one of the 30 administrative units of Maharashtra State. The region is chosen at random. *It is chosen at random is properly*

Period of study

The data collected for the purpose of study is for a period of 24 years from 1965 to 1988. Sangli district as at present was reconstituted in 1964 when Atpadi and Kavathe Mahankal talukas were formed newly. Hence the data were collected from 1964-65 to 1987-88; data was not available beyond 1987-88 as the district reports of 1993 gave details upto 1987-88.

Choice of crops

The analysis is developed with reference to the two principal sub-groups of crops, viz. food crops and non-food crops. Within the former sub-group, the following important crops have been chosen for detailed study, jowar, bajra, all pulses together and sugarcane. The latter sub-group has groundnut as the principal commodity. Thus the serutity pertains to the two crops sub-groups and five crops of Sangli district, and the actual plan proceeds the following way in order to find out the respective trends:

(a) cereals

- (b) jowar
- (c) bajra
- (d) all pulses
- (e) all foodgrains
- (f) sugarcane
- (g) all food crops
- (h) groundnuts
- (i) all non-food crops

Foundation of the study

It is rather a partial analysis based on only one variable, viz. area of land under each crop. The reason is that farmers' decisions of crop combination on all counts ultimately manifest in the allocation of their cultivable land among various crops.

Sources of data

The entire work is based on the secondary data ^{at} collected from the 'Socio-Economic Review and District Statistical Abstract of Sangli District' of the years from 1965-66 to 1992-93. *8. 2nd. 1st. 1st. 7-88*

Statistical techniques of data analysis

- (1) To begin with, annual data from 1964-65 to 1987-88 was collected for the crop groups and selected crops. The annual data of 24 years in question were then converted

into 8 triennial averages.

(2) The triennial time series data of area under principal group of crops and also individual crops was considered in the following manner:

(a) Changes were noted with reference to both the absolute area and its percentage.

(b) Firstly, the district total area under particular crop group/crop in absolute terms and its percentage share in gross cropped area of the district was looked into.

(c) Then talukawise absolute area and percentage shares were taken into account. This part has two dimensions. Consideration of the taluka area as percentage of (a) the district area under the crop group or crop and (b) as percentage of the gross cropped area (GCA) of the respective talukas.

(3) The data sheet were completed to include the triennial average of the GCA of the district, total crop group/crop of the district, talukawise triennial average area and their percentage shares in the district area of the crop group/crop as also percentage shares in the GCA of the respective taluka.

(4) Analysis of the data sheet for each crop group/crops pertaining to the talukas was done from three angles.

(a) average share for the entire period and the range of variation;

- (b) trend of percentage area;
 - (c) coefficient of variation by using Karl/Pearson's method⁷.
- (5) Graphical presentation of crop group and crop trends talukawise was done by adopting the simple method of fitting the trend line, viz. the method of averages of sub-periods. For the purpose the eight triennium periods were divided into two sub-groups of four trenniums each as follows: (a) 1964-67 to 1973-1976 and (b) 1976-79 to 1985-88. Average percentage figures for the two sub-groups provided two points on the graph. They were joined to get the trend line.

1.4.3 Plan of The Study

First chapter is in the nature of the framework of the study. At the outset it very briefly introduces the concept of cropping pattern, factors determining cropping pattern and significance of cropping pattern. The later part outlines the methodological details. Chapter 2 acquaints the readers with agricultural situation of Sangli district.

Chapter 3 is devoted to the analysis of area under cereals in general and jowar and bajra in particular. / in

Chapter 4 covers total pulses and food-grains in general.

Fifth chapter pertains to food crops in general and sugarcane in particular.

Sixth chapter refers to non-food crops in general and groundnut in particular.

Seventh chapter is concluding one. It consolidates the results of the third, fourth and fifth chapters in order to draw meaningful conclusions about changes in cropping pattern in Sangli district.

NOTES AND REFERENCES:

- 1 Mamoria, C.B., Agricultural Problems of India, published by Kitab Mahal, Allahabad in 1982 p.70.
- 2 Jainendra Kumar, Land use Analysis (A case study of Nalanda District in Bihar), Inter-India Publications, New Delhi, 1986, p.1.
- 3 Nanavati, M.B. (Ed.), Readings in Land Utilisation, (Foreward), The Indian Society of Agricultural Economics, Bombay, 1957, p.2.
- 4 Ibid.
- 5 Bansil, P.C., AGRICULTURAL STATISTICS IN INDIA Mohan Primalani for Oxford and IBH publishing Co. 66, Janpath, New Delhi-110001, 1984, pp.55-56.
- 6 Misra, S.K. and V.K. Puri, INDIAN ECONOMY-ITS DEVELOPMENT EXPERIENCE p.441.
- 7 The following is the Karl Pearson's method for estimat-

ing coefficient of variation.

$$\text{Arithmetic Mean} = \bar{X} = \frac{\sum X}{N}$$

$$\text{Standard Deviation} = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

$$\text{Coefficient of Variation} = \frac{\text{S.D.}}{\bar{X}} \times 100$$

(for getting percentage)

SANGLI DISTRICT ADMINISTRATIVE DIVISIONS



0 10 20 30 Km.

⊙ DISTRICT H.Q.

○ TAHSIL H.Q.

— DISTRICT BOUNDARY

--- TAHSIL BOUNDARY

