Chapter – I

INTRODUCTION

Agriculture is considered as one of the oldest and most important of all the economic activities of man. Agriculture is related to domesticated plants and animals as activity to satisfy man’s needs. Nowadays agriculture has become the world’s most important industry. Agricultural geography has thus become a unique branch of geography in which the physical environment and man’s response to it have become cardinal points of research and regionalization.

The credit of introducing this pioneering approach in agricultural geography goes to L.D. Stamp (1962), several landuse studies followed by this, In India Chatterjee (1941) drew the attention of geographers to undertake a land use survey. M. Shafi (1951) focused attention on needs of land utilization survey. The influence of physical factors, especially, morphological factors on landuse was emphasized by Deshpande, Bhat and Mavinkurve (1959). The importance of landuse surveys has been explained in detail by Ganguli (1964). A number of attempts have been made in regard to case studies, regionalization and evaluation of landuse problems. Karimi (1950) and Lahiri (1950) have carried out micro-studies to highlight the need of proper utilization of land and the connected agricultural problems. Shafi (1960) carried out extensive fieldwork in eastern Uttar Pradesh and came up with actual landuse maps at micro or even nano levels. Noor Mohamad (1971), A.R. Kumbhare (1976), S.D. Shinde (1980), Indra Pal and Lakshmi Shukla (1981), Karmarkar P.R. (1981), Datye V.S. (1983), Vaidya B.C. (1996) have focused their attention on the landuse of specific regions. All
these studies also suggest ways and means of improving the landuse for the ultimate good of human welfare.

Geographers have recently turned their attention to assess quantitatively the changes which have been in place in the utilization of land. In this connection, Chakerborthy (109,1962) has given a statistical method to analyse land use pattern of any region. M.Shafi(114,1965) has selected Ganga-Yamuna Doab, in the most fertile and thickly populated part of Uttar Pradesh, for his intensive study of patterns of crop landuse.

The significance of spatio-temporal analysis of agricultural landuse in a predominantly agricultural country like India can never be overstated. In the context of the alarming increase of population and relatively slow rate of economic growth, it is increasingly being accepted that the proper and efficient utilization of land resources could be the answer to the problems faced by the country. This is particularly significant even from the modern theoretical view that considers landuse patterns as dynamic and not static. “Man,s main purpose for using land is to gain some sort of satisfaction, such as earning an income or providing recreation rather than ‘blending with nature’ moreover farmers viewed as income optimizers behave like ‘economic men’ and therefore their decision depend ultimately on two things : productions functions and the prices of inputs and outputs” (Found-1971), Due attention should also be paid by researcher to the preservation and care of the ecosystem when the farmers degradation have damaged it in both the developed and developing countries.

Agriculture also has been the source of raw materials to India’s leading industries. The importance of agriculture in the national economy is also indicated by many other facts e.g. agriculture is the main support of Indian transport system since railways and
roadways secure bulk of their business from the movement of agricultural goods. Further, the failure on agriculture front upsets the whole system of planning. Thus, the problem of providing food to ever increasing population is the most important one. Therefore it is pertinent that this vital economic activity and its spatial distribution be described properly, explained and understood.

Agriculture in a way is the result of human efforts applied in exploitation of land resources, towards the satisfaction of one of man’s basic needs ‘food’. It is a kind of permanent or cyclic human intervention to satisfy human needs from the complex of natural resources i.e. land. The nature and level of human efforts applied and the quality of physical environment give rise to spatial variation in the agricultural patterns. In order to explain this spatio-temporal variation in the agricultural patterns one has to explain the nature of relationship between them and the physical, socio-economic and technological factors.

**OBJECTIVE AND OUTLINE OF THE WORK**

This study is concerned with the spatio-temporal analysis of agricultural landuse in a selected district viz. Thane district in the state of Maharashtra. Thus, the study of agricultural patterns and their spatial variation form the core of the study undertaken. It is proposed to consider the spatial variation in the agriculture landuse in Thane district with a view to evaluate the influence of certain physical environmental and economic factors on the distribution pattern. The currently evolving and changing agricultural landuse patterns in the district with special reference to changes that have taken place since the end of the 20th century are investigated. An attempt is also made to represent the various patterns of landuse and socio-economic phenomena and the resulting agricultural location in a model form. The work has its limitations imposed by
choice of region and other factors. Several aspects are omitted and author is fully aware of such omissions which result from lack of data and other resources including time to be devoted for such work.

The spatio-temporal analysis of agricultural landuse in Thane district has been organized into following chapters followed by conclusion and bibliography.

Chapter I: The first chapter begins with the introduction to the area under study, Chapter II: The description of physiography through a general study of geology, relief, and drainage. Some important aspects of climate and the distribution of weather elements are also considered along with the spatial distribution of soils and natural vegetation studied in chapter two.

Chapter three is devoted to the discussion of selected socio-economic factors and their aerial distribution in the district. Further, different aspects of population with a special emphasis on the persons engaged in the agricultural activity are studied along with other elements of agricultural organization like land tenure, land holding, farm elements, marketing, and the role of transportation and irrigation in the development of agriculture in the district.

Spatial and temporal distribution of general landuse forms the core of chapter IV. General land utilization and agricultural land utilization are described in chapter four and five respectively. The association between the agricultural and landuse and the various related factors are examined in sixth chapter followed by a temporal analysis of trends in the production of various agricultural commodities.

Chapter seven delineates the composite crop regions with the help of quantitative techniques used in the identification of crop combinations for the individual village in the district. This discussion
helps to form agricultural regionalization in chapter seven where, an attempt is made to explain the crop combination and diversification regions and landuse patterns resulting from the interaction of various physio-cultural phenomena.

Sample villages from each of the crop combination and diversification regions, are studied at micro level in the eighth chapter. This helps to evaluate the interactions of various elements and the resulting landuse patterns.

An attempt is made to bring together the main findings and to arrive at some conclusion, apart from providing a brief summary of the entire work, includes a discussion of the problems and prospects of agriculture in Thane district. The work it is hoped will have served its purpose if it can at least provide a basis for planning changes in agricultural landuse for the optimum utilization of the regions resources. The regional frame developed and the model agricultural location may together be useful for making policy decisions, especially for the allocation of resources with respect to the potential and problem regions, delineated in terms of the existing agricultural patterns.

**Choice of the Region**

The scale problem is fundamental in geographical studies. In agricultural geography, data is collected and observations are generalized. A district level study would provide us with frame at micro level on which further research can be based. Keeping this in mind, The Thane district (Maharashtra) was chosen as an area of investigation. The choice is influenced by several considerations. Firstly, little work has been done to assess the significance of various physio-socio-economic factors with respect to agriculture in North Konkan (Maharashtra)). It is felt that such study at micro level would
provide a useful approach to obtain a more complete understanding of the problems of agriculture in the region.

Secondly, Thane district has significant location in respect to the ‘Sahyadri’ (Western Ghats) in eastern side. The district is a good representation of Konkan area in many respects viz. geology, physiography, climate, drainage, natural vegetation, soils and other socio-economic phenomena. Therefore, the study of the agricultural landuse of Thane district will help to a certain extent to understand agricultural geography of North Konkan. Thirdly, the district has varied physical base i.e. it represents large variations in topography. Thus it is possible to evaluate the influence of various physical elements upon the agricultural landuse.

All these considerations have led to the choice of Thane district as the region for this study in order to understand the agricultural landuse of the region in a time-space perspective.
LOCATION MAP
AND
ADMINISTRATIVE UNITS OF THANE DISTRICT
Sources of Data in The Present Study

The study is based on the use of village as a unit of observation to understand the spatial variation in the agricultural landuse. The temporal aspects are studied at the district level to appreciate the overall picture of changes in agricultural patterns. The investigation excludes the Thane city tahsil being predominantly urban area.

Season and crop reports published by the Government of Maharashtra, formed a major source of data on land use and cropping patterns at district level.

Data regarding village level agriculture was collected from the Revenue Records at each of the tahsil headquarters.

Annual socio-economic review and district socio-economic abstracts of Thane districts were the sources of data on landuse, cropping patterns, irrigation, population and other economic activities at tahsil level.

District census handbook of Thane district, compiled by the census office Maharashtra, were the other important sources of data on village level population, occupational classes and general land utilization.

Data on some aspects of agriculture, irrigation and transport was collected from the Agricultural Department, Government of Maharashtra, Thane office.

The Grampanchayat offices in the villages and the offices of Talathi provided information regarding distribution of crops, land holding, irrigation wells, general land utilization, population distribution and settlements at village level.

The information relating to the cultivation of crops, crop weather calendar, agricultural practices and farmers input –output budget etc. was collected by the author through interviews with local farmers during his field work in the region.
Other sources of information used in the compilation of the maps are-


ii. Maps of Thane District published by the Government of Maharashtra.

iii. Village maps on scale 10cm to 1km (1:10,00,000) prepared by Land Survey and Record office, Thane.

iv. Thane District Planning Map on scale 1cm to 2.5km (1:250000)

**Field Work**

In the initial stages of the work, in order to collect the data relating to village level agricultural landuse, all the tahsil headquarters were visited in the year 2009-10. Information was also collected and observations noted while traveling.

In the advanced stages of the research work, sample villages from different crop regions were selected for micro level analysis. These villages were visited by making several trips, to collect and update data and relevant information.