CHAPTER – I

METHODOLOGY AND DATA BASE

1.1   Agricultural Economy of Maharashtra

1.2   Statement of the Problem

1.3   Objective of the Study

1.4   Research Methodology

      1.4.1   Selection of Indicators

      1.4.2   Methods and Techniques of Data Analysis

      1.4.3   Sources of Data

1.5   Plan of Work

1.1 AGRICULTURAL ECONOMY OF MAHARASHTRA

The agriculture, as elsewhere in India is an important economic activity in which nearly 62 per cent of working population is engaged. Moreover, of the total state domestic products (SDP), agriculture sector contributes nearly 17 per cent in Maharashtra. It was observed that, during the last fourty-four years that, the relative share of agriculture to the state economy has been continuously declining. Thus, it reflects the fact that other sectors i.e. industry and tertiary sectors are becoming leading sectors in contributing to state's GDP. On the contrary agricultural sector in the state though making progress, it's performance did not show much satisfactory. It is due to the fact that land productivity did not improve much. Moreover, the soil and climatic conditions in the state are, such that it has both inferior cropping and relatively low yield in respect of most of the important crops. Major part of its tertiary sector fall on the plateau where the rainfall is low and highly unstable for the vast tracts. Moreover, the productive capacity of the soil has progressively deteriorated as a result of unchecked erosions.

Land use statistics showed that, of the total geographical area (301.58 lakh hectares), nearly 178.76 lakh hectares which accounts for 58 per cent of the total area was used for raising agricultural crops. Moreover, there is no further scope to bring additional land for increasing agricultural production in the state. In this situation, expansion of multiple cropped area is the only solid and enduring way to increase agricultural production. In

this regard, agriculture in the state did not achieve progress; because, the level of cropping intensity is about 121 indicating the fact that only 21 Per cent cultivated land is being used for multiple crops, which in turn depends on the irrigation facilities. Out of the total cultivated area, nearly 15 Per cent area in agriculture is brought under irrigation. Therefore, the success and failure of agriculture in the state is carried out under dry conditions. Moreover, climatic conditions in the state are such that, they contribute both an inferior cropping pattern and relative low yield of the crops. Cropping pattern in the state, in fact, is dominated by Jowar, Bajara and low valued crops. Moreover, due to low irrigation facilities, the application of new agricultural technology remained restricted. In fact, the state has not been able to participate in the green revaluation at substantial level that occurred in some other states since mid sixties. Still majority of cultivators do not have much scientific knowledge of what, how much and how to use modern agricultural inputs especially in scanty rainfall areas. Thus, the lagging in the use of such improved technology resulted in stagnant agricultural productivity. As against this background of agriculture, therefore, it is essential to study the growth of prospect of such agriculture more intensively and find out of the inforces for future development agenda alongwith remedial measures. With this attention in mind the topic has been selected for review and observations.

1.2 STATEMENT OF THE PROBLEM :

The present study tries to explain, the impact of new Economic Policy (NEP) introduced in 1991. The main components of new policy are liberalization, privatization and globalization. New economic policies longway impact on the Indian agricultural development as well as Maharashtra's agricultural development. For example, change in cropping pattern, new trends in agricultural technologies, change in import - export, some changed in agricultural policies and proggrammes for strategies etc. and also examine the present performance of agricultural development of Maharashtra state with a view to identify certain lapses, which could be removed through a suitable strategy of sustainable agricultural development in the state for the global competency.

1.3 OBJECTIVES OF THE STUDY

Keeping in view the importance of the agriculture in Maharashtra, following objectives were set to examined.

1. To examine the growth performance of agriculture during the economic reform period 1991-2004.

2. To examine changes in cropping pattern and land use patterns.

3. To study the use of modern inputs in agriculture and their impact on agricultural production.

4. To study the trends in agricultural exports.

5. To study the state government policies relating to agriculture.

6. To examine the emerging problems of agriculture in the state.

1.4   RESEARCH METHODOLOGY

This study mainly based upon secondary data. In view to examine

the objective of the study, secondary data on land use pattern, cropping

pattern, production of different crops being produced in the state, modern

agriculture inputs etc. were collected from the reports, documents

published by Government of Maharashtra from time to time. Moreover, in

view to examine the growth prospects of agriculture, the reforms period

1990-91 to 2003-04 has been selected.

1.4.1 Selection of Indicators

This study has included different indicators for analyzing the levels

of development also indicators have been selected from both sectors-input

and output. On output side, present agricultural productivity measured in

terms of standard nutritional units, value of crops per unit of net cropped

area and production of foodgrains per hectares, has been taken into

account. On input side only five indicators have been selected. They are

1.   Net irrigated area as Per centage of gross cropped area.

2.   Per centage of cereal's area under high yielding variety of seeds.

3.   Use of fertilizer Kg/ha of cropped area, density per thousand

      hectares of cropped area.

4.   Use of machinery and implements.

5.   Growth and production of principal crops.

6.   Trends in agricultural exports.

Value of these indicators have been utilized by two methods as follows –

1) Ranking co-efficient Method.

$$T = \frac{S}{\frac{1}{2}n(\eta - 1)}$$

2) Composite Index of Development

$$CDI = \left(\frac{p'}{p} \times 100\right) + \left(\frac{C_1}{C} \times 100\right)$$

1.4.2 Methods and Techniques of Data Analysis :

The present study is based on secondary source of data. This involved collection of all available data which would indicate development, changes and trends in the agriculture of Maharashtra state. These data was scattered in published and unpublished records of different Departments of the Government of Maharashtra state. These data was then transformed into rates, ratios and Per centages. Analyses have been taken with both absolute and Per centage values. The methods applied include, use of correlation, Per centage, mean, compound growth rate, combination and grouping techniques. The essential matter so derived is presented in maps, diagrams, graphs and tables, synthesizing a large body of data into present study.

1.4.3 Sources of Data :

A variety of sources of data have been tapped for the preparation of the present dissertation. Most important source of agricultural statistics is the office of Commissioner of Land Records and Settlements, Maharashtra state. Several publications are brought out by this office, such as Season and Crop Reports, Basic Agricultural Statistics of Maharashtra, Agricultural Census of Maharashtra state. Economic Survey of Maharashtra etc. These publications have certain statistical information about area, production and irrigation, land use, agricultural implements, fertilizer and HYVP seeds etc. Directorate of Agriculture, Maharashtra state, Mumbai also publishes agricultural data. Among them annual publication of agricultural statistics contains valuable information about the area production and yield crops, irrigation, use of fertilizer and inputs and other developmental measures. Publications of the Directorate of Economics and Statistics, Mumbai, Maharashtra state has provided many useful data through its publications, particular mention be made of statistical Handbook of Maharashtra 1990-91 to 2003-04, Quarterly Bulletin of Economics and Statistics, Government of Maharashtra. These have been the main sources of data for the past reforms years.

1.5   PLAN OF WORK :

The study has been divided into six chapters. Chapter 1st deals with methodology and data base. This covers, agricultural economy of

Maharashtra, statement of the problem, objective of the study, research methodology and plan of work. Chapter 2nd deals with the cropping pattern and changes therein during the economic reform period. In which, concentration and diversification of crops have been tried to be assessed, which culminutes information of crop zones of different rank order and in determination of crop combination regions. Changes in area, and extent of major crops have been discussed. It also includes discussion on land use, crop strature, use of high yielding varieties of seeds and use of fertilizers in relation to the size of operational holdings. Chapter 3rd deals with the changes in Land use pattern during the period under study. Spatial pattern of uses of modern yield, raising technologies have been analyzed in Chapter 4th.

Agricultural growth during the economic reforms is the subject matter of Chapter 5th. It starts with the discussion on changes in production of major crops. It has been tried to see whether these changed in production are due to the changes in area or yield or due to both. In the last section of the chapter relationship between agricultural growth and economic reform have been discussed. Chapter 6th deals with the agricultural exports, which tries to explain the emerging trends and their present performance of agricultural export during the period from 1991 to 2004. Chapter 6th deals with summary, findings and policy guidelines.