CHAPTER – I

INTRODUCTION

Agriculture has always been the backbone of the Indian economy and despite concerted Industrialization in the last six and a half decades agriculture still occupies a place of pride. It provides employment to around 60 per cent of the total work force in the country either directly or indirectly. The significance of agriculture in India arises also from the fact that the development of agriculture is an essential condition for the development of the national economy. But, the present study has been dictated by the growing concern in Thoothukudi District in Tamil Nadu for bringing about changes in the crop diversification, reasons for crop diversification, factors affecting the crop diversification and constraints faced by the farmers with related to crop diversification.

Agriculture is a mainstay for the livelihoods of a large proportion of the population, an important sector of Indian economy. To meet the challenges of a globalizing market in agriculture as well as the growing and changing needs of the population many countries in South East Asia have undertaken crop diversification to enhance productivity and cultivate high value crop with positive outcome. Diversification is taking place either through area augmentation or by crop substitution. If carried out appropriately, diversification can be used as a tool to augment farm income, generate employment, alleviate poverty and conserve precious soil and water resources.

India has made tremendous progress in the agricultural sector over the last 50 years. From ‘hand to mouth’ conditions in the early sixties, we have not only become self reliant in food grains but have acquired sufficient resilience to tide over the
adverse conditions. Wheat production has increased around 10 times and rice production four times during this period. These achievements are the result of a policy framework of improving rural infrastructure including irrigation, research, extension, provision of agricultural inputs at reasonable prices, and marketing support through minimum price mechanism.

According to the National Commission on Agriculture the factors influence on the crop diversification are; geo-climatic features, past experience, political pressures, social climate, economic compulsions, expected profit, personal preferences and community’s choice. So, it is understood that the crop diversification of any region depends upon physical characteristics as soil, climate, weather and rainfall. Apart from soil and climatic conditions, the crop diversification of a region will depend upon the nature and availability of irrigation facilities. Wherever water is available, not only can a different crop be grown, but even double or triple cropping will be possible. When new irrigation facilities are provided, the whole method of cultivation may change.

**CONCEPTS OF CROP DIVERSIFICATION**

Crop diversification refers to a shift from traditionally grown less remunerative crops. It also reflects a change from subsistence cropping to commercial cropping to more remunerative crops. Crop diversification is from paddy to pulses, oilseeds, coconut, banana, groundnut, cholam and other high value crops.

Crop diversification is usually viewed as a shift from traditionally grown, less profitable crops to newer, more profitable crops. It is also a strategy that is used to maximize the use of land, water and other resources for the overall agricultural development in a country. It provides farmers with feasible options to grow different
crops on their land. Therefore, a farmer’s decision to diversify is considered a major economic decision that has a strong bearing on the farmer’s income level and food security. There are many factors that may lead a farm household to diversify its cropping enterprises. These include the need to reduce risk, responding to changing consumer demands or changes in government policy, responding to external shocks, and, more recently, as a coping strategy to the challenges arising from climate change. Crop diversification provides a broader choice in the production of a variety of crops in a given area and also lessens the risk of crop failure. It also can offer comparatively higher net returns from crops, higher net returns per unit of labour, optimization of resources use, and higher land utilization efficiency.

One of the important factors responsible for increase in the cultivation of sugarcane, tobacco, etc., is the extension of irrigation facilities. It is possible that because of lack of capital, agricultural pre-requisites, better implements, improved seeds and finance for getting fertilizers, it might not have been the right crop that was being grown, but given these facilities, the crop diversification may change, and this may lead to crop shift. Government can influence crop pattern through legislative and administrative measures.

**STATEMENT OF THE PROBLEM**

Agriculture occupies the pride place in the economy of Tamil Nadu. Agricultural sector is characterized by production by the masses, in contrast to mass production by the industrial sector and seasonal variability. It provides food security which is a foundation for economic security, national security and other related forms of social security. It provides a strong and prosperous base to the state’s economic growth. Since independence, Tamil Nadu’s agriculture has experienced some major
changes and many of these were brought about through deliberate policy measures. Of late, there has been a growing concern in Tamil Nadu over the need for bringing about a change in the crop diversification.

Agriculture economy of the state has been dominated by rice. It must be recognized, however, that paddy is a water intensive crop. Scarcity of water especially for the kuruvai crop has been acting as a damper on increased production and productivity. In a situation of scarcity the state has to aim at increasing the use of water to increase productivity per unit of water. This would necessitate a change from more water intensive to less water intensive crop and more efficient water management. There has been excessive emphasis on increasing paddy production with a view to attain increasing self-reliance in rice. Further the production of millets, the poor man’s crop, has been neglected over the years.

Nutritional considerations as well as pressing need to save and earn foreign exchange by growing more economically rewarding and less water intensive crops such as oilseeds and pulses have an important bearing on the desirability of changing the traditional crop diversification. Since the area of land is fixed and the population of the country is increasing, it has become an urgent necessity for the farming sector to increase the cropping intensity and gross cropped area. India’s agriculture is partially successful but efforts are needed to increase the area under plough and increase the agricultural production and productivity. The changes in crop diversification represent in response to changing economic, technological and institutional factors. Farmers have to go for crop diversification and to grow more crops in order to earn maximum return on investment. This could increase the production and productivity of different crops. Paddy is cultivated in the Srivaikundam, Sattankulam and Tiruchendur taluks. Cumbu, Cholam and other pulses
are raised in the dry tracks of Kovilpatti, Villathikulam, Ottapidaram, Nagalapuram and Thoothukudi taluks. Cotton is cultivated in Kovilpatti, Ottapidaram and Thoothukudi taluks. Groundnut cultivation is undertaken in Ottapidaram, Villathikulam, Tiruchendur and Sattankulam taluks. And groundnut cake is being used as manure and cattle feed. So the Thoothukudi district makes it economy to be solely dependent agriculture. Main business of this area is dry chilly, cholam, cumbu, banana and other vegetables are raised in this district.

In this context the present study tries to identify the factors responsible for crop diversification, constraints on crop diversification; In particular, it tries to answer the question like what are the pulling factors and pushing factors on crop diversification? Why do farmers go for crop diversification? For this, an attempt is made to analyse the same.

**SELECTION OF THE STUDY AREA**

To make an in depth analysis of the trends of crop diversification in Tamil Nadu, specific study of a particular region, preferably a district is necessary. In the state of Tamil Nadu, Thoothukudi district is one of the districts where there is an average level of agricultural developments. The selection of suitable crop diversification has considerable impact on the agricultural development of the district. It seems that Thoothukudi District has great scope for agricultural development through suitable crop diversification. Hence for the present study, Thoothukudi District has been selected.
NEED FOR THE STUDY

The present study attempts to analyze the trends of crop diversification in Thoothukudi District. In this context the study aims to examine the factors responsible for the existing crop diversification in Thoothukudi district and frame suitable crop diversification policies for the regions of the district.

The study is important, especially, in the context of present controversies regarding to development of agricultural sector in developing economies. On the one hand, T.W. Schultz argues that the farmers in developing countries are adopting traditional agriculture and increasing the income of the farmers by increasing the efficiency of farms is doubtful. In the words of Hopper “Agriculture in many developing countries could not move ahead as desired by their respective governments because research was stagnant and there was nothing worthwhile to be extended to the farmers”.

On the other hand, economists like Ashok Rudra argue that there is still scope for increasing the income of the farmers by reallocation of resources and restructuring of the farm practices. Therefore, an attempt is made by the researcher, in the present study to analyze the trends of crop diversification in Thoothukudi district and to formulate optimum plans for the different regions. This would help in comparing the returns from existing plan with optimum plan and to find whether there is still room for improving the productivity of farms by reorganizing the cropping from theoretical to empirical analysis of crop diversification. In this context, the present study will also examine the factors influencing the crop diversification.
OBJECTIVE

This study indicates the following objectives they are

- To highlight socio economic background of farmers in the study area.
- To throw light on the structure of land holding, yield and income of the farmers.
- To explore the determinants of crop diversification and
- To identify the constraints faced by the farmers in crop diversification in the study area.

HYPOTHESES

The study is based on the following two hypotheses

- There is a positive relationship among all the constraints experimented by each category of farmers.
- Monsoon failure and climate changes are the major constraints faced by the farmers.

METHODOLOGY

SAMPLE DESIGN

i) Sample size

The study is based on multi-stage random sample survey in Thoothukudi district. Thoothukudi district in Tamil Nadu provides the empirical context for this study. Three Blocks representing the sample of the study namely Ottapidaram, Villathikulam and Kayatar, wherein the farmers have adopted crop diversification and each of the three blocks were agro-climatically distinct regions of the district. And in each Block 200 respondents were selected on the basis of stratified random sampling technique. As such the sample size was 600.
ii) Selection Sample Respondents

As per the classification of agriculture department, farmers were classified as large farmers (more than 10 acres), medium farmers (5 to 10 acres), small farmers (2.5 to 5 acres) and marginal farmers (less than 2.5 acres). The number of above categories of farmers was different in different blocks. Depending upon the number of farmers in each category 200 sample farmers were selected in each village. A pre-tested detailed schedule was used for gathering information from sample informants. The numbering sample respondents by blocks and villages are given in the Table 1.1

<table>
<thead>
<tr>
<th>District</th>
<th>Selected Blocks</th>
<th>No. of Panchayat Villages</th>
<th>Selected Panchayat Villages</th>
<th>Sample Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoothukudi</td>
<td>Ottapidaram</td>
<td>61</td>
<td>1.Ottapidaram 2.Maniyachi</td>
<td>100 100</td>
</tr>
<tr>
<td></td>
<td>Villathikulam</td>
<td>42</td>
<td>1.Keelavillathikulam 2.Subbiramapuram</td>
<td>100 100</td>
</tr>
<tr>
<td></td>
<td>Kayatar</td>
<td>25</td>
<td>1.Nagalapuram 2.Panickarkulam</td>
<td>100 100</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>128</td>
<td>6</td>
<td>600</td>
</tr>
</tbody>
</table>

Source: “G” returns of Ottapidaram, Villathikulam and Kayatar for the year 2012
STATISTICAL TOOLS

The primary data collected from the sample respondents were arranged in the form of tables and statistical tools like averages, percentages, Time series analysis, Spearman’s Rank Correlation Coefficient and scaling techniques were used for analysis and interpretation of data.

DATA BASE OF THE STUDY

For the present study relevant data on crop diversification have been collected from both primary and secondary sources. Primary data have been collected from the selected sample farmers with the help of a comprehensive Interview Schedule by personal interview method in the selected three blocks of Thoothukudi District. Frequent visits were made by the researcher and relevant information gathered from the respondents. At most care was taken to avoid bias to ensure accuracy of data with several cross checks. Secondary data have been collected from the sources like District Government Crop Report, Department of Economics and Statistics Publications, Thoothukudi district Statistical hand book, G-returns, Agricultural Year Book, Various Reports and published data in Statistical Abstracts.

PERIOD OF THE STUDY

The period of the study is one calendar year from January 2013 to December 2013.

LIMITATIONS OF THE STUDY

The present study covers three Blocks of Thoothukudi district and data have been collected only from 600 respondents of four categories of farmers, i.e., Large farmers, Medium farmers, Small farmers and Marginal farmers, in the selected six
villages. The findings of the study may be relevant only to those areas which face with the similar socio economic background and crop diversification. Therefore, the generalization of the research findings should be made with utmost care.

CHAPTER SCHEME

The whole study has been divided into seven chapters.

- The first chapter deals with Introduction, Need for the study, Selection of the Study Area, Statement of the Problem, Objectives, Hypothesis, Methodology, Sample Design, Tools of Analysis, Date base of the study, Limitations of the study and Chapter scheme.

- Chapter Two presents the Review of lecture Earlier Studies related to this topic.

- Chapter Three focuses profile of the study area.

- Chapter Four deals with the socio-economic background of the farmers of Thoothukudi District

- Chapter Five traces out the structure of land holding, yield and income of the farmers.

- Chapter Six analyses determinants and constrain of crop diversification.

- Chapter Seven presents the major findings of the study, suggestions, policy implications, area for the further research and conclusions.