CHAPTER I

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1.1 INTRODUCTION:

A striking difference in the economic structure of a developed country from that of less developed country is the predominance of non-agriculture sector in it. The share of agriculture in the national income and the proportion of work force engaged in the farm sector are quite insignificant in a developed country compared to the share of its non-agriculture sector in national income and the proportion of its work force engaged in non-agricultural occupations. In contrast a less developed country is predominantly agricultural. Here not only is agriculture the chief contributor to the Gross National Product but the proportion of work force engaged in agriculture is also very high.

In recent years agricultural growth has assumed new significance in less developed countries for yet another reason. With the increasing capital intensity of modern industries, it has become unlikely that even a high rate of industrial growth would be sufficient to create adequate employment opportunities for the rapidly expanding labour force of less developed countries. Hence a solution to the problems of poverty and employment in these countries cannot be conceived without agricultural growth. Thus, as Gerald M Meier put it "the emphasis on agricultural development now is not only for its instrumental value in sustaining expansion
elsewhere in the non-agricultural sectors, but for its own absorption or labourers and its own increase of real income among the rural poverty target groups of the small farmers and the landless labourers".¹

The role of agriculture in economic development is manifold. To quote Johnson and South Worth, as the largest sector of the economy, as least in the initial stages of development, agricultural sector is the source of manpower for industrial expansion and it is also the source of essential supplies for maintenance of a growing industrial population and of exports to be traded for industrial goods and it is the chief potential source of savings for non-agricultural investment.²

It is well known that the industrial take-off in England and Western Europe, between 1750 and 1850 was made possible by the agricultural surplus of these countries before this period. The economy of the USSR also developed due to agricultural surplus. The industrial development of Japan’s economy in the present century has been contributed by the agricultural surpluses, which were created in the economy during the last two decades of the 19th century.

China's example also shows that agricultural surplus is indispensable to a sound foundation of industrial development.³

1.2 IMPORTANCE OF AGRICULTURE IN INDIAN ECONOMY

Agriculture plays a predominant role in the economic development of a country. It is the primary sector of an economy that provides the basic things, which are necessary for the existence of human beings. It also provides some raw materials for industries. As the agriculture is the biggest industry in the country, the development of other industries as well as of the development of the country is not possible without the development of the agriculture sector.

The role of agriculture in the Indian economy is very crucial. Agriculture forms the backbone of the Indian economy and despite concerted industrialization in the last two decades, agriculture still occupies a predominant place. A flourishing agriculture sector is of much importance for the development of Indian economy. Being a largest industry in the country, agriculture is the main source of livelihood for over 70 per cent of population in a country.⁴

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The significance and role of agriculture in the national economy can be best explained by considering the contributions of agriculture sector towards other sectors of the economy. More than 80 per cent of the total population in India lives in rural areas and a large proportion of the rural population directly or indirectly depends on agriculture sector for their livelihood.

Agriculture sector dominates the economy to such an extent that a very high proportion of working population is engaged in agriculture. According to 1991 Census, 69.7 per cent of the total working population was absorbed by agriculture sector\(^5\).

The share of agriculture to the national income is also remarkable. Agriculture is most important sector of Indian economy contributing nearly half of the total national income.

Indian agriculture is of great importance for the development of the basic industries in the country. The significance of Indian agriculture arises from the fact that it has been the source of raw material to our leading industries in the country.

\(^5\)Ibid., P.2
1.3 IMPORTANCE OF CROPPING PATTERN:

Cropping pattern in agriculture is important both from the individual and national points of view. In the case of individual, it is the problem of deciding the combination of crops to be grown on limited land area with available quantities of resource inputs namely labour, capital and irrigation. In the latter case, it is the question of determining the cropping pattern to be encouraged for attaining the national objective of self-sufficiency in agricultural sector. The economic environment in India has changed considerably, especially after 1965 through the new planned agriculture development program of the nation.

The cropping pattern of an individual holding is an outcome of complex physical, economic and technological factors. Profitability from rising a particular crop not only depends on its productivity but also on its prices and cost of cultivation. Profitability is also related to the proportion of area under different crops at a particular period of time. It is the fact that the land under both the food crops and non-food crop particularly commercial crops has been increased but the increase in the latter has been larger. Hence, comparative study of food and commercial crops particularly shifts from paddy to banana highlights the fact lead to a shift of the area of paddy to banana.
1.4 IMPORTANCE OF BANANA

To speak about the succeeding generations, the phrase of “valaiyadivalai”, is being used because plantain is the symbol of auspicious or good things. It is not grown through seeds, but through roots. It occupied a pride of place in ancient Tamil Literature as one of the “Mukkani” (Three fruits: plantain, mango and jack fruits). For the past some years the planters have struggled hard and earned the good name in plantain cultivation and Tamil Nadu stands first in India. Till 1984-85 Maharashtra was in the top place in this cultivation, but for the past seven years from 1985 to 1992 Tamil Nadu has stabilised and caught hold the first place in this cultivation.6

Banana is one of the most important fruit crops grown in India. The banana cultivation in India is as old as Indian civilization. Banana is an important food crop for man, especially in the tropics. The annual world production is about 45 million tonnes. This is the only tropical fruit, which is exported, in large quantities, total export being of the order of 6.7 million tonnes per annum.7

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It is used as a symbol of prosperity during auspicious occasions. Kautaliya's Arthasastra of the 3rd Century BC refers to it and the famous Ajantha and Ellora paintings depict bananas on a number of panels. The sangam literature of the second century also refers to the use of banana during auspicious occasions. The fruit is highly nutritious and all part of the plant the leaves, stem, core of the stem, the flower and the roots are used for various purpose.  

Banana is grown in more than 30 countries and totally 686.67 lakh tonnes are produced annually.

1.4.1 Banana in India

The banana is the cheapest of fruits, with very high nutritional value, which is distributed throughout the country and is available all round the year. It has the potential to provide a balanced diet to the increasing population thanks to the excellent progress in the field of research.

No festival or auspicious occasion is complete without the presence of this fruit. It has multiple uses and gives high returns to the small holders. Banana is also called Kalpatharu.

In the last 50 years, there has been spectacular increase in the production of banana in the country, from just 1.5 million tonnes in 1950 to 12.3 million tonnes last year. During the same period, the per hectare production of 27.5 tonnes in some states has gone up to 52 tonnes per hectare. In Tamil Nadu, banana is cultivated in

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8 The Hindu English Daily dated 4 December 1996, P.5.
about 90,000 hectares and the average yield per hectare is about 28 tonnes. However in Tiruchi with the help of canal irrigation, basis and good marketing arrangements, the per hectare yield is over 40 tonnes.9

Banana contributes by 30 per cent to the country’s total fruit production. It is mainly grown in Gujarat, Maharashtra, Tamil Nadu, Andhra Pradesh, Karnataka and Kerala. It is cultivated in 3.96 lakh hectares in India with a total production of 10.4 million tonnes annually and average productivity of 27 tonnes a hectare. Productivity per hectare varies from 52 tonnes in Maharashtra to 15 tonnes in some parts of Northeast India. The total value of banana produced in the country is about Rs.3,300 crores.10

India Banana ranks first in production and second in area among the fruits grown in India. Eleven states accounted for the production of 10.46 million metric tonnes in 1996 from an area of 4,00,000 hectares. Tamil Nadu has the largest area under banana cultivation (59,005 hectares) followed by Maharashtra (52,021 hectares) whereas highest production is in Maharashtra (2.724 million tonnes) followed by Tamil Nadu (1.674 million tonnes). Highest yield recorded so far is 120 tonnes per hectare from Jalgaon district of Maharashtra.11

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In 1996-97 the area under Banana cultivation in India was 396200 hectares and the total production was 104,611 lakhtones.\textsuperscript{12}

1.5 IMPORTANCE OF PADDY

Paddy occupies a prominent place in Indian agriculture. The area under Paddy cultivation in the country is the largest, accounting for about one-third of the world's area under the crop. Next to China, India ranks second in terms of its production.\textsuperscript{13}

Paddy is cultivated in almost all the states of India. The major Paddy growing states are Punjab, Haryana, Tamil Nadu, Andhra Pradesh, Uttar Pradesh, Jammu and Kashmir, Madhya Pradesh, West Bengal, Orissa, Bihar, Karnataka and Kerala, which together account for 95 per cent of the total rice supply in the country.\textsuperscript{14}


Since Independence, the Indian government has been emphasizing the importance of agricultural development. The sector was given top priority in the First five-year Plan. The first approach to agricultural development was extensive cultivation. In the second plan also, agriculture was included in the priority sector. In spite of the numerous efforts made by the government to bridge the gap between demand and supply of food grains, attainment of self-sufficiency in food seemed a far cry. So, American experts from the Ford Foundation were invited by the Central Government in the latter half of the Second Five Year Plan to study and recommend measures to improve the agricultural situation in the country through increase in production and productivity. It recommended a selective and intensive approach among farmers and districts, which led to the winding up of the extensive programs. Based on the report, a new strategy called the Intensive Agricultural District Program (IADP) was launched in 1960-61. The IADP package included better seeds and implements, a balanced dose of fertilizers and pesticides and recommendations about proper soil and water management. Initially, the program was introduced in the best seven districts of the country. Later on, eight more districts were brought under the purview of the program in 1962-63. However, the Fourth Plan Draft found that all districts had not achieved the expected progress. Hence, in 1964-65, the program was extended to 114 districts and named as Intensive Agricultural Area Program (IAAP). It aimed at intensive agricultural development of a selected area.
The New Agricultural Strategy (NAS) was initiated in 1966. Under it, policies were formulated to utilize and promote high-yielding varieties of food grains in all districts selected under the Intensive Agricultural District Program and Intensive Agricultural Area Program schemes. The New Agricultural Strategy was first introduced in the kharif season of 1966. It also came to be known as the High-Yielding Varieties Program (HYVP).  

1.5.1 High Yielding Varieties Program (HYVP) and Paddy Production:

High Yielding Varieties Program aimed at increasing the productivity of land through scientific technology. The main driving force behind the HYVP was the assumption that agricultural productivity could be increased per acre, through fertile soil, good irrigation facilities with favourable climate and adequate supply of credits at proper time. 


The Central Rice Research Institute at Cuttack and rice Project Directorate at Hyderabad deal with the development of high yielding varieties of rice and introduction of new farm practices. At present, there are as many as 120 rice research stations in the country.\(^\text{17}\)

The impact of the strategy was however less spectacular on the production of rice – India’s number one food crop. Rice production doubled from 30.6 to 64.2 million tonnes during the same period.\(^\text{18}\)

According to Dharm Narain\(^\text{19}\) the impact of new technology on productivity of rice has been obscured to some extent by “clouding efforts” of “locational shift in rice acreage”.

\(^{17}\) H.K. Pande and K. Srinivasa Rao, op.cit.p.39


In 1984-85 the total area under HYVP remarkably increased to 55.42 million hectares, which accounted for 31.6 per cent of the gross cropped area.\textsuperscript{20}

The implementation of HYVP has brought about an increase in rice production. The area under rice increased from 30 million hectares in 1950-51 to 41 million hectares in 1984-85. The corresponding rises in production during these periods were 20 million tonnes and 50 million tonnes respectively. There has been a tremendous increase in yield from 668 kg. per hectare to 1425 kg. per hectare over the period.\textsuperscript{21}  This increase was the result of the expansion in supplies of inputs and extension of services to farmers and better farm management.


1.5.2 Paddy Production in Tamil Nadu

Agriculture is the primary sector of Tamil Nadu. Paddy has been the most important food crop, accounting for 54 per cent of its total area in the state. The yield of 2.5 tonnes per hectare of rice is among the highest in India. Tamil Nadu heads all other states in the number of pumpsets energised in the country. The state accounts for 7.46 per cent of the total area under paddy but contributes 13.75 per cent of the total rice production in the country.

The yield and production of paddy which were only 1050 kg. per hectare and 33.3 lakh tonnes in 1959-60 respectively rose to the level of 1899 kg. per hectare and 46.2 lakh tonnes in 1970-71. The yield exceeded 2.0 tonnes per hectare in 1978-79 and the production increased to 55.6 lakh tonnes. This phenomenal increase in the productivity and production of rice has been termed “Rice Revolution”.

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During 1983 – 84, the area under paddy and the production of paddy were 265684 hectares and 749 lakh tonnes respectively. The yield per hectare of paddy had increased from 2.82 tonnes in 1983 – 84 to 3.95 tonnes in 1996 – 97. In 1996 – 97, the area under paddy rose to 3118639 hectares and the production was 12318 lakh tonnes.  

1.6 STATEMENT OF THE PROBLEM

Since both banana and paddy come up in the same agro climatic conditions, they are substitute for each other. In the present study area, tank-fed irrigation is possible about eight months in a year and the remaining period irrigation is supplemented by well water. The cultivators of banana exploit tank-fed water optimum and when it is exhausted they utilize well water to save the standing crop of banana. At the same time, paddy cultivators prefer to depend wholly on tank-fed watering which is available maximum for two complete crops. And, it is observed among the paddy cultivators that they do not like to venture for a third crop of paddy absolutely depending on well watering. Normally, banana is an annual crop and duration of a paddy crop varies from 90 to 145 days. That is how the paddy cultivators go for two crops annually. In the light of the above explanation, without loss of generality, the study can assume that a single crop of banana could replace two crops of paddy in the study area.

The decision of the local farmers may not be optimal in accordance with standard economic criteria. The farmer has to weigh the relative advantages of the two crops; accordingly he may throw his lot behind any one of the crops or a combination of both. In the case of later, the farmer has to decide on the proportion of area to be put under each crop.

Since the farmers follow a rough and crude rule based on past experience their wrong choice may lead to loss of revenue for not only themselves but also a loss of yield to the nation as a whole. Therefore, this study shall aim at identifying various factors involved in the choice of the crops and suggest on the basis of the findings the economically profitable crop in the study area.

It is a matter of fact to be stated that in the previous decades the farmers in the study area used to cultivate paddy to a larger extent possible. Of late, this tradition is undergoing a drastic change. The area under paddy cultivation is dwindling and the area under banana cultivation is expanding. This prevailing backdrop has prompted the researcher, hailing from the native district of Thoothukudi, to analyze and project the factors responsible for this striking shift.

The area under banana cultivation is witnessing an upward trend day-by-day. Banana, being a commercial crop, stands as a favourite choice of farmers of the study area due to variety of factors like the availability of ready market, relatively free market (non-intervention by government), remunerative price, institutional financial
help, increasing consumption influenced by increasing per capita income and population, inter-cropping possibility, high rent for lands of banana cultivation, relatively low dependence on labour etc. Even, the value of land exposed to banana cultivation relatively shoots up these days.

Paddy, being a stable food crop, on the other hand, gives lack-luster attitude to the farmers to choose for a number of reasons like difficult task of labour mobilization at every stage of cultivation, difficulty in involving machines to reap the crop of small farmers, government intervention at production, procurement and distribution levels through controlled prices and restricted mobility of the crop, high consumption of water in production, menace of insects and pests etc.

Therefore, the study focuses to identify and analyze the actual factors responsible for farmers' preference of banana over paddy in the study area.

1.7 SCOPE OF THE STUDY

In these days agricultural programs for the uplift of rural agricultural people studies pertaining to the production of crops would help program planning. The scope of the study widens on the following lines.

In the study area the farmers raising both the crops, namely banana and paddy form the majority. Therefore, the present study probes into the reasons and the proportion of area put under the two different crops namely paddy and banana. It is a
study on the different reasons for shifting the area from paddy to banana and the
choice of the crop in this district. An in-depth study relating to the determinants of
yield farm size wise and resource - use efficiency will help the farmers to make
correct choice of the mix of factor inputs. Further, the study examines the cost, returns
and income distribution of size wise farmers producing banana and paddy. It would
help to minimize the cost as well as skewed distribution of net income in the study
area.

The Thoothukudi district is one among the districts in Tamil Nadu producing
more quantity of banana and paddy. Moreover the major crop is paddy and the agro
climatic conditions are more suitable for raising paddy. Again, the agriculturists that
are mainly driven by profit motive want to cultivate banana in the areas where paddy
is cultivated. Even though blackgram, bajra, chillies, corinder and banana are the
crops raised next to paddy in order, the paddy and banana are the twin crops that
could be produced in the same soil and under the same climatic conditions. Further, it
is also observed that the area under banana cultivation is increasing over time while
area under paddy is declining in this district. Therefore, a study of this kind will
throw light on the reasons for the decline in paddy cultivation and increase in banana
cultivation. These are the reasons for selecting the topic “A Comparative Study of
Production of Banana and Paddy in Thoothukudi District”.
1.8 OBJECTIVES OF THE STUDY

The specific objectives of the study are:

1. To examine the factors responsible for the shift of the area from paddy to banana.
2. To study the cost, returns and income distribution of banana and paddy with different farm groups.
3. To identify the factors determining the yield of banana and paddy.
4. To compare the resource-use efficiency of factor inputs of banana and paddy and
5. To study the yield gaps and constraints of yield gap.

1.9 HYPOTHESES:

The following null hypotheses are framed.

1. \( H_0 \): There is no structural difference between the large and small farms in both crops.
2. \( H_0 \): There is no significant difference between per acre net income of banana and paddy cultivation.
3. \( H_0 \): There is no significant difference between income inequality of banana and paddy cultivation.
4. \( H_0 \): There is no influence of farm size in the prevalence of income inequality.
1.10 LIMITATIONS OF THE STUDY

This is a micro level study confined to Thoothukudi district. Differences in natural and physical resources, agrarian structure, irrigation source, cropping pattern the varieties of crops cultivated, the pace and the level of adoption of the new technology etc., contribute to inter and intra-regional disparities in the gains realized by the farming community. The findings of the study cannot be generalized, as it is restricted to Thoothukudi district and probing a cross-section of the farming community.

In the present study, first crop of cultivation of banana has been taken into account and not ratoon crop. In case of Paddy both Rabi and Khariff crops are included. This facilitated comparison of variables of two crops chosen for the present study. Agricultural performance in each year largely depends on the monsoon, which may give high profits in one year and unexpected losses in another. The findings of this study will be based on the data limited to the agricultural year 1997 - 98. Further, the analysis confines itself to only two popular crops in the district.

Generally the farmers do not keep accounts and the information given by them from the memories have to be relied for calculations. However strenuous efforts will be taken to elicit accurate data from them. Since the study is unique as it deals with two types of crops and shifting of one crop by another, the available literature seems to be inadequate. However, the researcher has tried to fill up the gaps in literature to a satisfactory extent.
1.11 SCHEME OF WORK

The first chapter introduces the subject of the study, introduction, the importance of cropping pattern, the importance of banana and paddy, statement of the problem, scope of the study, objectives of the study, hypotheses, limitations of the study and scheme of work. Following the introductory chapter, the second chapter presents review of literature.

Chapter III describes the methodology, which includes choice of the study area, sampling technique, period of study, collection of data, tools of analysis and measurement of variables. Further, it discusses the profile of the study area and the characteristics of the sample farmers.

Chapter IV examines the factors responsible for shifting of area from paddy to banana in the study area.

Chapter V analyses the cost and returns structure of banana and paddy cultivation. It also deals with the nature of distribution of net income and the extent of inequalities in net income of banana and paddy cultivation.

Chapter VI identifies the determinants of yield, yield gap and yield constraints of both banana and paddy cultivation in the study area.

Chapter VII presents the summary of the findings of the study along with conclusion and offer suggestions based on the empirical results.