CHAPTER I

RESEARCH DESIGN
STATEMENT OF THE PROBLEM

Agriculture forms the backbone of the Indian economy and despite concerted industrialization in the last five decades, agriculture occupies a place of pride. Agriculture is the source of livelihood for over 70 per cent of population in the country. In a predominantly agriculture economy like India, different regions have their own contribution for an overall increase in agricultural output and employment. Though it is showing a declining trend in the planning era, the share of agriculture in the total gross national product still remains high.

India is a developing country and the striking feature of its economy is the predominance of rural sector. The prosperity of country depends on the prosperity of agriculture and allied occupations. Agriculture promotes economic development of the country. Economic development may be defined as transformation of an economy which is predominantly agriculture and agro-based industries. The economic history of many developed countries of the world like U.K, U.S.S.R, U.S.A, Germany and Japan etc., demonstrates that agriculture development helped and smoothened the process of industrial development by providing food, raw-material and employment. Historical records also clearly indicate that no country has attained take-off stage without first achieving a substantial gain in agricultural productivity.
Accordingly, the discovery of productive employment opportunities in the integrated rural development assumes vital importance in the economic development of India. For proper utilization of available man-power in rural areas, establishment of agro-based industrial activities is one of the most suitable solutions. The integrated agro-based industrial economy should be designed to embrace the entire development structure and process since agro-based industrial activities play vital role in providing productive employment to the rural manpower. These industries enjoy favourable linkages with agriculture and industry on the one hand and towns on the other. Hence, for rural development, small scale agro-base industries with low investment would be most beneficial compared to other schemes.

In order to promote and encourage the already established agro-based industries, the Government of India has been implementing several programme and projects like Drought Prone Area Programme (DPAP), Integrated Rural Development Programme (IRDP), S.C Action plans, S.T Action plans and B.C Action plans etc. Since the development of agriculture has obvious limitation in the areas, the farmers are encouraged to take up subsidiary occupation like animal husbandry, sheep rearing, poultry, horticulture and sericulture. Sericulture assumes greater importance in drought prone areas. Sericulture is the most suitable one in drought prone regions since it provides more
employment opportunities per acre of its cultivation and ensures greater income to the farmers.

The Problem to be Investigated

The problem to be investigated would cover demographic characteristics of sericulture industry and its sericulturists activities like mulberry cultivation, silk worm egg production, reeling cocoon production and marketing of cocoons. It will also deal with the causes responsible for taking economic activity, their level of working capital and earnings, share of contribution to the family income. Issues regarding to what extent they have been benefited by different poverty alleviation programmes.

The present investigation arose mainly on account of the necessity to assess the development of sericulture in a drought prone district like Anantapur and the conditions which forced the farmers of the district to take up mulberry cultivation in view of its opportunities and assured income to the farmers. The enquiry is also designed to find out the causative factors for the development of sericulture in the district.

REVIEW OF LITERATURE

The tremendous growth of sericulture in Andhra Pradesh has led to many research studies and surveys by various institutions. Some of these studies are general in nature and some
are scientific. In the following paragraphs an attempt it made to
give a brief account of the studies made so far on various aspects
of sericulture in India.

There are a number of book-length studies of sericulture.
D.L.Narayana's book 'Economics of Sericulture in Rayalaseema'
(1979) is an elaborate study of sericulture in the four
Rayalaseema districts, namely Kurnool, Cuddapah, Chittoor and
Anantapur of Andhra Pradesh. This study point out that
sericulture is mainly concentrated in the Chittoor and Anantapur
districts. It gives a detailed account of the economies of
sericulture, the problems of sericulture and also the scope for its
development.

D.V.Ramana's study 'Economics of Silk Industry in India
(1987) gives a picture of the sericulture activity during the
eighties, and covers both its agricultural side and industrial
aspects. The author discusses the role of sericulture in economic
development and the status of sericulture and silk industry in the
world. He also presents an analysis of the economics of sericulture
bringing out its importance in terms of income and employment
generation.

S.B.Shantha Raj Kumar in his work 'Silk Handloom
Industry in Andhra Pradesh' (1986) examines the pattern of work
and conditions of weavers, the process of manufacturing the warp
and weft etc. He also deals with the organisation of silk business from raw silk to the final product. He also offers some suggestions to better the lot of weavers.

Abdul Aziz and H.G.Hanumappa, in the book, 'Silk Industry, Problems and Prospects', attempt an overall study of the silk industry. It is a collection of essays by different scholars. In this book various operations and activities relating to sericulture and activities relating to sericulture and its development are discussed.

Sanjay Sinha's book, 'The Development of Indian Silk' gives a clear picture of sericulture in the Indian economy. The position of sericulture in India, the products and production systems, the policy and micro-economic issues in silk production were discussed in this book.

A.R.Raj Sinha and K.V.Govinda Raj in their book titled 'Employment and Income in Sericulture' present sericulture as a tool which helps to increase employment opportunities in rural economy. The role of sericulture in generating employment and income is discussed in very clear-cut manner. The creation of employment and income in silk reeling units is also dealt with.

'Sericulture for Rural Development' (1986) edited by Hanumappa comprises eleven papers presented by eminent professors and scholars, which highlight sericulture in Andhra
Pradesh right from mulberry cultivation down to research development and training activities. The book as a whole gives a clear picture of the role of sericulture in rural development.

Mahesh Nanavathy in his book 'Silk Production, Processing and Marketing' (1990)\textsuperscript{8} gives a clear picture of silk producing activities and a detailed scenario of the history of silk in the world.

P. Venkata Narasaiah in his book 'Sericulture in India' (1992)\textsuperscript{9} examines in detail the growth of sericulture in India. He points out that sericulture, which is an agro-based cottage industry, fits very well in India's rural structure, where agriculture continues to be the main industry. This book contributes significantly to a better understanding of the strengths and weaknesses of sericulture operations. It also offers some useful practical suggestions to overcome the various current problems and hindrances faced by the industry, and to ensure overall development.

The book 'Sericulture Society and Economy' (1993)\textsuperscript{10} edited by H.G. Hanumappa, is a volume of ten research papers by scholars engaged in studying the importance of sericulture to our economy and society. H.G. Hanumappa, who is the principal contributor to the volume, presents sericulture as an economically rewarding enterprise. He says that sericulture, consisting of several sets of activities, offers immense scope for social scientists
to explore the interface that sericulture has with economy and society. These essays offer an insight into the processes by which rural development is taking place. The book is divided into two sections. The first dealing with the impact of sericulture on output, income, energy and rural institutions. The second section consists of papers examining the socio-economic issues of the silk-reeling aspect of sericulture.

Dr. Mrs. G. Ganga and Dr. Mrs. J. Sulochana Chetty's book 'An Introduction to Sericulture' (1991) gives an overall idea of sericulture. In this book the authors discuss in detail the history of sericulture, the importance of sericulture and present a package of practices for mulberry cultivation. They also give an account of the disease and pests generally to which silk worms are prone. The physiological aspects of silk worms were also given in detail.

The book 'Sericulture and Development' (1993) edited by J. Acharya gives a succinct report of his field studies in sericulture in the southern states of Karnataka, Andhra Pradesh and Tamil Nadu. The essays cover the whole gamut of issues concerning sericulture and development, women and children, technology and extension pattern of sericulture in different agro-climatic zones, problems of sericulture under water scarcity etc.

In addition to the above books, there are number of papers by eminent scholars expressing their views favouring sericulture
as an effective tool for the eradication of poverty, unemployment and for raising the standard of living of the rural masses.

K. Veeraiah\textsuperscript{13} in his paper 'A Critical Look at the Mulberry Cultivation in Karnataka' gives a brief account of mulberry cultivation and cocoon production. The important factors that have contributed to the stability of the cocoon crop are discussed in this paper.

H.G. Hanumappa\textsuperscript{14} in his paper 'Economics of Sericulture micro-perspectives', studies in detail the parameters of economic viability of sericulture. According to him the extent of economic viability accomplished in a crop enterprise like that of mulberry cultivation followed by silkworm rearing depends on (i) increasing the productivity of land by the adoption of improved mulberry varieties and (ii) improved practices in silkworm rearing by opting for better and disease-free layings, maintaining hygienic conditions for rearing, etc.

T.N. Sonwalkar\textsuperscript{15}, Director, Central Silk Technological Research Institute, Bangalore, in his papers, "Factors Influencing Reeling, Efficiency", gives some reasons for the low productivity of cocoons. He also suggested some measures to overcome this problem. 'Problems and Prospects of Sericulture' K. Periswamy\textsuperscript{16} discusses many problems of sericulture, commencing from mulberry cultivation to cocoon production. He suggests some
techniques and measures to overcome these problems. He also
gives an account of the status of sericulture in China, the leading
country in mulberry silk production.

The Central Silk Board, Bangalore, the Central Sericulture
Research and Training Institute, Mysore and National Institute of
Rural Development, Hyderabad, have conducted many workshops,
seminars and surveys on sericulture development and published
their reports. These reports are very useful in formulating an idea
of the growth potential of sericulture in Andhra Pradesh.

**Objectives of the Study**

The following form the objectives of the study.

1. To study the status of sericulture in India in general and
   Andhra Pradesh in particular.
2. To evaluate the origin and growth of sericulture in
   Anantapur district.
3. To analyse the causative factors for the development of
   sericulture in Anantapur district.
4. To highlight the problems faced by sericulturists in
   Anantapur district.

**Methodology**

The present study is both descriptive and analytical and it is
based on secondary data.
Secondary data was collected from the annual budget reports of both Central and State Government, and annual reports of the Department of Sericulture, Andhra Pradesh and Anantapur, District Statistical Year Books from the Office of the Chief Planning Officer, Anantapur. The studies made by the Central Silk Board and Central Sericulture Research and Training Institute, Mysore were referred and secondary data were also drawn from the reports.

**Statistical Tools for Analysis**

The objectively collected data are classified and arranged in suitable tables. Appropriate statistical techniques are employed for analysis of data to draw meaningful conclusions in a scientific way. For this purpose the following simple statistical tools for analysis of data are applied.

1. **Mean**

   It is calculated by dividing the sum of total variables by number of observations. Symbolically it is expressed as follows:

   \[ \bar{X} = \frac{\sum X}{N} \]

2. **Standard Deviation**

   It measures the absolute variability of a distribution
3. Co-efficient of Variation

Co-efficient of Variation is applied to measure relative variance and compare the variability of two or more than two series. The variable for which co-efficient of variation is greater, is said to be more variable and on the other hand, variable for which co-efficient of variation is less, is said to be less variable.

Symbolically, it is denoted as C.V. and is obtained as follows:

\[
C.V. = \frac{\sigma}{\bar{X}} \times 100
\]

4. Growth Rate

To know the variation from period to period growth rates are applied. It is arrived as follows:

\[
\text{Growth Rate} = \frac{P_1 - P_o}{P_o} \times 100
\]

Where

- \( P_1 \) = Current period or year
- \( P_o \) = Current period or year

5. Percentages

Percentages are applied to measures rate or proportion per cent.
Significance of the Study

Sericulture industry is a cottage industry par excellence with its agricultural base, industrial superstructure and labour intensive nature. It is remarkable for its low investment, and quick and high returns, which is an ideal industry or enterprise which fits well into the socio-economic fabric of India. Sericulture is highly recommended by planners and administrators as one of the most effective tools for rural reconstruction and development of the rural society.

Sericulture is a labour intensive industry in all its phases, namely mulberry cultivation, silk worm rearing, silk reeling and other post-cocoon process such as twisting, dyeing, weaving, printing and finishing. So sericulture industry gives vast employment generation in rural areas, plays a vital role in reducing rural poverty and unemployment. It is one of the crop enterprises which are identified as most appropriate labour intensive household activities. It combines both agriculture and industry. It provides gainful employment not only at the stage of the production of mulberry leaves but also at the stage of the rearing of silk worms using the output of the former as an input of the latter. Sericulture has been playing a very important role in transforming the tradition bound agriculture into a modernized agriculture by intensive use of land and capital.
Out of the 5,76,000 villages in India, sericulture industry par excellence with its agricultural base, industrial superstructure and labour intensive nature. It is remarkable for its low investment, and quick and high returns, which it an ideal industry or enterprise which fits well into the socio-economic fabric of India. Sericulture is highly recommended by planners and administrators as one of the most effective tools for rural reconstruction and development of the rural society.

Before implementation of Drought Prone Area Programme (DPAP) in 1975, the area under mulberry was only 1.214 hectares. It has now increased to 46.801 thousand hectares in the year 2000\(^{17}\). The financial allocation for sericulture development in the district has been increasing every year. For instance, it increased from Rs.5.20 lakhs in 1975 to Rs.125.75 lakhs in 2000 that there was backward shift in financial allocation.

As a result of this rapid investment in sericulture practice in the district, naturally, some changes took place in the economic variables, mainly in the field of cost of production of cocoons. With the introduction of modern techniques in the sericulture, the demand for skilled labour has increased. High yielding variety of silk worm races have evolved as a result of continuous efforts of research institutions. Employment opportunities have been increasing and raising the standards of living of farmers who
undertook sericulture practice a decade ago, are now in a position to maintain decent living. In addition to this, the involvement of house labour has decreased. Infrastructure facilities have increased to a greater extent. In spite of allround progress in the sericulture activity in the district, marketing facilities are inadequate. Attracted by the fair prices of cocoons, the sericulturists usually go to the cocoon markets of Karnataka State for selling cocoons.
REFERENCES


17. Annual Reports from Deputy Director of Sericulture, Anantapur.