Planning has been one of the opted strategies of development in India since its inception and the long-term goal being improvement in the standard of living of the people. Since more than 70 per cent of the population live in rural India, the rural development can be regarded as a good indication of development of the country at large. Despite four decades of planned development, the situation in terms of poverty, unemployment, lack of access of poor to socio-economic amenities, has marginally changed in resource deficient regions such as drought prone areas, desert areas and hilly areas. The efforts to improve the quality of the resources and also to raise the quality of life of people in these regions covered a wide spectrum which include development of the resources, diffusion of (appropriate) technology and choice of an optimal combination of activities etc. Agriculture being the principle occupation to majority of the population in these resource deficient regions, the crop mix and the choice of technology should ensure not only stable incomes to the farm community but also provide employment on a large scale, on a sustainable basis. The introduction of sericulture in the drought prone areas can be seen in the back drop of the above situation.
For the development of the sericulture in drought prone areas, it is necessary to make a critical appraisal of the problems of sericulture cultivators more so for the small and marginal farmers and plan for relaxing these constraints in a phased manner so as to enable the farmers to have higher incomes on a sustainable basis. In most of these regions sericulture is being grown under irrigated conditions which implies that this crop is competing with other irrigated crops. In the choice of sericulture vis-a-vis food crops, farmer has to take decisions involving the food security system. The resource requirements for sericulture need to be assessed on a more systematic and comprehensive manner so as to evolve meaningful credit policies for the benefit of farm community in the adoption of sericulture. It has been noticed in the case of several food and commercial crops that the marketing channels/systems are functioning inefficiently and farmer has been deprived on various counts due to non-existence of an efficient marketing system. It has to be examined whether sericulture growers encounter any serious or qualitatively different types of problems in drought prone areas. The role of (other) delivery agents has to be studied in detail with a view to identify the inherent constraints and weaknesses of these agencies. Keeping this in view the present study aims at examining
the development prospects of sericulture in one of the drought prone districts of Andhra Pradesh viz., Anantapur.

About Sericulture:

Sericulture is an agro-based industry that is ideally suited to the socio-economic conditions of rural India. Mulberry, the food plant of silkworm, is a hardy plant; hence it enables the sericulturists to have a steady income even during severe drought conditions. Sericulture is a labour-intensive industry and offers vast scope for gainful employment round the year. It can be practiced under a wide range of conditions given reasonably good soil, satisfactory rainfall and not extreme variations in temperature and humidity.

Mulberry is a perennial crop with the minimum gestation period and requires modest investment. Four to five crops can be taken in a year both under irrigated and rainfed conditions and thus ensures periodic income over very short period.

There are four types of silkworms depending on host plants on which they thrive. These four types of silkworms produce 4 types of silk. These are mulberry, tasar, eri and muga silk. Out of these, mulberry silk worms can be reared mostly under controlled conditions as compared to other worms which thrive more on forest
trees. Production of raw silk in mulberry sector contributes 89% of total silk production. Mulberry sericulture is popular in Karnataka, West Bengal, Andhra Pradesh, Tamil Nadu, Jammu and Kashmir and Assam.

Objectives:
1. To provide an account of sericulture development in India, and the study area, in brief, during the last few decades;
2. To examine the relative importance of sericulture in farm economy in drought prone region;
3. To trace out the adoption of mulberry cultivation and silkworm rearing practices in different farm size categories with a view to identify the constraints at the farm level;
4. To ascertain the costs incurred at various stages during the first and second year of establishment of mulbery garden;
5. To examine the viability and profitability of sericulture and labour absorption capacity in the drought prone region;
6. To ascertain the impact of sericulture on the household economy; and
7. To assess the problems and prospects of sericulture development in a typical drought prone region.
Approach

To make a detailed assessment of the above mentioned specific objectives the following approach has been adopted. To appreciate the problems and prospects of sericulture and also its capability to make the household a viable unit of production in the context of a drought prone area the choice of the study area should be a drought prone district with reasonably good concentration of mulberry crop.

To review the sericulture development a three stage approach has been employed. In the first stage a comparative analysis of area, production and yield of cocoon in India vis-a-vis other major silk producing countries is made for some selected time points. The relative position of India and the change in its position in the global context is delineated. Further a brief account of the efforts made by the country for the development of sericulture during the various plan periods is provided so as to bring the nexus between the government initiatives and the trends in silk economy. At the second stage the progress of sericulture in Andhra Pradesh, the second largest producer of silk in India is studied. The share of different districts in area and production, the special efforts of government of Andhra Pradesh for the promotion of sericulture is looked into. In the third stage the sericulture development in one of the
drought prone districts of Andhra Pradesh is reviewed with special reference to trends in the area under sericulture, production and productivity of cocoons, the support system including infrastructure extension and financial services.

A socio-economic profile of the sample farmers is prepared to assess the importance of mulberry crop in the economy of farmers. These profiles will enable us to identify the factors responsible for the choice of sericulture vis-a-vis other competing crops.

**Hypothesis:**

A few hypotheses are tested: a) whether households with more number of working adults/un - or under - employment/higher literacy levels and preference for sericulture are related. b) The proposition that large farmers with better access to credit facilities will allocate more area under sericulture will also be examined. The basis for these above hypothesis is that sericulture is found to be labour intensive crop and households with more family labour may prefer to have employment throughout the year in drought prone region where labour utilisation is usually low. Further, the capital requirements are reported to be high and adoption of such crop in a drought prone region requires access to institutional or non-institutional finance. The earlier studies have revealed that the access to
credit markets is inequitous and the credit worthiness is related to size of holding.

Since the degree of adoption of farm practices depend on several factors such as awareness, attitudes, and the effectiveness of delivery system, data is collected and analysed about the extent of adoption of cultivation and rearing practices and the problems in adhering to the recommended package in various farmsize groups.

In the establishment of mulberry garden a number of activities are taken up in the initial year which are of non-recurring nature. Accordingly, the data on the major items of work and the associated costs for the first and second year is collected from the sample farmers using a structured schedule. In the design of the schedule, the schedules of the farm management studies are consulted. In working out the costs of cultivation the emphasis is laid on 'paid out costs'. The calculation of the costs of cultivation the unit of analysis is 'one acre farm size' irrespective of the actual acreage under mulberry for various farmers. Valuation is done at 1988-89 prices. Cultivation costs are also ascertained by imputing the family labour based on the wage rates paid to the hired labour in each farm size category for each operation. The economic viability of sericulture crop is judged on the basis of few indicators.
(i) net returns per acre; (ii) net returns per household; (iii) output cost ratio (Output-input ratio). Besides these the net surplus per acre from sericulture is compared with that of competing crops in the area. All those important crops which have been replaced by sericulture in the study villages (will) constitute the set of competing crops.

Labour input for each operation in various farm size categories is recorded. Care is taken to obtain the details on the use of family labour and hired labour. The utility of this critical input is to know to what extent the sericulture provides employment opportunities to farmers and agricultural labourers in drought prone areas and whether it acts as an insurance.

The impact of sericulture on the household economy is assessed in terms of: additional income accrued, savings/investment made (productive or otherwise), priorities in the household expenditure and change in the socio-economic status as perceived by sericulturist.

The problems of sericulture development are enumerated on the basis of collected information (seed availability, marketing of cocoons, price offered etc.) and prospects of sericulture development in drought prone areas will be examined which may help the policy maker in evolving certain policies and programmes for sustainable development of sericulture in drought prone areas.
Sampling Design:

For this study Anantapur District has been purposively chosen. It is one of the drought prone districts of Andhra Pradesh with heavy concentration of mulberry crop. For instance, the district accounts for 39 per cent of acreage under mulberry cultivation in the state and a share of 43 per cent in production during the year 1991-92. Four blocks namely Hindupur, Madakasira, Kadiri (East) and Kadiri (West) which account for over 60 per cent of the area under mulberry cultivation were chosen for further examination (Table 3.12). The department of sericulture at the district level maintains the records indicating the number of mulberry growers village wise. This list constitutes the sampling frame for the selection of villages. In all 20 villages were randomly selected with five villages from each block. (The list of sample villages is appended). A list of farmers who have started mulberry cultivation during the year 1987-88 was prepared in all the 20 villages and a random sample of 200 farmers was drawn from this list. Another list of farmers who have started growing mulberry prior to 1984-85 was prepared from the same set of villages and a random sample of 100 farmers was drawn to assess the effect of sericulture on the living standards. Care has been taken to retain
and the same proportion of different farm size categories in the two samples. Thus the sample selection is based on multi-stage sampling design with the first two stages being purposive in nature (guided by a few criteria) and the latter two stages being random.

Reference Period of the study:

The field study was conducted for this present exercise during the later part of 1989 and data relate to the crop years of 1987-88 and 1988-89. It is to be noted that though the average rainfall during the above reference years was higher than the normal rainfall by 5 per cent and 31 per cent respectively the distribution of rainfall was rather skewed. For instance most of the rainfall occurred during the south west monsoon in 1988-89 with more dry spells in other periods (see Table 2.7). As a result one can expect the mulberry production hence cocoon yield to be lower than the normal yield. Infact the number of harvests was also expected to be lower subject to the availability of adequate ground water.

Instrument of data collection:

To elicit information a schedule has been constructed and the data is collected by administering the schedule. The schedule covers 8 major aspects. Such as socio-economic background, cropping pattern, costs of cultivation and labour requirement for mulberry
costs of cultivation and labour requirement for mulberry and competing crops, mulberry cultivation and cocoon rearing practices, organisational support and socio-economic impact. The primary data is supplemented through collection of secondary data and informal discussions with farmers and officials of sericulture department.

**Analysis:**

The data collected were analysed using the simple statistical measures, like percentages, averages etc., in order to examine the objectives set for the study. Further, the respondents covered in the study were grouped into three land holding categories viz., Small (Up to 7.5 acres), Medium (7.51 - 15.00 acres) and large (15.01 and above) farmers. Wherever it was necessary for clear analysis the subject matter was also stratified as per the need.

**Chapterisation:**

A brief outline of the chapterisation plan of present study is as follows.

Chapter - 1: presents introduction, objectives, approach and sample design etc.

* The acreages mentioned correspond to the dry-land equivalents. One acre of wet land is equivalent to 2.0 acres of Dry land.
Chapter - 2 : mainly describes the district profile. This contains a detailed discussion on economic features of the district and the blocks therein. The secondary data collected pertaining to demography work force, irrigation, rainfall land use pattern infrastructure etc. are analysed and presented.

Chapter - 3 : presents the status of sericulture in the country as well as in the state and in study area. The growth of sericulture in terms of area, production and yield over a period of time is analysed and presented governmental efforts through plan periods, and infrastructure development is also presented.

Chapter - 4: Presents the socio-economic profile of the sample sericulture farmers. It mainly deals with size of the households, literacy, dwellings, holding size and irrigated area and cropping pattern of sample farmers.
Chapter - 5: Deals with recommended package of practices for mulberry cultivation and silk worm rearing along with the practices followed by the farmers in the field level situation. It also analyses the aspects relating to marketing of cocoon and financial assistance received by the farmer.

Chapter - 6: Concerns with income and employment generation per unit of land under mulberry. Advantages of sericulture over competing crops and also the utilisation of additional income generated through this venture by different categories of farmers.

Chapter - 7: Problems encountered by the farmers in pursuing sericulture is analysed and presented in this chapter; and

Chapter - 8: Presents a summary account of the results of the study undertaken.