It is evident from the preceding analysis that the sericulture in Anantapur district is showing rapid strides during the last fifteen years and small and marginal farmers are attracted towards these activity because of it's prospects. But the mulberry farmer is facing many problems in the operation of sericulture activity. Unless his problems are identified for taking necessary action, planned programme of development may not be successful and the growth which is targeted can not be achieved. In this context, an attempt is made to bring the factors into light which came in the way of sericulture development in Anantapur district.

PROBLEMS OF SERICULTURE:

The industry is facing many problems pertaining to its organisation, marketing, finance, technology and extension. We have given a list of problems and the respondents have been asked whether they are facing these problems or not. The problems expressed by the sample farmers are ranked and tabulated according to their severity in Table 6.1.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Problem</th>
<th>No. of respondents who have felt the problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-availability of layings</td>
<td>90</td>
</tr>
<tr>
<td>2</td>
<td>Shortage of Labour</td>
<td>80</td>
</tr>
<tr>
<td>3</td>
<td>Inadequate Finance for investment</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>Pests</td>
<td>80</td>
</tr>
<tr>
<td>5</td>
<td>Climatic Disturbances</td>
<td>70</td>
</tr>
<tr>
<td>6</td>
<td>Shortage of skilled workers</td>
<td>70</td>
</tr>
<tr>
<td>7</td>
<td>Shortage of rearing equipment</td>
<td>60</td>
</tr>
<tr>
<td>8</td>
<td>Fluctuations in Cocoon prices</td>
<td>60</td>
</tr>
<tr>
<td>9</td>
<td>Inadequate Market facilities</td>
<td>50</td>
</tr>
<tr>
<td>10</td>
<td>Securing extension officers advice</td>
<td>40</td>
</tr>
<tr>
<td>11</td>
<td>Transportation problem</td>
<td>20</td>
</tr>
<tr>
<td>12</td>
<td>Exploitation by the Middlemen</td>
<td>10</td>
</tr>
<tr>
<td>13</td>
<td>Shortage of pesticides</td>
<td>10</td>
</tr>
<tr>
<td>14</td>
<td>Inadequate demand for cocoons</td>
<td>90</td>
</tr>
</tbody>
</table>

Source: Field data.
All the ninety sample farmers expressed the non-availability of layings particularly during summer. Next in order, as many as eighty sample households felt the problem of labour shortage, lack of adequate finance for investment and frequent attack of pests. The problems of climatic hazards and shortage of skilled labour were experienced by seventy households. As many as sixty households felt the problem with regard to shortage of rearing equipment and fluctuations in cocoon prices. However, one positive feature that comes out from the study was that none of the ninety sample households faced the problem of lack of demand for their cocoons.

However from the above analysis it is clear that there is always demand for cocoons in the market and this is the main motivating factor for taking up sericulture inspite of several problems listed in the Table 6.1. A detailed analysis on the major problems is made in the following pages.

Non-availability of layings: Sericulturists generally buy layings (CBDFLs) from the Government grainages and licenced seed producers. The availability of these layings is adequate round the year except in summer season. Sometimes,
inadequacy, instability and poor quality of CBDFLs exposes the sericulturists to some troubles and lead to under utilization of available leaf. This makes sericulture less economical depending on the circumstances. Some sample farmers complained that the disease free layings, which are available at one rupee for each laying, are not free from disease and very often affected by diseases.

The grainage facilities already existing are inadequate and often fail to meet the demand. Normally for every 405 hectares, one grainage should be opened with production capacity of ten lakh layings per year. Though 26,952 hectares of land is under mulberry cultivation, there are only eleven grainages and out of which eight with ten lakh capacity and the three with high capacity of more than ten lakh. Hence the sericulturists obtain layings, either from nearby Karnataka state or from private grainages. To meet the growing demand, grainages for local race and foreign race have also to be setup. Moreover the Government has to take interest to introduce bivoltine layings for commercial rearing in this district, as no such effort has been made so far.
Shortage of Labour: Shortage of labour is another problem expressed by the respondents. In sericulture, mulberry cultivation can be taken up without any technical knowledge or special skills. Hence ordinary agricultural labourers are enough for this cultivation. But as many as 80 sample respondents expressed this problem. As mentioned earlier, in sericulture, an established one hectare mulberry garden provides 1,421 working days in a year. Inspite of its employment potential, mulberry growers are suffering from shortage of labour. The sample farmers expressed that it may be because of the reason that mulberry cultivation can be done even in small segments of land holdings. Hence agriculture labour who own less than 0.20 hectares are also cultivating mulberry and silkworm rearing and thereby creating labour shortage for big farmers. Here sericulture is playing a vital role by inducing not only small and marginal farmers but also agriculture labour for self-employment. The labour shortage in cultivating mulberry can be filled by introducing appropriate machinery in the mulberry fields on co-operative basis. The state government should help farmers to overcome this problem.
Inadequate Finance for Investment: Financial assistance also plays an important role in promoting mulberry cultivation and rearing of cocoons. The normal sericulturist is either a small farmer or a marginal farmer with limited means. As we know, the capital requirements for cultivating one hectare mulberry and silkworm rearing are definitely more than any other commercial crop or food crop, there is need to secure adequate finance for making higher investment in sericulture.

In our sample, sericulturists obtained institutional loans from banks (both Commercial and Regional Rural Banks) and Co-operatives. Banks have been sanctioning Rs. 12,500 towards unit cost of 0.40 hectares mulberry. Since this amount is inadequate, sericulturists have to borrow from other sources like friends, relatives and money lenders at high rate of interest. Another problem regarding financial assistance is that the financial institutions are too conservative to extend loans to sericulturists. Hence for an orderly development of sericulture, the institutional agencies should identify the special features and needs of sericulturists and the extent of finance required for fixed and working capital. Unless the institutional finance is streamlined, the potentialities of sericulture may not be realised fully.
Pests and Diseases: Mulberry cultivation, the first step in producing silk, is an easy job and involves no techniques or special knowledge. As per the opinion of the sample respondents during the cultivation of mulberry garden the intensity of pests is very little. Mulberry leaf is affected very rarely by leaf rust or leaf spot diseases. There are no such preventive measures followed to prevent this pests. The only thing is separating the pest affected leaves from the plant and destroying them.

The main and major operation of sericulture i.e., silkworm rearing needs much care and attention of the rearers. Silkworm rearing is a very delicate activity on the entire operation of silk production. Out of four rearings undertaken by the rearers in a year there may be one or two failures. Grosserie, Flacherie, Pebrine and Uzyfly are the enemies of silkworms and also silkworm rearers, which decrease the quantity and quality of cocoons. As a precautionary measure, silkworm rearers use nylon nets and the rearing equipment is properly cleaned with formaline. Uzycide also used two times for each rearing. Once Grosserie, Flacherie or Uzyfly attack silkworms, the diseased
silkworm should be destroyed immediately. There are no control measures to prevent this pests except conducting rearing operations under hygienic conditions.

Hence frequent occurance of pests is one of the major problems troubling the sericulturists and some new farmers who wanted to shift to sericulture also scared of these pests and hesitating to take up sericulture. So the Department of Sericulture should think over this problem and supply necessary knowledge and equipment to overcome this. Otherwise, the yield of good cocoons will gradually decrease on the one hand and on the other hand also affects the development potential of sericulture in the district.

**Climatic Disturbances**; Cool climate throughout the year is a prerequisite for silkworm rearing, cocoon production and high renditta. Climatic disturbances upset the realisation of sericulture productivity. It is advised to adopt in the hot tropical climate especially during summer, new techniques like the use of air coolers, dripping of water on the rearing sheds, arranging the rearing rooms under the shade of big trees etc. The adoption of these techniques though increases the cost of production marginally, but reduces adverse effects
on the quantity and quality of cocoons and income per hectare of mulberry farm. High leaf yield from mulberry garden located in good soil with irrigation facilities may compensate for the higher cost arising out of extreme summer climate. In any case climatic hazards add to the drudgery of silkworm rearing necessitating greater care and attention to be shown by the sericulturists. Hence other things being equal, hot climate is a deterrent for sericulture entrepreneurship. As sericulture is a labour-intensive enterprise, high wages that prevail in the agricultural growth centres also constitute an obstacle for sericulture expansion. Big farmers, though they possess better capacity to face the climatic hazards, may not like the increased managerial responsibility and time required to look after the sericulture. Small farmers lack resources to provide adequate facilities to counteract the hazard of severe heat during summer for silkworm rearing.

**Skilled Workers**: For any crop other than sericulture needs no special skill and techniques. This is the peculiar character of sericulture activity and the need for skilled workers is high only during the period of silkworm
rearing. As mentioned earlier, silkworm rearing is a very delicate activity and needs much care and attention. Silkworms at the infant stages look like ants and need more care in feeding them. Tender mulberry leaves are cut into finest pieces and these pieces can be spread on silkworms. Generally, silkworms take 25 to 28 days for obtaining complete growth and ready to spin cocoons. During this period, it undergoes several changes and very easily affected by pests. The requirement of skilled labour is very much essential to maintain timely feeding with required quantity and quality of leaves and also to look after them from pests. But as expressed by our sample sericulturists, 70 farmers are facing the shortage of skilled workers out of 90 sample households.

As sericulture is experiencing a progressive trend in the state and particularly in Anantapur district, the availability of skilled workers must be enhanced. Training should be given to those interested in taking up sericulture and also to the agriculture labour at district and mandal level centres. It, undoubtedly, increases the yield of cocoons and reduces unemployment to the rural population.
Rearing Equipment: The equipment required for silkworm rearing is of special type. It occupies important place in the entire sericulture activity though it is not used for any other purpose except silkworm rearing. For rearing 300 dfis, the equipment mentioned in Table 5.5. is very necessary. But 60 of our sample sericulturists expressed the problem with rearing equipment. The amount sanctioned by banks (₹.12,500 as unit cost) for obtaining rearing equipment including shed is inadequate. Hence majority of the silkworm rearers are hiring Chandrikas and other equipment according to their necessity. Hence the State Government should increase the loan amount per unit cost and necessary arrangements should be made to supply the rearing equipments at low costs.

Fluctuations in Cocoon Price: Steady and speedy growth of any industry is not possible without stable and minimum economic price for its products. Sericulture is not at all an exception from this. There are violent fluctuations in the prices of different products in sericulture industry. These fluctuations are mainly because of instability of cocoon crops, wide variations in the quality of
cocoons produced, absence of standardisation and quality control, poor and inadequate marketing facilities.

During rainy season, the quality of cocoons is poor and the yield is higher. So the supply of cocoons in the market is higher causing fluctuations in the price of cocoons. During the period of survey in 1989, it was found that the price of cocoons ranged between Rs.60 and Rs.80 per Kilogram of cocoons.

Moreover, sericulturists are forced to sell their cocoons at the prevailing price, as the moth emerges piercing out of the cocoon on the nineth or tenth day of the cocoon formation, rendering the cocoons useless for reeling. Hence the sericulturists are forced to sell the cocoons within that time at the price prevailing in the market undermining income. In addition to this the reelers also have the obligation to undertake reeling work immediately.

To obviate these pressures stifling units can be established by the Government or private entrepreneurs or both, so that the cocoons may be stream stifled making the worm die in the cocoon. The cocoons can be preserved for a long time extending over months. This type of processing and preservation helps the sericulturists to realise better prices. The stifling
technique facilities the creation of buffer stocks so as to maintain price stability. So steps have to be taken to develop the infrastructure for stifling and buffer stock maintenance.

The increase in the output of cocoons and raw silk should not be allowed to decrease the price of cocoons through manipulation by the middleman. Fixation of cocoon and raw silk floor price is an essential ingredient of a package policy necessary to sustain the growth of sericulture in the state.

Inadequate Market Facilities: As many as 50 sample households out of ninety expressed the problem of poor marketing facilities. Absence of proper marketing facilities constitute the prime obstacle for the orderly and rapid development of sericulture in the district. Sericulturists have to send the cocoons to the Karnataka state every time for disposal. In the existing practice, in Karnataka regulated markets, cocoons are purchased by dealers on an open auction system in a visual examination of the lots. Due regard to the quality of cocoons is not paid anywhere. The problems which sericulturists are facing in the Karnataka markets are mostly in the loss of sample cocoons supplied to the brokers, absence of proper
weighing and unnecessary deduction of certain percentage on the plea that the produce is of inferior quality. Moreover, the market costs vary from place to place depending on the distance and problems of transport.

At present there are five regulated markets in the district at Kadiri, Hindupur, Dharmavaram, Penukonda and Anantapur. Sericulturists from other mandals have to bring the cocoons to these markets facing so many difficulties of transportation, physical strain etc. Some of the rearers take the cocoons to Ramangara, Vijayapura and Siddaramgutta markets in Karnataka state to get fair price. So efficient marketing organisation either through regulated markets or private dealers is an important necessity to be tackled on priority basis in building up an appropriate infrastructure. Creation of marketing facilities economises the cost of cocoon transportation and eradicates the incidental difficulties. Moreover, efficient marketing organisation may help in arresting wide fluctuations in the price of cocoons by stabilising market trends. Sufficient number of local markets may stimulate reeling activity and thereby promotes silk industry, in the region so as to generate more income and employment in the district.
Advise from the Extension Officers: Securing advise from the Extension Officers is ranked as tenth item as 40 sample rearers are facing this problem. As sericulture is not a routine type of activity, it requires constant improvement based on research results conducted by the "Central Sericulture Research and Training Institute", Mysore, and other research agencies.

When the growth of sericulture is accelerated, more and more new sericulturists need scientific information, skill and knowledge of raising the mulberry garden and rearing silkworms. So sericulture demands a higher degree of skills and attention as compared to other crops like paddy, groundnut and sugarcane.

The Sericulture Department field officers are required to pay frequent visits to the sericulturists to guide them in their work, to check diseases as and when they are detected and to direct them to cultivate better variety of mulberry with proper application of manure and fertilizer and watering and to make them adopt cross breed races of silkworms and better methods of rearing. If the new sericulturists fail to utilise the extension services properly, they may lose interest in their new enterprise. Their failure, partial or full, may discourage other farmers
and upset the process of innovation in introducing the new enterprise. Speedy growth of sericulture postulates intensive extension service to facilitate healthy innovation.

It is estimated that the optimum area for an Assistant Inspector to provide extension service is 202.33 hectares, if it is geographically closer. Unfortunately the existing facilities are far from satisfactory. The survey conducted reveals that only 36.67 per cent of sericulturists could get access to the departmental extension service. Availability of adequate extension staff is one requirement and their dedicated service is another prerequisite. In any case, speedy growth of sericulture involving innovations on the part of farmers will not be feasible without the establishment of a competent extension service department which has to enlighten and advise the small farmers. So the sericulture departments has to build up competent extension cadre to assist sericulture farmers.

CONCLUSION:

As sericulture in the district is leading towards prosperity, the problems expressed by the sample farmers hinder the progress of sericulture. New
farmers may hesitate to take up this activity because of the these problems involved. Hence the Department of Sericulture should pay adequate attention to solve these problems with immediate effect. Otherwise, it will affect the growth of sericulture in the district and those who have already engaged in sericulture activity may withdraw and switchover to the cultivation of other crops.