Chapter-7

Problems and Prospects of Eri culture in Assam

7.1 Introduction

7.2 Problems associated with ericulture Proper

7.2.1 Non-Economic problems

7.2.1.1 Lack of Education among the Rearers

7.2.1.2 Attitude of the Society

7.2.2 Economic Problems of Eri culture Proper

7.2.2.1 Lack of Healthy Seeds

7.2.2.2 Shortage of Feeds of Silkworm

7.2.2.3 Financial Problem

7.2.2.4 Marketing Problem

7.2.2.5 Lack of capital

7.3 Problems Associated with Endi Textile industry

7.3.1 Non- Economic Problems

7.3.1.1 Lack of Education

7.3.1.2 Attitude of the Society

7.3.2 Economic Problems of Eri Silk Industry

7.3.2.1 Technological Improvement and Training

7.3.2.2 Marketing Problem

7.3.2.3 Financial Problem

7.4 Future Prospects of Eri culture in Assam
Chapter-7

Problems and Prospects of Ericulture in Assam

7.1. Introduction

Although ericulture has been an occupation of many rural Assamese people for long time, it is still at the subsistence level. People have not abandoned it, which indicates that it provides something to those engaged in it. Also it is not growing at a very fast rate, which is clear from the engagement of a small percentage of whole population or workers in Assam till now. Moreover, there is demand for the eri products in the markets, which is proved by the significant growth of market price of cocoon (exponentially at 5.73 per cent annual rate during 1980-81 to 2004-05) along with the rise in production and supply of cocoon (at 5.99 per cent annual exponential rate during 1980-81 to 2004-05) during last two and half decade. Ericulture in Assam however has been facing a large number of economic and non-economic problems that need to be addressed properly for the development of this sector. In this chapter an attempt is made to highlight the specific problems faced by the whole ericulture sector in Assam that is observed during the field survey. Here the problems are discussed in to two different parts.

a) Problems associated with ericulture proper, and

b) Problems associated with eri silk weaving.

Again, the problems of ericulture as well as weaving of silk are viewed from two different angles- (1) Non-economic and (2) Economic.
7.2. **Problems Associated with Ericulture Proper**

Problems associated with ericulture proper, may be classified as:

![Diagram: Problems of Ericulture Proper]

7.2.1 **Non-Economic Problems**

7.2.1.1 **Lack of Education among the Rearers**

Ericulture of Assam is mostly carried out by the illiterate or semiliterate persons. Not a single postgraduate or other degree holder is observed among the sample rearing families. Merely 0.36 per cent of the members of rearing families are graduates (table-7.1) and usually these educated youths do not come forward to take up this occupation rather they prefer even a class-IV job in nearby towns. Also there is a tendency of these few educated youths to migrate to the nearby towns or cities for any kind of jobs instead of seeking a self-employment opportunity in their village. That may be due to their higher opportunity cost and low profit in ericulture. Thus ericulture is mostly run by the illiterate people of the society, who have no idea about scientific as well as commercial process of rearing of silkworms. Also due to illiteracy and lack of information, the rearers cannot avail the opportunities given by the government to them from time to time. Of course, for encouraging the rearers and to provide necessary information, there are Seri-demonstrators, engaged by the state government, who would play important role in providing necessary assistance and disseminating relevant
information to the rearers. During field investigation, a large number of rearers reported that the demonstrators in their localities do not visit either to facilitate technical guidance or to inform them of the government’s schemes of assistance. Due to inferiority complex also, the uneducated or little educated rearers do not feel easy to meet the senior officers of the department for help and guidance or to file complaints against the demonstrator. A few rearers reported that the employees of ericulture department demand bribes against the release of sanctioned grants.

### Table-7.1
Sex wise Distribution of Sample Households According to their Educational Status during 2005-06

<table>
<thead>
<tr>
<th>Educational Status</th>
<th>Sarukhetri</th>
<th>Gobardhana</th>
<th>Jalah</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
</tr>
<tr>
<td>Illiterate</td>
<td>22</td>
<td>36</td>
<td>58 (19.46)</td>
<td>40</td>
</tr>
<tr>
<td>Primary</td>
<td>30</td>
<td>16</td>
<td>46 (15.98)</td>
<td>44</td>
</tr>
<tr>
<td>Up to VIII</td>
<td>16</td>
<td>32</td>
<td>48 (26.67)</td>
<td>24</td>
</tr>
<tr>
<td>HSLC Passed</td>
<td>38</td>
<td>32</td>
<td>70 (29.92)</td>
<td>46</td>
</tr>
<tr>
<td>HSSLC Passed</td>
<td>16</td>
<td>26</td>
<td>42 (33.87)</td>
<td>14</td>
</tr>
<tr>
<td>Graduate</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>02</td>
</tr>
</tbody>
</table>

| Source: | Compiled from field investigation. |
| Note:   | The figures in the parentheses represent percentages. |

In general, the rearers are found to have no interest in learning the improved technology on their own, which is due to the lack of exposure and entrepreneurship skill as well as scope of expansion of activities in the interior areas owing to other obstacles like financial capability, marketing, availability of loan etc. Moreover, due to their lack of knowledge the rearers and weavers are worst exploited by the middlemen and dishonest traders. It is observed that education at least increase their sales efficiency and help them getting relatively better price. The regression equation

\[
P_C = 328.58 - 5.69 \text{Broods}^* + 1.81 \text{Education}, \quad R^2 = 0.102
\]

(1.44) \quad (2.98)
shows that the price of eri cocoon (PC) obtained by the rearers is negatively related to the number of broods (level of output) and positively related to the education though not significantly.\(^1\) Hence some level of education helps the rearers earning more than those who do not have. Similar would be the case for the use of better technology.

7.2.1.2 Attitude of the Society

It is very difficult for the traditional eri rearers to be free from the customs, usages and conventions, which are intimately bound up with the cultural complexity in Assam. The illiterate and literates alike are not free from the prejudices against ericulture. In this modern commercial age some sections are still there who accord lower status in the society to the persons who have been engaged in rearing of silkworms. Though in other parts of the state a few rearers are found to belong to the general category of the society, in the sample collected from Barpeta all the rearers are found to belong to SC and ST. Here, 35 per cent of educated youth in the sample families reported that they hesitate to rear silkworm, as they dislike the emission of odour from the worms and cocoons and prefer government jobs or even dealing in endi-cloths. Therefore, it appears that besides other problems, for the fear of losing social status, the relatively rich traditional rearers have been leaving this occupation for the aforesaid reason. Many of the well to do families, who used to culture eri previously, has now stopped their practice and switched over to other more remunerative activities.

7.2.2 Economic Problems of Ericulture Proper

7.2.2.1 Lack of Healthy Seeds

The most serious and basic problem that ericulture in Assam face is the scarcity of quality and healthy seeds of standard breed for commercial rearing under natural

\(^1\) Here 1 score is provided to the families having at least one member matriculate and 0 for the other families. The symbol * indicates that the coefficient is significant at 5 per cent level of significance.
atmosphere. The government institutions have failed to supply required seeds to the rearers at proper time. In case of ericulture, 92.22 per cent of the rearers use their own produced seed year after year which is shown in table-7.2. But sometimes, the rearers have to collect untested seeds from the local co-rearers. Also during 2005-06, 6.11 per cent of the rearers had collected seeds from their co-rearers.

<table>
<thead>
<tr>
<th>Village</th>
<th>Household (Number)</th>
<th>Own Seeds</th>
<th>Co-rearers</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gohia</td>
<td>23</td>
<td>20 (86.96)</td>
<td>00</td>
<td>03 (13.04)</td>
</tr>
<tr>
<td>Agdia</td>
<td>10</td>
<td>09 (90.00)</td>
<td>01 (10.00)</td>
<td>00</td>
</tr>
<tr>
<td>Garartari</td>
<td>17</td>
<td>16 (94.12)</td>
<td>01 (5.88)</td>
<td>00</td>
</tr>
<tr>
<td>SubTotal</td>
<td>50</td>
<td>45 (90.00)</td>
<td>02 (4.00)</td>
<td>03 (6.00)</td>
</tr>
<tr>
<td>Bashbari</td>
<td>18</td>
<td>17 (94.44)</td>
<td>01 (5.66)</td>
<td>00</td>
</tr>
<tr>
<td>Nimua</td>
<td>32</td>
<td>30 (93.75)</td>
<td>02 (6.25)</td>
<td>00</td>
</tr>
<tr>
<td>Khusrabari</td>
<td>10</td>
<td>10 (100)</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>SubTotal</td>
<td>60</td>
<td>57 (95.00)</td>
<td>03 (5.00)</td>
<td>00</td>
</tr>
<tr>
<td>Salbari</td>
<td>14</td>
<td>13 (92.86)</td>
<td>01 (7.14)</td>
<td>00</td>
</tr>
<tr>
<td>Hahchara</td>
<td>21</td>
<td>19 (90.47)</td>
<td>02 (9.53)</td>
<td>00</td>
</tr>
<tr>
<td>Bhuyapara</td>
<td>35</td>
<td>32 (91.43)</td>
<td>03 (8.57)</td>
<td>00</td>
</tr>
<tr>
<td>Sub Total</td>
<td>70</td>
<td>64 (91.43)</td>
<td>06 (8.57)</td>
<td>00</td>
</tr>
<tr>
<td>Grand Total</td>
<td>180</td>
<td>166 (92.22)</td>
<td>11 (6.11)</td>
<td>03 (1.67)</td>
</tr>
</tbody>
</table>

Source: Compiled from field investigation.
Note: The figures in the parentheses represent percentages.

The government of Assam has already established 26 Eri Seed Grainages covering 183.04 hectares of land (2005-06) in various parts of Assam till date for the supply of healthy seeds and overall development of the culture. Out of this total land allocated to ESGs, only 124.69 hectares of land are under scientific eri feed plantation. The price charged by these (ESG) is Rs.1000 per kilogram of seed (Directorate of Sericulture, Government of Assam, 2005-06). But there is not even a single Eri Seed Grainages in the entire Barpeta district. Of course, some rearers of Gahia reported that sometimes government official supplies seed to them. Their contribution is only 1.67 per cent of the total requirement of the rearers. Here, 21.66 per cent of the sample households are found to suffer from shortage of healthy disease free seeds. The
activities of these 26 centres operating in different places are also not satisfactory and the target of production of adequate quality seeds has never been met. In order to meet the deficiency, sometimes different units of the sericulture department collect seed cocoons of all varieties from the rearers of certain localities and distribute such untested seeds among the rearers of other localities and hence, output is not obtained with full potential.

7.2.2.2 Shortage of Feeds of Silkworm

Shortage of eri feeds is another important problem faced by the rearers who are interested to engage in the rearing activities. It has been observed in chapter-4 that in the state as a whole, production of eri cocoon has grown at much faster rate than the eri feed plantation during 1980-81 to 2004-05. Also production per hectare of plantation has been declining during that period. It is an indication of availability of eri feed leaves in lesser quantity from the increased land under plantation. Moreover, the growth of feed leaves does not match (even if productivity of land remain same) with the growth of requirement of feed leaves, which is an important input of eri cocoon production. The root cause of shortage of feeds or lesser growth of area under plantation is pressure of population on wasteland for crop cultivation, recurring floods, erosion of river, lack of protective measures from the government to preserve naturally grown food plants. William Robinson observed in the mid-nineteenth century that eri plant was the only plant, which was cultivated purposefully, and there was scarcely a 

raiat who has not a small patch of it near his house, or on the edges of his field (Robinson, 1841). But now such plantation has become a rarity. During field investigation, not even a single-family was found who has grown eri plant systematically and scientifically. Some times they sow seed in their homestead.

At present, the state government provides food leaves to eri rearers through Eri Concentration Centres (ECCs). In Assam 94 ECCs have been operating in different
parts of the state covering 655.28 hectares of land. Only 370.66 hectares (i.e. 56.56 per cent) of land of the total allocated land are used for eri feed plantation (2005-06). In Barpeta district, three ECCs were established, one at Hahchara in 1975 with 6.80 hectares of land, another at Nimua in 1976 with 7.80 hectares of land and another at Bajegaon Pathar in 1979 with 12.90 hectares of land to cater the needs of leaves of eri rearers. In the year 2005-06, out of total 26.60 hectares of land allocated for these ECCs, only 14.97 hectares (i.e.56.79 per cent) of land were utilised for eri feed plantation (Directorate of Sericulture, Government of Assam, 2005-06). But not even a single plant of castor is found at the time of field survey in Nimua ECC where there is a high demand for leaves. Thus the government institutions have also failed to optimise the use of areas under cultivation of host plants.

The distribution of sample families facing scarcity of leaves is shown in table-7.5. During 2005-06, 95.56 per cent of the sample households of Barpeta district reported to suffer from scarcity of food leaves significantly. Though maximum six broods can be practiced in a year, the rearers could culture on an average only 2.44 broods due to lack of leaves. Collections of leaves by the rearers from outside raises transport cost and thus total cost of production as well as supply price of cocoon and endi products, which in turn adversely affects its demand.

Even though ericulture is a part time occupation, the rearers still have much time to spend for the rearing of silkworm, provided there are sufficient feed leaves available for the purpose. Also, those rearers are mostly marginal farmers and hence on their own they cannot expand cultivation much and have to depend on the naturally grown feed leaves. The big landowners also are not interested to grow and sell eri feed plants, as it is less remunerative. But if castor plant is cultivated for castor seed (for producing castor oil as happened in other parts of the country) then leaves will be a joint product and it will definitely be a highly remunerative one.
Although plantation of eri host plant is not done at the individual level in the Barpeta district, plantation is observed in other districts of Assam like Udalguri, Kamrup, Kokrajar etc. However with the plantation of host plant cost, revenue and profit from a kilogram of cocoon production changes and a comparison of information on that with those who collect leaves from wildly grown areas in Barpeta (sample collected from Barpeta) is presented in the table-7.3.

It is observed that if plantation of host plant is done by the rearers themselves and also they use separate rearing house in stead of their residential place, cost of production increases by several times. However, with regular supply of feed leaves, production of cocoon as well as pupae also increases. Increase in production helps them to attract better price for cocoon and pupae (the traders visit these places regularly as they can get cocoon in bulks and quality will be better). Hence revenue earned is also found to be much higher if all the pupae are sold at the reasonable price, which may be even higher than the revenue from cocoon (as observed here).

Table-7.3
Cost, Revenue and Profit per Kg of Eri Cocoon Production with and without Plantation of Host Plant during 2005-06.

<table>
<thead>
<tr>
<th>Items of Cost</th>
<th>Cost, Revenue and Profit per kg of Cocoon Production *With Plantation (Rs)</th>
<th>Without Plantation (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Plantation</td>
<td>172.76</td>
<td>00</td>
</tr>
<tr>
<td>2. Fixed Cost</td>
<td>126.60</td>
<td>2.73</td>
</tr>
<tr>
<td>(a) Rearing house</td>
<td>100.00</td>
<td>00</td>
</tr>
<tr>
<td>(b) Appliances Cost</td>
<td>26.60</td>
<td>2.73</td>
</tr>
<tr>
<td>3. Wages</td>
<td>175.00</td>
<td>146.41</td>
</tr>
<tr>
<td>4. Others</td>
<td>32.50</td>
<td>12.85 (Transport Cost)</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>506.87</strong></td>
<td><strong>161.99</strong></td>
</tr>
<tr>
<td><em>Revenue</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue from Cocoon</td>
<td>280.00</td>
<td>209.26</td>
</tr>
<tr>
<td>Revenue from Pupae</td>
<td>350.00</td>
<td>81.10</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td><strong>630.00</strong></td>
<td><strong>290.36</strong></td>
</tr>
<tr>
<td>Net Profit</td>
<td>123.13</td>
<td>128.37</td>
</tr>
</tbody>
</table>

Sources: (1) Compiled from Field Survey.  
(2) *Office of the Directorate, Central Silk Board (North-Eastern Region), Guwahati.

Here it is observed that profit per kg of cocoon in case of those in other areas who cultivate feed leaves and maintain separate house for culturing eri cocoon is
slightly lower than that of rearers in Barpeta who collect leaves from nature. Although average profit per kg of cocoon is higher in case of naturally collected leaves, there is a constraint in the expansion of their activity (average 2.44 broods). If host plants are cultivated, more broods (maximum six) can be harvested and thus the rearers can generate more profit. Hence cultivation of feed leaves is not uneconomic if it is done scientifically as well as commercially.

Here however one point is to be noted that the rearers are at present mostly price takers as they are unorganised in most of the cases. But they receive different price for their eri cocoon not only due to differences in the quality of output but also due to their location variation, lack of information, differences in bargaining skill, lack of financial strength etc. Hence it is most likely that they would try to adjust their cost through judicious use of capital and labour (technology) in order to maintain the profit rate. However, from the sample data we observe very poor correlation between the average cost and the price of cocoon which is only 0.0899 (insignificant). Also the log-log regression equation of average cost on the price is

\[
\ln AC = 3.95 + 0.194 \ln PC \\
(0.255), \quad R^2 = 0.0033.
\]

Where, AC represents average cost of eri cocoon and PC is the price of cocoon that varies across the rearers (though they are price takers they are discriminated by the middlemen buyers). Here both the coefficient as well as coefficient of determination is highly insignificant. It indicates that the rearers are constrained by their technological and capital constraints.

### 7.2.2.3 Financial Problem

Finance is the main pre-requisite of every productive operation. According to Mathur (1979) every problem of the small producer concerning production or raw
materials, quality or marketing is ultimately a financial one. The very success of this tiny sector thus also depends on the availability of finance. Although meagre investment is required, the problem of finance in ericulture cannot be underestimated. Because, it is clear from the field investigation that the rearers have to depend basically on their own source of finance and many of them do not have adequate financial strength not only for the expansion of activity but also for the adoption of upgraded technology. During 2005-06, 85.56 per cent of the sample households found to depend only on their own finance (table-7.4). Negligible amount of government grant was available only to the few selected rearers that constitute of only 6.12 per cent of the total rearers. But such grant is also very small in quantity in comparison to the entire rearing expenditure, which is shown in chapter-8.

As most of the rearers are poor, they cannot undertake large scale rearing on commercial basis. The role of moneylender in financing ericulture is also negligible. They provide finance to merely 3.87 per cent of all the rearers. The most important drawback of borrowing from moneylender is the high rate of interest. The rate of interest varies between 60 to 120 per cent per year. Therefore, instead of borrowing from the moneylender, the rearers prefer to abstain from expanding the activity. One of the reasons for the high interest rate charged by the moneylender is of course the insecurity of loan repayment by these vulnerable rearers. The loan taken from the relatives of the rearers is also insignificant. Only 3.3 per cent of the sample rearers received loan from their near relatives. It is because of the deplorable pecuniary condition of their relatives. From the field investigation, it is understood that the ericulture sector suffers from the paucity of institutional finance for its development. The commercial banks in Assam are not interested in financing ericulturists because the

\[2\] Normally, relatives of the poor rearers are also poor and hence all the relatives have common problem and cannot greatly support each other.
rearers cannot offer sufficient land as collateral security against loans. During field investigation, not a single rearer was found who received loan from bank during 2005-06 or ever before. Thus deplorable financial condition of the rearers on the one hand and high rate of interest charged by moneylenders and negligence of commercial banks force the rearers to operate their activities on very small scale. Among the sample families, 22.78 per cent have reported to suffer from financial crunch even at their existing level of production. For the overall development of ericulture in Assam, provision of institutional finance at low rate of interest is thus an essential condition.

Table-7.4
Distribution of Sample Rearing Families According to Their Sources of Finance during 2005-06

<table>
<thead>
<tr>
<th>Block</th>
<th>Village</th>
<th>Household (Number)</th>
<th>Own Fund</th>
<th>Relatives</th>
<th>Money lender</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bashbari</td>
<td>Gohia</td>
<td>23</td>
<td>18 (78.26)</td>
<td>02 (8.69)</td>
<td>01 (4.35)</td>
<td>02 (8.69)</td>
</tr>
<tr>
<td></td>
<td>Agdia</td>
<td>10</td>
<td>09 (90.00)</td>
<td>01 (10.00)</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td></td>
<td>Garartari</td>
<td>17</td>
<td>16 (94.12)</td>
<td>01 (5.88)</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>50</td>
<td>45 (90.00)</td>
<td>02 (4.00)</td>
<td>01 (2.00)</td>
<td>02 (4.00)</td>
</tr>
<tr>
<td>Bashbari</td>
<td>Bashbari</td>
<td>18</td>
<td>15 (83.33)</td>
<td>01 (5.56)</td>
<td>01 (5.56)</td>
<td>01 (5.56)</td>
</tr>
<tr>
<td></td>
<td>Nimua</td>
<td>32</td>
<td>27 (84.37)</td>
<td>02 (6.25)</td>
<td>01 (3.12)</td>
<td>02 (6.25)</td>
</tr>
<tr>
<td></td>
<td>Khusrabari</td>
<td>10</td>
<td>09 (90.00)</td>
<td>01 (10.00)</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>60</td>
<td>51 (85.00)</td>
<td>04 (6.67)</td>
<td>02 (3.33)</td>
<td>03 (5.00)</td>
</tr>
<tr>
<td>Jalal</td>
<td>Salbari</td>
<td>14</td>
<td>12 (85.72)</td>
<td>00</td>
<td>00</td>
<td>02 (14.28)</td>
</tr>
<tr>
<td></td>
<td>Hahchara</td>
<td>21</td>
<td>19 (90.47)</td>
<td>01 (4.76)</td>
<td>01 (4.76)</td>
<td>00</td>
</tr>
<tr>
<td></td>
<td>Bhuyapara</td>
<td>35</td>
<td>27 (77.14)</td>
<td>01 (2.86)</td>
<td>03 (8.57)</td>
<td>04 (11.43)</td>
</tr>
<tr>
<td></td>
<td>Sub Total</td>
<td>70</td>
<td>58 (82.85)</td>
<td>02 (2.86)</td>
<td>04 (5.72)</td>
<td>06 (8.57)</td>
</tr>
<tr>
<td></td>
<td>Grand Total</td>
<td>180</td>
<td>154 (85.56)</td>
<td>06 (3.34)</td>
<td>07 (3.89)</td>
<td>11 (6.12)</td>
</tr>
</tbody>
</table>

Source: Compiled from field survey.

7.2.2.4 Marketing Problem

Till now market for eri cocoon has been a buyers’ market. The middlemen traders purchase the cocoon from the rearers moving from door to door. There is no organised market for the transaction of eri cocoon. Therefore, the rearers have to sell their cocoon to the traders at the price offered by them. Here, 28.34 per cent of the sample families have reported that they are compelled to sell at meagre price as very
few buyers visit them, which is also due to their low scale of production and remoteness as well as lack of transport, communication or information (table-

The Assam Spun Silk Mill Ltd was established primarily to help the eri rearers by utilising the bulk production of eri cocoons in Assam. The Spun Silk Mills were supposed to create demand for the eri cocoon so that the rearers could get the respectable price. However, Dutta (1988) had observed that even 25 per cent of the total production of eri cocoon was not utilised by the mills at that time. The mills together had consumed about 2.50 per cent to 4.15 per cent of the total output of eri cocoons during 1985-86 to 1986-87. However, these spun silk mills were utilising the large quantity of eri cocoons produced in Assam during the nineteen seventies. The consumption was about 38.33 per cent of the produced cocoon in the year 1971-72 (Chowdhury, 1982). It is known from a reliable source that a large quantity of eri cocoons were taken outside Assam (Bhagalpur, Bihar and some other places) by middleman traders through railway every year, but related data are not available in this regard. At present the spun mill is totally closed and hence not purchasing any cocoon from the rearers. The irregular production and supply of eri cocoon by the rearers throughout the year is one of the important reasons for its closure. However, steps have been taken again by the state Government for the establishment of two such mills in Bodo land areas for the revival of spinning activity and development of ericulture in the area. If these two spun mills come up in near future, it will certainly help the rearers of the area to receive good price of their reared cocoon.

It is generally alleged that the activities of the middlemen traders of cocoon should be controlled, as they exploit the innocent rearers and deprive them from getting a reasonable return on their investment. Sometime middlemen traders make advances to the known rearers before the commencement of actual rearing and compel the rearers to sell cocoon to them and in the process easily take the chance to exploit the rearers by
offering a low contract price. However the role-played by the middlemen traders is indispensable for the rearers as the Government authorised persons do not reach to the interior areas for the collection of cocoon. The middlemen collect the cocoons from the rearers of remote areas, from where collection of cocoons by the government officials is difficult at the present set up.

Moreover, the procurement price of government of eri cocoon is even much lower than the price offered by the middlemen traders. Where the Government procurement price is Rs.80/ per kg of cocoon, the price offered by the middlemen ranges between Rs.185/ to Rs.340/ . Moreover, the rearers get cash on the spot from the middlemen traders after selling the cocoons. Whereas, if the rearers sell the cocoons to government agencies, they have to wait for long time or run after the concerned officials to get their dues. As the government procurement price is much below the market price there is no urge by the middlemen to increase the rate as they can easily buy at their existing price, which is of curse increasing over time but not at the desired rate. Yet, the rearers can get relatively more price if they are organised (through Self Help Groups, Co-operatives etc.) and a major part of the profit that is taken away by the middlemen in the form of interest for advanced loan can also be controlled.

The middlemen collect the cocoon regularly and supply to the spinners, otherwise the spinners cum weavers would fail to get the supply of cocoons regularly. Of course, some of the middlemen collect and store the cocoons at the time of harvesting and release the same gradually. In this process, they have to bear the associated risks of damage and thus the rearers are relieved from the burden of storing and risk. That is another reason for keeping big margin in the process and offer lower price to the rearers.

From the above observations, it becomes apparent that the middlemen also have been playing some constructive role in keeping both ericulture and weaving industry in
spite of their exploitative role as well. Their exploitative role can be reduced by the upward revision of Government procurement price and extension of financial and other helps by the government or organisation of rearers.

7.2.2.5 Lack of capital

Two types of capital namely fixed and working are required for rearing eri worms. In ericulture, fixed capital consists of plantation ground, rearing house, and plantation equipments (like hoe, dao etc), rearing and grainage equipments (like microscope, ant locks, wooden rearing stands, chopping knife, chopping board, bamboo trays, cocoonage trays, leaf chambers etc). The fixed capital represents the assets bought for long term or permanent use. The working capital is required to continue the process of rearing activities. Usually, it consists of costs of seeds, labour charges in maintenance of plantation and rearing (if employed), fertilisers of plant, disinfections materials etc.

For rearing of eri silkworm, a minimum amount of Rs.10,000/- is required for the construction of thatched house, measuring about 4.5 * 3.5 metres, which can be used for a long period. But it is very difficult to assess the exact value of rearing house or the rearing equipments accurately due to variation in the cost of construction of the rearing house and rearing equipments. In case of fixed assets, the cost of each item varies from Rs.100 to Rs.50000. But in case of modern scientific rearing house, the investment in rearing as well as grainage equipments may exceed even Rs.100000. It is worth mentioning that the implements used in rearing have much price variation across the state. Of course, the longevity of those equipments usually remains in between 2 to 5 years, although some rearing equipments like saja stand etc. can be used for comparatively longer period of time than the others.
Due to poverty of the rearers, they cannot afford to scientific rearing and as a result do not obtain desired results. Cent per cent of sample rearing families practise this culture in their dwelling house, which is not at all scientific. The poor rearers are unable to construct a separate rearing house even of a simple type without government assistance. During the tenth plan, only 3807 eri rearing families in Assam of which 83 rearing families in Barpeta district received Rs.10000 each from the government as financial assistance for the construction of eri rearing house (Directorate of Sericulture, Government of Assam, 2007). This is a minor positive step taken by the government. But the number of beneficiaries is very less as compared to the total rearing families in Assam as a whole and Barpeta district in particular.

Table 7.5
Distribution of Sample Households According to the Reported Problems Faced by them in Rearing Silkworm for Different Reasons during 2005-06

<table>
<thead>
<tr>
<th>Block</th>
<th>Village</th>
<th>Household (Number)</th>
<th>Worm Seed</th>
<th>Worm Feed</th>
<th>Finance</th>
<th>Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gohia</td>
<td>23</td>
<td>05 (21.74)</td>
<td>22 (95.65)</td>
<td>07 (30.44)</td>
<td>08 (34.78)</td>
<td></td>
</tr>
<tr>
<td>Agdia</td>
<td>10</td>
<td>02 (20.00)</td>
<td>10 (100)</td>
<td>03 (30.00)</td>
<td>02 (20.00)</td>
<td></td>
</tr>
<tr>
<td>Garartari</td>
<td>17</td>
<td>04 (23.53)</td>
<td>16 (94.12)</td>
<td>05 (29.41)</td>
<td>04 (23.53)</td>
<td></td>
</tr>
<tr>
<td>SubTotal</td>
<td>50</td>
<td>11 (22.00)</td>
<td>48 (96.00)</td>
<td>15 (30.00)</td>
<td>14 (28.00)</td>
<td></td>
</tr>
<tr>
<td>Bashbari</td>
<td>18</td>
<td>04 (22.22)</td>
<td>18 (100)</td>
<td>06 (33.33)</td>
<td>06 (33.33)</td>
<td></td>
</tr>
<tr>
<td>Nimua</td>
<td>32</td>
<td>08 (25.00)</td>
<td>29 (90.63)</td>
<td>08 (25.00)</td>
<td>12 (37.5)</td>
<td></td>
</tr>
<tr>
<td>Khusrabari</td>
<td>10</td>
<td>02 (20.00)</td>
<td>10 (100)</td>
<td>02 (20.00)</td>
<td>04 (40.00)</td>
<td></td>
</tr>
<tr>
<td>SubTotal</td>
<td>60</td>
<td>14 (23.33)</td>
<td>57 (95.00)</td>
<td>16 (26.67)</td>
<td>22 (36.67)</td>
<td></td>
</tr>
<tr>
<td>Salbari</td>
<td>14</td>
<td>03 (21.43)</td>
<td>14 (100)</td>
<td>01 (7.14)</td>
<td>02 (14.28)</td>
<td></td>
</tr>
<tr>
<td>Habchara</td>
<td>21</td>
<td>05 (23.81)</td>
<td>17 (80.95)</td>
<td>04 (19.05)</td>
<td>06 (28.57)</td>
<td></td>
</tr>
<tr>
<td>Bhuyapara</td>
<td>35</td>
<td>06 (17.14)</td>
<td>35 (100)</td>
<td>05 (14.28)</td>
<td>07 (20.00)</td>
<td></td>
</tr>
<tr>
<td>Sub Total</td>
<td>70</td>
<td>14 (20.00)</td>
<td>67 (95.72)</td>
<td>10 (14.28)</td>
<td>15 (21.43)</td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>180</td>
<td>39 (21.66)</td>
<td>172 (95.56)</td>
<td>41 (22.78)</td>
<td>51 (28.34)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled from Field Investigation.
Note: The figures in the parentheses represent percentages.

The working capital is essential to meet the expenses on seed, labour (if hired labour is used), leaves, cleaning and disinfections materials etc. But, due to the lack of working capital (as shown in table-7.5 in connection with worm seed, feed, finance and marketing) many of the rearers cannot undertake rearing of silkworms in proper time.
and sometimes avoid the same. Thus, majority of the rearers have been continuing ericulture as a tradition only without having much commercial prospect.

7.3 Problems Associated with Endi Textile industry

Like ericulture proper, the endi textile industry of Assam has some basic problems of its own, which needs proper elucidation and solutions. Like ericulture proper, the problem faced by this spinning and weaving sector can also be categorised in to economic and non-economic parts as shown below-

Problems in Endi Textile Industry

Non-Economic

Lack of Education  Attitude of the society

Economic

Lack of

- Raw Materials
- Finance
- Marketing
- Technological
- Training

7.3.1. Non- Economic Problems

7.3.1.1 Lack of Education

In Assam, endi textile industry is also an occupation of the rural poor and most of them are illiterate. Due to illiteracy, the majority of weavers do not get information as regards to application of modern techniques of production, advanced training, availability of financial grant from government and other financial institutions time to time, information about the market (both domestic and foreign), etc. Above all, lack of education of the weavers affects the progress of the eri silk industry. A few of the sample eri cocoon rearers are found to be the weavers who are relatively better off in
terms of wealth but not very rich and in other respects they belong to the similar category like that of non-weavers.

### 7.3.1.2 Attitude of the Society

In Assam, the professional weavers of fabrics have been known as *Tanties* (belong to traditional Tantubai community whose traditional occupation has been handloom weaving). The present day Barpeta was known as *Tatikuchi* in the past, which means a place of weavers. Publicly, every one praises and honours the silk weavers. But, in reality, it is not so. It is an open secret that educated Assamese women today; particularly the urban womenfolk do not like weaving. Although the Handloom and Textile Department, Government of Assam claims that the numbers of handlooms are increasing. But, field investigation shows that many people with the improvement of the economic conditions abandoned endi-textiles. Also, many of the new generation of women in rural areas are not interested in weaving due to availability of mill made clothes at cheaper price. Most of them only rear worms for home consumption and to sell cocoons. A few weavers prepare endi cloths either for home consumption or for gifts. There is a lack of commercial look among most of the weavers. Therefore, eri silk weaving is confined to certain pockets in rural areas of Assam.

### 7.3.2 Economic Problems of Eri Silk Industry

#### 7.3.2.1 Technological Improvement and Training

Improvement of technology and advanced training to artisans, are both correlated as advanced technology helps in large-scale production and reduction in per unit cost of production on the one hand and improvement in quality of the products on the other hand. Conversely, training also makes artisans more efficient and capable of using modern equipments and thus ensures quality production.
Still now, primitive and outdated techniques of production are used in the eri silk industry involving a great deal of drudgery and fatigue in spinning and weaving, and thus the returns obtained by the artisans are not commensurate with labour and time involved. Therefore, the majority of present generation youth does not prefer these activities as a source of livelihood due to involvement of drudgery with meagre income\(^3\). During field survey, not even a single modern spinning machines like CSTRI Spinning machine is observed in the study area. All the spinners were found to use primitive Takli whose productivity is very less (only 50 grams of yarn in eight hours whereas CSTRI yields 200 to 250 grams of yarn during the same time). Similarly, in weaving there is mass use of traditional throw shuttle whose productivity is much less than that of fly shuttle or power loom. The productivity of fly shuttle loom is two and half times higher than that of throw shuttle loom. Moreover, productivity of power loom is six to eight times higher than that of fly shuttle (Choudhury, \emph{op cit}).

In order to face stiff competition from mill made synthetic and other fabrics, technological improvement is urgently necessary in eri silk industry. It is also necessary for increasing production as well as for reduction in cost of production, improvement in the quality of fabrics and diversification of products. It is worth recalling that power looms met the export demands for silk in Japan since 1890 (Allen, 1946). In India silk weaving (specifically mulberry silk) power looms are mainly operated in Karnataka, Kashmir and Andhra Pradesh. These looms usually produce standard fabrics for export purpose. But in Assam till today, it has not yet been possible to use power looms in the field of eri silk weaving due to lack of infrastructure facilities such as pre and post processing facilities like electricity, dyeing, printing, etc. It appears that through conversion of handlooms or semi automatic looms, the production will increase in

physical terms and quality will also improve. But it might not be possible to meet the individual tastes for fabrics by power loom designs. But this does not imply that this “ancient and time honoured” handloom should remain a handloom. Power Loom Enquiry Committee (1964), headed by Ashok Mehta also suggested the replacement of handlooms by power looms in a phased manner to meet the additional requirement of cloth for the increased demand in the country. It is expected that the installation of power looms in this manner will not create unemployment among the workers connected with weaving, rather they will simply switch over from a low productive sector to more productive as well as remunerative sector and what is more important, the high income generated by this sector may attract others and encourage occupational mobility among the rural population. But still now we do not observe any significant move in that direction in the state of Assam and nothing in Barpeta.

Simultaneously, steps should be taken to convert the existing primitive spinning units into modern units in phased manner as far as possible. In order to compete with other organisations in the same industry, production of cheap, but quality yarn is essential. Modernisation of spinning and weaving activities will increase the production of quality fabrics with substantial reduction in average cost. The resultant fall in prices will augment silk fabric market by creating additional demand from the masses. Hence, the time, energy and money spent by the handloom development agencies may be diverted towards installation of power-loods and other modern facilities related to handloom sector in such commercial zones. Besides schemes may be taken for conversion of some handloom to power-lood side by side with up-gradation of the handloom to automatic pick up loom, which is likely to assist diversification of products like weaving of synthetic fibre along with silk yarn etc.

The Khadi and Village Industries committee had also emphasised that all the traditional industries including khadi should be development oriented through inclusion
of a programme for “progressive improvement of technique”, and it should be adopted with the objective of bringing such industries to a viable level. It was clearly advocated in the committee’s report that no encouragement by way of training facilities and other assistance should be given to more persons to enter those traditional industries which used relatively inferior techniques⁴, as such encouragement would increase the number of unemployed in the future and saddle the government with the task of maintaining at “huge cost a large number of workers in technologically backward industries”⁵.

Technological improvement in silk weaving would be meaningless, if no simultaneous steps are taken to train up the traditional weavers with advanced technique of fabric production. Therefore, before application of advanced technology, training should be provided in advance as far as possible. For this, artisans should be motivated and trained to embrace the new technology on silk fabric production. At present, the Assam Textile Institute, Guwahati provides Diploma and Certificate courses in different processes of textile technology including training on power-loom operation. But for the overall development of the silk weaving sector, and as a part of modernisation of the looms, the Government of Assam may take necessary measures and initiative for short term courses of advanced training facilities of dyeing, designing, weaving, etc to the traditional weavers’ who have been associated with this silk industry since ancient time. Therefore, extensive training facilities on silk weaving in power loom and semi automatic looms should be organised in the above institute. In this regard, the Directorate of Handloom and Textiles may also extend its activities.

Thus, immediate transformation of silk handlooms to power loom or semi automatic looms may not be feasible. First of all, proper steps must be taken to increase the production of cocoons and yarn; otherwise power looms in silk weaving will turn

out to be a "white elephant". Power loom requires heavy investment with high percentage of risk and as such may be initially less lucrative to private entrepreneurs. Hence, the Government should play a pivotal role in the establishment of power-looms under the rural development programme.

7.3.2.2 Marketing Problem

The terminology of market is not confined to sales only; rather it involves a comprehensive management philosophy to develop the right product for a specific group of customer in terms of functions, design, quality and price (Dutta and Ganguly, 1979). Marketing is consumer oriented. Marketing always starts with the customer and ends with the customer. In other words, the process of marketing begins with the analysis of market needs and ends with the satisfying those needs of the target market (Rao, et al, 2004). Marketing requirements undergo changes with economic development, technological changes, change in purchasing power and tastes and habits of the customers.

In India, during 1950s, the problem of marketing was not so much acute as it is today. Whatever goods and services were produced could easily be sold depending upon the economy of the consumers regardless of quality or prices (Dutta and Ganguly, 1979). It was more or less a seller's market. But due to planned efforts of our national Government, a large number of industries—both in the public and private sectors gradually come up. In addition to this, the Government's restrictive import policy and emphasis on cottage and small scale industries led to emergence of large number of products produced indigenously since the second five year plan.

However, with the phenomenal change in technology and consumer's tastes and habits as well as rising competition, the small-scale enterprises had to face marketing problem (Sarma, 1979). Nangia (1979) also observed marketing as the most serious
handicap of small unit at that time. Later various research studies also revealed that marketing of the products was one of the major reasons behind high incidence of sickness of small-scale industrial units of the North-East region. Endi textile is not an exceptional one.

In Assam, marketing facilities for non-organised weaver is not a satisfactory one. In most cases, the weavers sell their endi products to the middlemen traders at a very low price. Moreover, the weavers also sell in the local market and seasonal market held during some festivals like Bihu, Durga Puja etc. But the price received by these unorganised weavers for their products is very less as compared to the organised weavers as observed here also in case of spinners and weavers of Hahchara village within Jalal block who are well organised under SHG earn higher price for their products than those of other sample villages (chapter-4). Moreover, organised eri cloth weavers can sell their products to ARTFED who is in fact acting as an intermediary in selling endi cloths both in domestic and international market. Apart from government, some co-operatives and SHGs are also engaged in eri fabric marketing. Roje Eshanshali Co-operative Society Ltd set up on 11th September, 1996 headed by Mrs Malati Rani Narzary of Salakhati, Kokrajhar has been exporting various kinds of eri cloths like shawl, upholstery, saris, shirts, and scarf etc at a fair price to various states of India and even to abroad. Similarly, one commercial eri-weaving centre called “Indi Luo Enterprise” operating in Kokrajhar is also selling its products in different places of India.

In the post independence period both the central and state government have been undertaking various measures for the promotion and betterment of marketing of endi products. (i) Setting up of Assam Weavers and Artisans Co-operative Federation Limited (ARTFED) by Government of Assam was a milestone to promote sales of endi cloths. ARTFED has 54 sales outlets called “Jagaran” operating in different parts of
Assam. There are three Jagarans at Barpeta, Barpeta Road and Pathsala in the entire Barpeta district. Apart from Assam, ARTFED is also engaged in selling endi cloths in Kolkata, Indore, Jaipur, Kanpur and New Delhi. There is a purchase committee who has the responsibility to purchase silk fabrics from the weavers, organised under co-operatives. However, the committee does not purchase any product from unorganised weavers and thus the unorganised weavers are still deprived of better marketing facilities.

(ii) Assam Khadi and Village Industries Board (AKVIB) constituted in 1953 have a separate marketing section for the purpose of marketing of products produced in khadi and village industries. The marketing section procures items from khadi and village industries including silk fabrics and supplies those to 58 sales outlets called Khadi Gramodyog Bhandars (KGB) throughout Assam. Apart from those, there is another KGB called Khadi Gramodyog Bhaban located in Kolkata. The AKVIB also holds exhibitions to promote its sales in different parts of Assam from time to time and participates in the exhibition held outside Assam. But till today, it has not participated in any exhibitions held abroad.

(iii) Assam Government Marketing Corporation limited (AGMC established in 1969) also looks after marketing and development of handlooms, handicrafts and cottage industries' products. The AGMC provides marketing facility to the artisans and weavers through six sales emporia called “Pragjyotica”- Assam Emporium. There are other three emporia outside the state. These emporia initially used to supply raw silk to the unorganised weavers and purchase finished products from them at the going market price. But in many cases the artisans did not return the finished products to the AGMC that led to collapse of many emporia.

(iv) North-Eastern Handicrafts and Handloom Development Corporation Limited (NEHHDC set up in 1977) was formed with the objective to promote and
develop the handicraft and handloom of the entire North-Eastern region. Its task is to promote marketing of handicrafts and handloom products through different emporium named “Purbashree” located in Shillong, Kolkata, Guwahati, Mumbai, Chennai and Bangalore. The corporation has a policy of outright purchase of marketable finished items from artisans, weavers, SHGs and cooperatives etc. But from an internal reliable source of corporation it is learned that in many cases marketable items are purchased from the contractors (who collects from the weavers) at a higher price rather than actual weaver that deprives the actual weavers from getting respectable benefit. Thus, it has failed to meet the goal for which it was set up.

The problem of marketing of handloom fabrics (both silk and non-silk) in the North-Eastern region is also evident from the observation made by the Planning Commission, which states marketing activity is not well-organised and is limited to the establishment of sales outlet in Delhi and state head quarters. There is no direct link between the organisations (sales outlet) and the weaving community. From the point of view of the buyers also, now the emporia are not in a position to take bulk orders, as they have in turn to depend on a disorganised supply system. In this connection the State Evaluation Committee also stated that there was a serious problem of marketing of handloom products. The weaver was not able to dispose of their products in the absence of variation in designs and assured marketing facilities. Various government institutions relating to the production and marketing of silk fabrics as well as private entrepreneurs should diversify their products. More stress should be given in the production of designed and high quality garments with the help of professional fashion designers. Along with that attempts should be taken to capture foreign markets on the basis of information provided by Indian Silk Export Promotion Council (ISEPC),

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7 State Evaluation Committee (1976), Government of Assam, Weaving Industries in India, May, p-44.
Mumbai. Moreover, fairs and exhibitions of quality products should be held at national and international level. This process will definitely raise the income of the weavers and exporters of silk. Besides, there is a bright scope to blend eri fabrics with polyester fibres in the state, which will help to reduce cost of production and capture market. As a policy of sales promotion, the fabric producing organisations should undertake market research in different states of India as well as abroad about the nature of demand of the concerned people. For imparting advanced training on designing and embroidery, some centres should be established in commercial silk weaving zones. Also for the improvement in production and quality of fabrics all the government institutions, silk weaving co-operatives and commercial weavers should join their hands to initiate development programmes in order to meet demand from both internal and external markets.

7.3.2.3 Financial Problem

For the success of any industrial unit, finance is the first requisite. In case of small production units like endi textile handloom units, there is a special need for the arrangement of credit as the producers by themselves cannot manage very little of it. Any industrial unit needs three types of credit, viz. short, medium as well as long term credit. Short period loan is required for day-to-day operations of the business. In case of eri silk weaving, short period loans are required to purchase raw materials like cocoons and yarn, for the payment of wages and salaries to hired labour for spinning and weaving purpose etc. In short, it represents that part of productive capital, which is required during the cycle of operation in business often known as accounting year (Khandelwal, 1985). Along with that endi textile needs long term and medium term credit for fixed capital like purchase of land, construction of weaving house, modern weaving and spinning machinery, furniture etc.
But there is a dearth of credit in endi textile industry. Generally the weaver class belongs to poorer section of the society. These informal weavers cannot construct a separate house for weaving purpose, which cost around Rs.15000. Therefore, almost all the weavers put their handloom (Sal) in the veranda of their home. Most of them even cannot purchase spinning and weaving appliances. The average price of one simple handloom (Sal) with spinning appliances is about Rs.7000. Along with that one wooden frame is also necessary which cost around Rs.2000. Most of the interested rearers cannot pursue their weaving activity because of lack of fund to purchase handloom and frame. Therefore they sell cocoon to the traders visit their areas to buy products. Only 33.13 per cent of the produced cocoons by the sample rearers are used in spinning and weaving (chapter-4). The source of credit is very much limited in rural areas. Majority of them depend on their self-finance and a few of them sometimes take loans from their relatives and friends. Although all the major commercial banks along with Regional Rural Banks known as Assam Gramin Bikas Bank and Co-Operative banks are operating in Assam, weavers are unable to get the benefits of this institutional credit.

During field survey the poor and needy weavers and entrepreneurs reported that they are unable to obtain institutional finance because of the tedious and lengthy procedure of sanctioning loans and rigid terms and conditions. Besides, as Baishya (1986) observed, they have to prepare and submit scheme and project report, obtain non-encumbrance and valuation certificates from land records officers for collateral security, search for guarantor of loan etc, and what is more, the value of land offered as security falls far short of the norms insisted on by the institutions for the required amount of advance. Still now, the condition has not changed. It was also found that some of the entrepreneurs or needy owners of looms were not aware of the availability of institutional finance due to the information gap. Therefore, not even single person associated with endi textile in the whole Barpeta district has received financial
assistance from any banking institute. Hence, lack of finance at proper time is a handicap of endi textile industries in Assam.

Thus, the supply of adequate and timely credit at a reasonably low rate of interest is the need of the hour for the success of endi-textiles in Assam. Among the institutions, the most important agency can be the cooperatives or Self-Help Group. Besides government institutions, commercial banks and Regional Rural Banks can also come forward to meet the financial requirements of this sector.

7.4. Future Prospects of Eriiculture in Assam

From the overall discussion, it is clear that ericulture in Assam (both ericulture proper and eri silk weaving) has been subject to several economic and non-economic problems. The rearers have been suffering from the lack of good quality seeds, feeds, poor financial condition etc. Also lack of technological development and marketing infrastructure are other obstacles of development of ericulture proper as well as endi textile industries in the state. In spite of these problems, people of Assam have been pursuing this occupation from where many of the rural people get their subsistence. Despite low earning from ericulture (mainly due to low scale production), due to availability of wildly grown castor (feed plants) in many areas to a certain extent and lack or suitable alternative opportunities the rural people especially the women have been continuing to be engaged in such occupation.

That is why P. Joy Oomen (2004) pointed out “Eriiculture may soon become the new catch word among traditional sericulturists as well as farmers looking forward to enhance their agricultural earnings as there is a demand for eri silk (silk produced by Philosamia ricini) in the international market”. While addressing a seminar for the progressive farmers he highlighted the advantages of "ericulture", and said
"eri silk commanded better prices than mulberry silk in the market. In fact, it could be taken up by women in a small space to raise family income. The prospects for "eri silk" were good as its supply in the market was not adequate as far as India was concerned" (The Hindu, 2004).

One advantage of this occupation is that many of these people can engage themselves during their leisure time and work as part time with small investment at the traditional technology. Moreover, through inheritance, they have acquired efficiency in rearing as well as spinning and weaving at that level of technology. However, looking at the profitability compared to the level of investment and capacity of employment generation, there are ample scopes for the growth of this sector. But if the sector is to flourish and make it more profitable and compete with the mill made similar products, full-scale engagement of the people is necessary. That must be supported by the adequate technological development.

**Diagram-7.1**

![Average Revenue and Average Cost in Eri Cocoon Production Among the Sample Households](image)

From the diagram-7.1 it is observed that the average revenue curve is almost a horizontal straight line and there are four distinct layers of average cost curves corresponding to different (one, two, three and four) broods harvested by different
sample families. The average revenue curve always lies above the average cost curve across all levels of activities and hence there is substantial positive profit. But from the diagram it is clear that the rate of profit margin is more in case of smaller rearers. However, the scope of profitability rises with the level of output of eri cocoon, as the average revenue curve is almost horizontal and average cost curve is downward sloping and convex to the origin and becomes asymptotic after certain level of output and that varies for different size of farms. Below are given the level of performance and the scope of the rearers to enhance their production and thus earning even at the existence level of technology.

**Diagram-7.2**

Average Revenue and Average Cost Curves of the Rarers who Practise One Brood of Eri cocoon in a Year

\[
y = -9.1376x^2 + 61.887x + 294.46 \\
R^2 = 0.2535
\]

\[
y = 12.732x^2 - 136.45x + 453.36 \\
R^2 = 0.7856
\]

**Diagram-7.3**

Average Revenue and Average Cost Curves of the Rarers who Practise Two Broods of Eri cocoon in a Year

\[
y = 2.0075x^2 - 26.366x + 476.76 \\
R^2 = 0.0878
\]

\[
y = 4.5321x^2 - 80.576x + 466.67 \\
R^2 = 0.9336
\]
Diagram-7.4

Average Revenue and Average Cost Curves of the Rearers who Practise Three Broods of Eri Cocoon in a Year

\[ y = -3.4906x^2 + 54.172x + 181.32 \]
\[ R^2 = 0.1515 \]

\[ y = 5.258x^2 - 108.66x + 709.96 \]
\[ R^2 = 0.9294 \]

Table-7.6

Brood-wise Actual, Profit Maximising and Lowest Possible Average Cost Output of Eri Cocoon and Scope of Increasing Output & Profit as Obtained from the Estimated Result by Using Sample Data

<table>
<thead>
<tr>
<th>No. of Broods</th>
<th>Average Yearly Output of Cocoon per Family (Kg)</th>
<th>Average Yearly Profit Maximising Output of Cocoon per Family (Kg)</th>
<th>Average Yearly Output of Cocoon per Family Corresponding to Lowest Average Cost (Kg)</th>
<th>Scope of Percentage Increase in Yearly Total Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.428</td>
<td>5.615</td>
<td>5.359</td>
<td>63.80</td>
</tr>
<tr>
<td>2</td>
<td>5.920</td>
<td>14.400</td>
<td>8.890</td>
<td>143.24</td>
</tr>
<tr>
<td>3</td>
<td>8.038</td>
<td>10.488</td>
<td>10.330</td>
<td>29.98</td>
</tr>
<tr>
<td>4</td>
<td>11.597</td>
<td>24.460</td>
<td>20.500</td>
<td>110.92</td>
</tr>
</tbody>
</table>

Note: Output corresponding to lowest average cost and maximum profit is estimated by minimising best-fitted average cost function and maximising the best-fitted profit function as obtained from the sample data.
Diagrams-7.2 to 7.5 present the average revenue and average cost functions of different groups of rearers harvesting one to four broods of eri cocoon in a year. The results of table-7.6 show that at various levels the rearers produce well below their efficient level of productions. In order to maximise profit each producer at various levels can increase production on an average from 30 per cent to about 143 per cent in a year at the existing level of technology and even without increasing the number of broods harvested by each of them. Thereby, they can increase their level of profit ranging from about 32 per cent to 168 per cent approximately. Those who rear two broods, seriously under utilise their capacity. The under-utilisation in some cases may be due to the shortage of caster leaves (as mentioned earlier), which may be grown under the initiative of the rearers or may be supplied by others. If the feed leaves are cultivated then there is a chance of rise in cost of production (also shown earlier) of the extra unit of output and thus the average cost curve would shift upward. But still there is a profit as shown earlier and hence total profit will certainly increase if not exactly to the extent as estimated here. The rate of profit may even increase if better technology is used to reduce unit cost of production and the activity is carried on a larger scale that would generate economies of scale (as seen here an average rearer at each level is producing at the point on the downward falling portion of the average cost curve).

It is also observed from table-7.3 that even if castor is cultivated scientifically and marketing of main and by-products is done properly, profit rate would not reduce much rather it enhances the scope to increase aggregate profit through the rise in gross production. Therefore, to meet the shortages of feed leaves, systematic plantation of host plant may be advocated. If plantation of host plant (castor) is done scientifically, the rearers can have regular and adequate supply of leaves and thus can practise and harvest maximum possible broods, successively every year as full time occupation and earn good income (as shown in table-7.3). Apart from that, produced seeds of castor
can be used for the production of castor oil, which will definitely raise the income of
the rearers. Though marketing of cocoon is found to be an important problem to the
rearers, if the proposed two spun mills in Assam are materialised it will surely raise the
demand for eri cocoon and help them to have remunerative price for their product in
near future. Moreover, to eliminate the role of middleman traders, co-operatives, SHGs
may be formed. This process will raise the bargaining strength of the rearers cum
weavers and help them to have respectable price (as observed in case of the rearers of
Hahchara village who have formed an SHG and able to get higher price as shown in
chapter-4 and also Roje Eshanshali Co-operative Society Ltd of Kokrajhar has been
successful in removing the plight of the rearers to a certain extent). Government
marketing personnel (cocoon marketing Inspectors for cocoon) and agencies like
ARTFED; AGMC etc (for eri fabric marketing) can be re-activated.

Moreover, only a section of the rearers (who are relatively well off) practise
spinning and weaving and earn relatively more income. Due to poverty and lack of
finance many of them in spite of having intension cannot adopt weaving. Here, 22.78
per cent of the sample households have been suffering from inadequate finance.
Because of poverty only 33.13 per cent of the produced cocoon are sold to the visiting
rearers at a through away price. Entrepreneurship can be promoted through the
arrangement of modern spinning and weaving machines along with proper training to
these rearers. It may help growth of rearing of cocoon and weaving of fabric
simultaneously. The government of Assam may adopt a policy of persuading the banks
and insurance companies through guarantee etc for financing ericulture in a liberal
manner but not freely. Md Yunus has already proved that financing small investors is
not altogether wastage. Formation of Self-Help Groups or Cooperative can help in
receiving soft loans easily and also improve the chance of repayment of loan. Thus,
there is ample scope for the progress of ericulture provided the obstacles are removed from it and that may also attract new educated youths in this culture.

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