

# Contribution of Sericulture to Women's Income in Assam -A Case Study in Goalpara District of Assam, India

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## I. INTRODUCTION

Income is the most crucial index for accelerating economic growth and development in any meaningful developmental strategy. In the Indian socio-economic context, income generation assumes great significance for women, especially rural women. Women constitute more than fifty per cent of the world's population, one third of the labour force, and perform nearly two thirds of all working hours. Women's income in a family is of paramount importance for nutritional, economic and educational upliftment of the family. Changing times has brought new interests and responsibilities into a women's life and it is now admitted that women's income is indispensable not only for survival of individual families but for maintenance of wider socio-economic system (Batish and Naurial, 2003).

In fact, women in general are found to bear double burden in the development process – one on the domestic front and the other on the economic front. It is found that women are engaged in work when other members of the family are enjoying rest (Gupta and Gupta, 1987). The continuous increase in prices has also pushed women to income generating activities within or outside the household to maintain an economically sound family. It is found that India is the home to 12.7 crore working women and 90 per cent of them are working in the unorganized sector (Census of India, 2001). However, it is found that although women are engaged in various fields, the participation of women is mostly found in marginal and casual employment due to inadequacy of skills, illiteracy, restricted mobility and lack of individual status (Chari, 1983).

Women are also mostly engaged in the unorganized sector (Mehta and Sethi, 1977). They are overwhelmingly concentrated in agro-based/household based activities (where they often serve as unpaid family labour) such as dairying, fisheries, small animal husbandry, handlooms, handicrafts and sericulture. Again, in many countries, even in India, women are often paid two-third or even half of the wages earned by men for the same task (FAO, 1995).

Assam, one of the seven states of North East India, is a region of immense diversity. For thousands of years, people and communities have met and mingled here, and customs and cultures have merged and in the process a composite and rich culture has evolved. Development, or the lack of it, has contributed to the disquiet that characterizes the states of North East, including Assam. The region is marked by low agricultural productivity, poor infrastructure, tenuous communications and low levels of industrial activity (Assam Human Development Report, 2003). There is recognition of the fact that Government

should play a special role in promoting development; however the gap is increasing. Bordering six states and two countries, Assam accounts for about 2.4 per cent of the country's geographical area. Its 26.64 million people (2001 Census) are 2.59 per cent of the country's population, and its population density of 340 persons per square kilometer is marginally higher than the average density for the country (324 persons per square kilometer).

Goalpara is one of the most under-developed district of Assam. It ranks 18<sup>th</sup> in the Human Development Index amongst the 23 districts of Assam. Its headquarter is the only urban area of the district. The primary sector provides employment to about 75 per cent of its population whereas the share of the secondary and tertiary sectors stands at 5.2 and 19.6 per cent respectively (2001 Census). The number of registered factories in the district stands at 29 in 2000.

Thus, though agriculture employs 75 per cent of the population in Goalpara, it has not been able to lead to much economic development of the region. In such a situation, sericulture is one such activity that can not only increase the income of the people, but can also generate employment opportunities, particularly for women. Sericulture in Goalpara district existed almost as a practice amongst the people since a long time. The silk in general and muga in particular has been closely associated with rituals and traditions and thus silk production and its usage has been an important household activity.

Sericulture refers to the conscious mass-scale rearing of silk producing organisms to obtain silk (P Vijay Kumar et al). Sericulture suits both marginal and small-scale landholders because of its low investment, high assured returns, short gestation period and rich opportunities for enhancement of income and creation of family employment round the year.

Sericulture being a cottage industry provides ample work for the women in rural areas, while their male counterparts look after agriculture. Its unique nature of work proves to be an ideal activity for women who can engage themselves in this activity in addition to their regular tasks of taking care of family. Moreover, most its operations do not require hard labour, except digging and ploughing (Sandhya Rani, 1998). Silk worm being delicate has to be handled with care. Thus, the entire process needs skill and patience, which suits women well.

The present study tries to assess the income generating activities women participate in sericulture in the Goalpara district of Assam. Sericulture can play an important role in Goalpara's economy by improving the income of the region. In fact, Goalpara district has been given the Geographical Identification Mark because its climate is suitable for silkworm rearing.

Sericulture is a highly remunerative ash crop with rich dividends. It is the only cash crop, which provides frequent and attractive returns in the tropical states of the country throughout the year. The net returns in case of Mulberry sericulture (when a farmer has one acre of Mulberry plantation using family labour) is estimated at about Rs 48,000/- per annum, which is substantially high compared to that of other tropical crops (Dandin, et al., 2005).

Sericulture industry is, therefore, well suited to the small and marginal farmers who are below poverty line (Sandhya Rani, 1998). The major portion of income from sericulture is captured by the primary producers, i.e., farmers (54.6 %) who produce cocoons, followed by the traders (17.8%), weavers (12.3%), twistors (8.7%) and reelers (6.6%) (P. Vijay Kumar et. al). The average income of the rearer depends on the area of land holdings, rearing of silkworms, technology adoption and available infrastructure. Moreover, in sericulture, nothing goes waste. Its by-products are useful in many ways. Mulberry leaves and shoots left by the silkworms form fodder for cattle and increases their milk yield. The maligned pupae are used in the preparation of dog biscuits, oil, etc. The oil and protein powder extracted from the dead pupae can be utilised in manufacturing soaps and baking industries respectively. It forms a rich food in poultry, fishery and piggery. The silkworms excreta can be used as manure. The rational utilization and disposal of such by-products helps the sericulturists to enhance their economic gains (Sandhya Rani, 1998). The creation of employment and income in silk reeling units is dealt with in Radha Krishna et al (2000) where they found that an acre of irrigated mulberry generates as much as one lakh rupees per year through transactions of cocoons and provide full employment to a minimum of 5 men throughout the year. Thus, there is an urgent need to evaluate income sources available to the people, particularly women, in the study area.

The broad objective of this study is to determine the contribution of sericulture as an income source of women in the Goalpara district of Assam. The subsidiary objective is the examination of constraints associated with sericulture in the study area with a view to giving recommendations on how to improve sericulture production in the study area.

## II. METHODOLOGY

### *Area of Study*

Goalpara is one of the most under-developed district of Assam. It ranks 18<sup>th</sup> in the Human Development Index amongst the 23 districts of Assam. Its headquarter is the only urban area of the district. The primary sector provides employment to about 75 per cent of its population whereas the share of the secondary and tertiary sectors stands at 5.2 and 19.6 per cent respectively (2001 Census). The number of registered factories in the district stands at 29 in 2000.

### *Sampling Procedure and Sampling Size*

Multi stage sampling procedure is used for the study. Goalpara district is divided into eight blocks, viz., Rongjuli, Kuchdhowa, Matia, Krishnai, Balijana, Kharmuza, Lakhipur and Joleswar. The second stage of selection was the purposive selection of two blocks (Rongjuli and Kuchdhowa). The basis of selection was acreage under sericulture. A total of seven villages, three from Rangjuli Block and four villages from Kuchdhowa have been considered for the study.

In the final stage of selection, a random sample of 30 women from each village was selected for the study. The study was carried out keeping in mind the difficulties in getting information related to income of women and appropriate care was taken to ensure that the information collected was as accurate as possible.

### *Methods of Data Analysis*

The data collected was classified and put in tabular form for analysis purpose. Simple statistical tools like averages and percentage distribution has been used to analyse the data. All the income items are expressed in rupees at current prices.

## III. RESULTS AND DISCUSSIONS

**Table 1: Distribution of Women According to Source of Income in the Study Area**

Sl No	Source of income	No. of respondents	Percentage (%)
1	Agriculture	21	10
2	Service sector	17	8.10
3	Sericulture	116	55.24
4	Petty Trade	8	3.81
5	Wage Income	19	9.05
6	Livestock	24	11.43
7	Others	5	2.38
8	Total	210	100

Source: Computed from Field Data

Table 1 shows the occupational structure of the respondents. Women are engaged in mostly sericulture activities in the study area. As has been mentioned earlier, sericulture has existed in Goalpara district almost as a practice amongst the people since time immemorial. Only 10 per cent of the women derive their income from agriculture, in spite of the economy being dependent on agriculture. The table also shows that 11.43 percent of the women in the study area derive their income from

livestock rearing, which is also a household activity. It is to be noted that the manufacturing sector is almost non-existent. Women engaged in the service sector are mostly engaged in the recent employment opportunities given by the National Rural Health Mission (NRHM), working as ASHA workers and a few in the nearby schools of the locality.

**Table 2: Amount of Income Derived From Different Income Sources**

SI No	Source of income	Average household income (Rs)	Percentage (%)
1	Agriculture	20,000/-	37.4
2	Service sector	6000/-	10.89
3	Sericulture	12800/-	23.24
4	Petty Trade	3,880/-	7.04
5	Wage Income	4300/-	7.81
6	Livestock	4500/-	8.17
7	Others	3000/-	5.45
8	Total	55,080/-	100

Source: Computed from Field Data

Table 2 shows the average household income of the sample household. As can be seen from the table, agriculture contributes the highest percentage (37.40) percent of the income of the households, followed by sericulture contributing 23.24 per

cent. Higher income from agriculture is due to the reason that the men in the sample households mostly are engaged in agriculture as their prime occupation, whereas the women folk are engaged in other activities, including sericulture.

**Table 3: Participation of Women in Various Sericulture Activities**

SI No.	Sericulture Activity	% of Women Participation (Som and Eri Cultivation)
1	Land Preparation	25
2	Collection of Planting Material	10
3	Procurement of Fertilizers and Manure	10
4	Planting	78
5	Application of Manure	65
6	Application of Fertilizer	70
7	Pest and Disease Management	20
8	Transportation of Leaf	40
SI No.	Sericulture Activity	% of Women Participation (Silkworm Rearing)
1	Chowki Rearing	88
2	Leaf Preservation	80
3	Maintenance of Hygienic Conditions	94

4	Pest and Disease Management	50
5	Maintenance of Environmental Conditions	70
6	Bed Cleaning	88
7	Spinning	90
8	Harvest Sorting	94
9	Marketing	6
10	Finance and Account Keeping	8

Source: Computed from Field Data

Women engage themselves in different sericulture activities. The contribution of women sericulturists in different activities is shown in Table 3. Involvement of women is high in all activities except those activities which involve going out from their homes like collection of planting material, procurement of

fertilizers and materials, marketing and finance and account keeping. Activities like maintenance of hygienic conditions, spinning, bed cleaning, chowki rearing, harvest sorting and planting are mostly done by the women in the study area.

**Table 4: Expenditure incurred in one hectare muga and eri cultivation and the returns expected from that hectare of muga and eri production**

<b>Expenditure (Muga)</b>	<b>Expenditure (Eri)</b>
Cost of 1150 som tree = Rs 5 X 1150 = Rs 5750/-	Castor, the food plant of eri worms, grows wild.
Seed produced in one hectare = 2 kg	Production of egg in one hectare = 700 gram
Processing charges for one kg seed = Rs 10,000/-	Processing charge of 700 gm egg = Rs 5100/-
Processing charges for two kg seed is 2 X 10000 = Rs 20,000/-	
Total cocoon produced in one hectare land is 1,40,000	Total cocoon produced in one hectare land is 1,05,000
Maintenance cost for one year = Rs 15,000/-	Maintenance cost for one year = Rs 8,000/-
Total Cost = Rs 40,750/-	Total Cost = Rs 13,100/-
<b>Returns (Muga)</b>	<b>Returns (Eri)</b>
As a reeling cocoon, the unit price is Re 1/-	Price per thousand cocoon = Rs 280/-
Then, total return is 1 X 1,40,000 = Rs 1,40,000/-	The price of 1,05,000 cocoon = Rs 29,400/-
As a seed cocoon, the unit price is Re 3/-	
Then, total return is 3 X 1,40,000 = Rs 4,20,000/-	

Source: Source: Computed from Field Data

Table 4 shows the expenditure incurred in one hectare muga and eri cultivation and the returns expected from that hectare of muga and eri production respectively.

The left side of table 4 shows the expenditure incurred and the expected returns when one hectare land is brought under muga cultivation. The right side of the table similarly shows the expenditure incurred in one hectare land under eri cultivation and the expected returns from that hectare. From the table it is clear that returns from sericulture are very high with a low investment. An income of Rs 1,40,000/- or Rs 4,20,000/- can be generated by an investment as low as Rs 40,750/- in case of muga cultivation. In case of Eri silk, the returns are as high as Rs 29,400/- from an

investment of Rs 13,100/- in one hectare of land. On an average, a sericulturist can grow three crops of Eri in a year. This shows that if sericulture is taken up as a primary occupation, the income of the households in the study area is likely to increase manifold. Development of sericulture in these areas will not only generate income but also create employment opportunities without disturbing the ecology and the environment.

**Table 5: Distribution of respondents according to problems faced in sericulture activities**

Sl No	Problems	No of Women	Rank
1	Pests and diseases	64	1st
2	Non availability of laying	50	2nd
3	Fluctuations of cocoon prices	46	3rd
4	Climatic disturbances	13	4th
5	Shortage of skill workers	12	5th
6	Lack of investment	12	5th
7	Shortage of rearing equipments	6	6th
8	Exploitation by middlemen	4	7th
9	Transportation problem	2	8th
10	Shortage of pesticides	1	9th

Source: Computed from Field Data

Various reasons have been cited by the respondents for non adoption of sericulture as a primary occupation inspite of its high income generating capacity. The problems faced are ranked in Table 5. The main problems faced by the respondents consist of pests and diseases (especially in case of muga), non availability of laying and fluctuations of cocoon prices.

In view of the problems faced by the women in sericulture activities such as pests and diseases, high fluctuations in cocoon prices, non availability of layings, climatic disturbances, inadequate finance for investment, exploitation by middlemen, transportation problem, shortage of skilled workers, shortage of rearing equipments and other related problems, some measures can be taken for the overall development of sericulture and ensuring active participation of women in sericulture. For example, the Government should take necessary policy decisions to safeguard the farmers from the fluctuations in cocoon prices. Various women friendly technologies have been developed by the Central Silk Board, which should be disseminated through proper extension services. Technology, which enhance skills of women and increase their productivity, should be adopted. Women generally are not involved in marketing of the products.

However, participation of women in marketing will motivate the women producers on the quality aspects, which influence demand in the market. Marketing knowledge should be provided for women with proper incentives. Proper training can also be imparted to women to increase productivity. Access of women sericulturists to institutional credit can also help in increasing production and income from sericulture and contribute to the well being of the family. Institutional credit can actually be given to attract more women to participate more enthusiastically and effectively in sericulture.

Sericulture can be considered as one of the most remunerative occupation for all categories of farmers, from a small/marginal farmer with meager resources to a large farmer. The return from this activity is quick with a short gestation period. The technologies involved are also simple, easy to adopt and within the reach of the rural poor. Sericulture has the added advantage of having diverse activities and hence the entire family

can get involved in the production process, creating employment and income opportunities.

The study shows that sericulture can emerge as the most important opportunity in generating women's income in the study area. It is the least resource intensive activity, which also does not require high education. In fact, a very low investment leads to high returns. Most of the activities related to sericulture, particularly rearing of eri can be done indoors. Another advantage of sericulture is that, it is an activity, which does not depend on season, but can be carried out throughout the year. Goalpara being an agricultural region with an almost non existent secondary and tertiary sectors, development of sericulture here (Goalpara) can help in creating employment and a steady source of income. Thus, if sericulture is taken up as a full time activity in the study area, it will go a long way in increasing the income of the respondents and raising their standard of living.

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