

Problems of Sericulture practices in Dima Hasao district of Assam

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ABSTRACT: This study focuses on the sericulture practices in Dima Hasao district, with the primary goal of identifying and analyzing the challenges faced by the sericulture farmers at various stages of the sericulture process. Primary data was collected by conducting a comprehensive survey involving sericulture farmers and analyzed using the Garret ranking technique. The research sheds light on the intensity and significance of the issues encountered in cocoon production, rearing, processing, weaving, marketing, and trading.

Shortage of feeds was the most important problem faced by the rearers, with highest Garrett value, who were interested to engage in cocoon production while unavailability of equipments was the major problem during silk processing activities. On the other hand, price fluctuation of cocoons was the chief marketing problem faced by the farmers. Along with these problems, lack of healthy seeds and lack of information etc. were some main constraints encountered during cocoon production. Financial problems and unavailability of proper market structure etc. were also identified to be main problems in processing sector. Middlemen interference, marketing problem etc. were also associated in sericulture market channels.

Keywords: Cocoon production, Dima Hasao, Garret ranking technique, Organized market, Sericulture.

INTRODUCTION

Sericulture, the ancient art and science of silk production, has held immense economic and cultural significance across various regions for centuries. In Dima Hasao District, Assam, India, sericulture has emerged as a crucial agro-based activity, playing a pivotal role in supporting the livelihoods of numerous farmers and weavers. The region's favourable climatic conditions and suitable soil have provided a conducive environment for the thriving sericulture practices namely eri (which was the main crop), muga, mulberry and oak Tasar.

The number of villages associated with sericulture in Dima Hasao district has increased from 145 in 2010-11 to 218 in 2021-22 with a production of 244.12 mt eri raw silk, 0.80 mt muga raw silk and 0.22 mt mulberry raw silk (Anon., 2022). The sericulture sector in Dima Hasao district operates through a complex and interconnected chain of stages, starting from seed production and silkworm rearing to silk processing, weaving, marketing, and trading. Each stage involves a

multitude of activities. However, like any other agricultural pursuit, sericulture faces diverse challenges that impede its growth and potential. These challenges manifest at various stages of the sericulture process and carry significant implications for the sericulture profitability and competitiveness.

Das (2008) in his study "Problems and Prospects of Sericulture in Assam with special reference to Barpeta district" analysed the importance of sericulture in the economy of Assam and its related problems. But he did not examine it through any field study and thus the study was a superficial one. His analysis was completely based on secondary data that suffers from the limitation of incompleteness. Bhattacharya (2015) in her research work "Economics of Sericulture in Assam" examined the overall status of sericulture, marketing channels for various silks and constraints encountered during various sericultural activities. Chongtham (2016) examined the level of silk production across size groups, silk marketing channels and determine the problems and prospects of silk

production and marketing in her thesis “Production and Marketing of silk and silk products in Manipur”. Elumalai and Muruges (2019) study concluded that in production and marketing constraints faced by the respondents in sericulture indicates that water scarcity, high wage rate, and incidence of pests and disease were the major constraints in production while price fluctuation was the major constraints in marketing. Khakhlari (2020) revealed as the handloom industry of Sualkuchi is not thoroughly organized and marketing agencies are diverse, the majority of the weavers rely on middlemen to sell their finished products. The unusual sudden price rise in yarn brings untold misery to the industry in the area as production is against advance orders at a predetermined price.

The primary objective of this study is to shed light on the problems encountered by the sericulture farmers in Dima Hasao district and delve into the underlying causes and consequences of these challenges. By identifying these obstacles, the study seeks to facilitate informed decision-making and the formulation of effective policies to address the issues and promote the sustainable growth of the sericulture sector.

MATERIALS AND METHODS

The present study was conducted in Dima Hasao district of Assam during the financial year 2021. Data collection from the sample respondents took place in April-May 2021. A purposive and random sampling design was followed for selection of respondents for the study. All the five Community Development Blocks of Dima Hasao district: (I) Jatinga Valley Development Block, Mahur; (II) Diyung Valley Development Block, Maibang; (III) Harangajao ITD Block, Harangajao; (IV) Diyungbra ITD Block, Diyungmukh; and (V) New Sangbar Development Block, Sangbar were selected purposively for the study. Again, two villages from each block were selected based on farmer’s availability and ease of communication. Total sample size of the study was 100 and from every village 10 per cent of the total people engaged in sericulture were interviewed random. Primary data was collected using a structured questionnaire. The compiled data was subjected to rigorous analysis and interpretation to discern the main challenges encountered by those engaged in sericulture in the district.

To assess the intensity of these problems, the Garret ranking formula (Garrett and Woodsworth 1969) was employed.

Percentage position = $100(R_{ij} - 0.5) / N_j$

Where, R_{ij} = Rank given for i th factor by the j th individual

N_j = Number of factors ranked by j th individual

The percentage position of each rank thus obtained was converted into scores by referring to the table given by Henry Garrett. Then for each factor, the scores of individual respondents were added together and then total value of scores and mean values of score was calculated. These mean scores for all the factors were arranged in the order of their ranks and inferences were drawn. The factors having the highest mean value was considered to be the most important factor.

RESULTS AND DISCUSSION

Sericulture involves a multitude of activities in each stage, but it has been observed that various challenges arise in each of these stages, significantly impacting the demand and profitability for sericulturists. In this subsection, we will discuss the problems encountered during cocoon production, processing, and marketing activities.

A. The problems encountered during cocoon production

It was observed from Table 1 that shortage of feeds was the major problem faced by the rearers, with highest Garrett value whereas scarcity of labor ranked last. Marginal farmers, who make up most of the rearers, struggle to expand cultivation due to reliance on naturally grown feed leaves. In addition, several other significant constraints in cocoon production were inadequate supply of quality and healthy seeds for commercial rearing, lack of information/education and disease infestation. These findings align with studies conducted by Hatibaruah *et al.* (2021). Likewise, Saikia *et al.* (2016) emphasized the scarcity of seeds as a central obstacle in large-scale muga silk production.

B. The problems encountered during processing activities

It was observed from the data presented in Table 2 that regarding the processing of cocoon, the majority of the respondents had low income in their families, for which they were unable to purchase modern equipments like improved reeling and spinning machine. Thus, unavailability of equipments was considered the major problem in processing activities. Choudhury (2019) reported that lack of modern equipment is one of the major problems among the silk weavers of Sualkuchi.

Financial crisis, absence of a proper market structure to acquire good quality cocoon, lack of marketing information and lack of technological advancements and training were other significant challenges. Elumalai *et al.* (2019) further support these findings, highlighting the challenges faced by different types of silk reelers in traditional areas of Tamil Nadu, such as non-availability of market information, inadequate market facilities, and the lack of technical guidance. Bhat and Choure (2014) reported that lack of marketing information was one of the major constraint faced by the silk industry due to which reelers are not getting remunerative for their produce.

C. The problems encountered during sericulture marketing

Data presented in table 3 revealed that the price fluctuation of cocoons tops the table in marketing problem faced by the farmers. To address this issue, the government should establish a fixed remunerative price for cocoons, providing stability and fair compensation to farmers. This approach aligns with Elumalai *et al.* (2019), which also identified price fluctuation and inadequate marketing facilities as major constraints experienced by sericulture farmers. In addition, the other constraints related to the marketing of cocoon were middlemen interference, absence of an organized sericulture market in the district, cocoon marketing

facing tough competition with other cash crops like paddy, jute etc and non-availability of proper storage facilities for surplus cocoon and raw silk production. Likewise, Gaikwad *et al.* (2023) also reported that the

main constraints encountered by the sericulture farmers were inadequate market information, high price fluctuations of cocoon in market and transportation problems.

Table 1: Problems encountered during cocoon production.

Sr. No.	Particulars	Mean score	Rank
1.	Lack of education/information	6205	III
2.	Lack of healthy seeds/dfls	6460	II
3.	Shortage of feeds	6750	I
4.	Disease infestation	5855	IV
5.	Non-availability of labour etc.	5475	V

Table 2: Problems encountered during processing activities.

Sr. No.	Particulars	Mean score	Rank
1.	Unavailability of proper market structure to get good quality cocoon	6175	III
2.	Financial problem	6360	II
3.	Unavailability of equipments	6625	I
4.	Poor information on market trend	5820	IV
5.	Technological Improvement and training	5120	V

Table 3: Problems encountered during marketing.

Sr. No.	Particulars	Mean score	Rank
1.	Price fluctuation of cocoons	6695	I
2.	Middlemen interference	6460	II
3.	Absence of storage facilities	4685	V
4.	Lack of organized market	5355	III
5.	Competition with different cash crops	5195	IV

CONCLUSIONS

The study conducted in the region has identified and ranked several critical problems faced by the farmers involved in production, processing, and marketing. The findings reveal that shortage of feeds for silkworms emerged as the most significant challenge faced by rearers, impacting their engagement in rearing activities. For spinners and reelers, the main issue identified was the unavailability of modern equipment, limiting their productivity and efficiency. In the marketing sector, the most pressing problem was the fluctuation in cocoon prices, causing uncertainty and instability for the sericulturists.

By addressing these problems collectively, the sericulture sector can become more resilient, competitive, and economically viable for the district. Collaboration between the government, researchers, industry players, and local communities is essential to implement effective solutions and ensure a prosperous future for the sericulture sector in the region. Overall, the success of the sericulture sector in Dima Hasao district requires persistent cooperation and collaboration among various stakeholders, including officers, artisans, traders, rearers, and weavers. With proper support and implementation of the recommended interventions, sericulture can become a catalyst for rural development and generate employment and income opportunities in the region.

FUTURE SCOPE

To overcome the limitations faced by the sector, several strategic interventions are recommended:

- 1. Encouraging Feed Plant Cultivation:** The rearers can be motivated to cultivate feed plants, and the government should collaborate with the department of social forestry to establish more Eri Concentration Centres (ECCs) and encourage private entrepreneurs to establish ericulture farms. Acquiring wasteland and allotting it to local silk rearing cooperatives or diligent rearers can help meet the shortage of food leaves for silkworms.
- 2. Strengthening Eri Seed Grainages:** The government should focus on producing more Disease-Free Laying (DFLs) and issue certificates to private DFL producers to meet increasing demand.
- 3. Establishing Regulated Cocoon Markets:** Organized market channels should be established to minimize the interference of middlemen and ensure fair prices for cocoons. Cocoon Collection Centres (CCC) can be set up in remote areas to protect rearers from exploitation and provide them with respectable prices.
- 4. Promoting Technological Advancements and Training:** Modern spinning devices like CSTR pedal cum motor-operated machines should be popularized among spinners. Necessary training and financial aid should be provided, along with access to electricity at a low tariff, to increase productivity and income.
- 5. Diversifying Products and Market Research:** Weavers should be motivated and trained to produce fabrics that cater to the preferences of the modern generation. Blending silk with man-made yarn like polyester can reduce costs and expand the market size. Market research should be conducted to assess demand and types of silk fabrics/garments preferred.

6. Strengthening Research and Extension Services: Research institutions' collaboration with rearers should be enhanced to bridge the information gap and bring laboratory results to the stakeholders. Training on sericulture-related activities should be organized to encourage the younger generation's interest in the sector.

7. Providing Financial Support: The state government should persuade commercial banks and other institutional sources to provide credit to sericulture and weaving sectors at a low or subsidized interest rate. Formation of SHGs and cooperatives among rearers and weavers can help them access loans easily and enhance their bargaining power.

8. Bridging Information Gap: Establishing a network of publications, radio, television, and public meetings can bridge the information gap between the government and stakeholders regarding finance, technology, and market opportunities.

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Conflict of Interest. None.

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