

Sericulture Farming in Assam: A Source of Livelihood of Rural People

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Abstract: *Producing sericulture is an age-old agricultural industry. It entails growing host plants and raising silkworms to create cocoons for obtaining raw silk. Consequently, sericulture offers significant prospects for income and job opportunities mainly for the rural population of Indian states, thus aiding in poverty reduction and generating foreign currency. Numerous business opportunities exist in different sectors of sericulture. India ranks as the second largest producer of silk globally and is also the world's largest consumer, supported by a well-established domestic market. It is notable for generating all four types of silk, namely. Mulberry, Eri, Tasar, and Muga. Upgrading the silk of sericulturists is essential to fully utilize sericulture's capabilities for producing higher quality cocoons and achieving lucrative earnings. This agriculture-based sector has been significantly contributing to job creation and income in the gradually progressing economy of Assam in the North-Eastern region. While all four types of silk are made in Assam, Eri and Muga hold the leading role in the state's sericulture landscape. Generating employment in rural areas has emerged as a primary focus for inclusive development across all developing economies in the post-globalization period. Nonetheless, the expansion of the sericulture sector was not consistently steady throughout the years. Low productivity, price volatility, insufficient markets, inadequate financing, limited transportation and storage options, absence of technology, and conventional industry practices are significant barriers that prevent the industry from reaching its full potential. Thus, this paper aims to explore the extent of job creation and income generation, the trends in silk yarn production, and examine the challenges and opportunities within the sericulture sector in Assam*

Key Words- *Sericulture, Silk, Employment, Challenges, Opportunities..*

I. INTRODUCTION

Silk manufacturing has now become prominent in both the fashion and business industries. This remarkable masterpiece has captivated the fashion enthusiasts. Silk can be likened to a canvas, with fashion representing fine art, while weavers and designers turn into the most talented artists. Silk is a natural protein fiber made of fibroin that can be

crafted into fabrics. This component of fibroin protein is produced by silkworm caterpillars to create cocoons. The most recognized silk is derived from the cocoons of the mulberry silkworm *Bombyx mori* larvae through sericulture. Various types of wild silkworms have been utilized to create different silk varieties in Asian, North American, and European nations since ancient times. However, a specific type of silkworm generates its unique silk. Mulberry silk, created by mulberry silkworms, accounts for 90% of global silk production. Additional types of commercial non-mulberry silks include eri silk, tasar silk, muga silk, and spider silk, among others. . The mulberry silkworms are named so because they exclusively consume mulberry leaves, while nonmulberry worms feed on various other plants such as som, pine, juniper, oak, castor, and potentially other sources. Nonmulberry silkworms like *Pinna squamosa*, which generate mussel silk, inhabit the shallow waters off the Dalmatian coast of the Adriatic Sea. Various other wild types are utilized in Africa and Asia. The cultivation of mulberry, som, castor, and other trees significantly contributes to silk production and the care of silkworms. Departmental nurseries, supported by the government and a few private ones, cultivate trees that supply leaves for the silkworms to eat. Cluster plantation is a type of plan that has been put into place to guarantee a rise in the output of silk cocoons.

II. SIGNIFICANCE OF THE STUDY

The importance of this study lies in the fact that sericulture is a traditional cottage industry deeply intertwined with the culture and lifestyle of Assam. In Assam, sericulture includes the cultivation of both Mulberry (Pat) and Non-Mulberry (Muga, Endi, and Oak Tasar) silk. Today, it is becoming one of the key sectors for profitable entrepreneurial ventures globally. Among the states in the North-East, Assam boasts a diverse range of silk cultivation. Nevertheless, the recent past has seen unsatisfactory levels of production and productivity. This paper aims to analyze the trends in silk yarn production and

explore the potential for employment and income generation within the sericulture industry of Assam.

III. REVIEW OF RELATED LITERATURE

Bharathi (2016) in her research indicated that sericulture can create job opportunities for officers and managers in both nationalized and private banks' agricultural loan sectors

Kherkatary and Daimari (2017) in their research indicate that the growth rates for both raw silk production and job creation have not been steady and consistent; instead, they have varied over the years in Assam. It has also been shown to be negative in certain years

Gogoi (2023) indicates that sericulture is an excellent occupation for the marginalized groups in society because it requires minimal investment, has a short gestation period, and offers higher returns, making it particularly fitting for small and marginal farmers. She also determined that the sericulture industry serves as an instrument for economic revitalization, enhancing the rural economy, and entrepreneurial endeavors in sericulture will elevate the nation's overall performance

IV. OBJECTIVES OF THE STUDY

The primary objectives of this study are-

- i) To examine the trends in silk yarn production in Assam.
- ii) To assess the employment opportunities and income potential in sericulture sector of Assam.
- iii) To examine the challenges and future outlook of the sericulture sector in Assam.

V. METHODOLOGY

This research relies solely on secondary data. An extensive review of published literature and books was performed throughout the study. A variety of reports issued by the Government of Assam and the Government of India, including the Economic Survey of Assam, the Statistical Handbook of Assam, the Central Silk Board, and the Ministry of Textiles, Government of India, were utilized as sources of secondary data.

Varieties of Silk:

There are three types of silk in North East Region-

a) Mulberry Silk :

The mulberry silkworms are completely domesticated and monophagous, meaning they exclusively consume mulberry leaves. In Northeast India, the cultivation of mulberry primarily takes place in Assam, Tripura, Meghalaya, and Manipur. Producers of leaves and cocoons usually implement plantation or garden systems, and then carry out harvesting and rearing indoors to safeguard against the elements. Mulberry silk is highly valued for its softness and durability, often commanding higher prices in the market compared to certain wild silks.

b) Muga Silk :

This semi-domesticated silkworm, native to Assam and extending into parts of Meghalaya, feeds on forest trees such as *Persea bombycina*, commonly known as "som," and *Litsea monopetalous*, referred to as "soalu." Muga cocoons produce a naturally golden-yellow silk that is distinctive to the culture of Northeast India. The rearing of Muga cocoons traditionally takes place outdoors amidst home gardens and forested areas. Muga sericulture has received a Geographical Indication (GI) tag due to its uniqueness to Assam. The production process is labor-intensive and primarily occurs in a single season, which is univoltine, yet it holds significant cultural importance.

c) Eri Silk :

This is a type of domesticated wild silkworm that is bred indoors. The larvae of the Eri silkworm consume castor leaves, known scientifically as *Ricinus communis*, as well as other broad-leaf plants like tapioca. Northeast India, which includes states such as Assam, Meghalaya, Nagaland, and Arunachal Pradesh, produces approximately 90% of India's eri cocoons. Eri cocoons are unique because they are open-ended, allowing the moth to leave, which is why they are referred to as "Ahimsa" or non-violent silk. Although the yield is of lower fineness, it results in a staple-fiber spun yarn that is valued for its thermal properties in textiles. Additionally, the cultivation of castor and tapioca serves as a source of extra income from their seeds and tubers.

Job Opportunities in Sericulture Sector

The sericulture industry plays a vital role in providing livelihoods for numerous rural and marginalized

communities, generating income and jobs through different phases of silk production, ranging from mulberry farming and silkworm cultivation to silk processing and weaving. This industry, which is labor-intensive and agro-based, offers more stable and profitable prospects compared to conventional crops, especially for women and those from economically disadvantaged backgrounds. It creates a diverse employment environment and significantly contributes to rural development and the reduction of poverty.

a) Direct employment Mulberry farming: This entails planting and caring for mulberry trees, which serve as the primary food source for silkworms. Silkworm cultivation: This demands specialized expertise to sustain ideal conditions for silkworm growth and cocoon production. Leaf collection: A labor-intensive activity centered on gathering mulberry leaves to feed the silkworms. Indirect employment

b) Silk reeling: This involves the process of unwinding silk filaments from cocoons and twisting several filaments together to form a single thread.

c) Silk twisting and dyeing: This prepares the raw silk yarn for weaving by twisting and applying colors. Silk weaving: In this final phase, threads are interlaced to produce fabric, resulting in finished products such as garments and other textiles.

d) Other downstream activities: This encompasses processes such as printing, finishing, and the processing of silk waste.

e) Key benefits Sustainable income: Sericulture can be a more lucrative option compared to traditional cash crops, with the potential for greater net profits. Inclusive development: It creates substantial job opportunities for women and marginalized communities, including educated unemployed youth.

f) Economic stability: Compared to traditional agricultural practices, sericulture provides more consistent and less seasonal employment, contributing to reliable income.

g) Poverty alleviation: It serves as a crucial instrument for eradicating rural poverty and promoting economic growth in rural regions. Sustainable livelihood & employment opportunities in sericulture sector. It extends beyond just silkworm

rearing, offering various types of work opportunities for both men and women.

Problems of Sericulture Sector in Assam-

The sericulture industry in India, particularly in Assam, faces several challenges. Some issues encountered in cocoon production, processing, and marketing activities are outlined below:

1. The primary problems during cocoon production include a shortage of nutrition, insufficient supply of quality and healthy seeds for commercial rearing, the use of inferior seeds and less productive silkworm breeds, lack of educational resources, and disease outbreaks.

2. The absence of equipment such as advanced reeling and spinning machines, due to family income constraints, is considered a significant issue in processing activities. Additionally, the tools utilized in the silk industry are basic, traditional, and labor-intensive, resulting in limited value addition and a reliance on manual skills.

3. Issues such as high price volatility, interference from middlemen, poor supply chain management, an increase in silk imports from China, a lack of an organized sericulture market, and insufficient storage facilities are prevalent.

4. Shifts in consumer preferences within the domestic market, moving away from traditional heavy handloom fabrics towards lighter materials and the influx of inexpensive textiles from other countries, indicate that the industry needs to adjust its production strategies to align with the evolving demand patterns of both the national and international markets.

5. The insufficient supply of quality raw silk and the high cost of cocoons result in the inability to fulfill the demand for high-quality raw silk in large quantities at competitive prices.

Prospects of Sericulture Sector in Assam-

Sericulture is a low-investment occupation that yields high income and offers significant advantages over other agricultural crops. This practice employs traditional and straightforward technologies that can be utilized by all farmers regardless of their literacy levels, and it does not necessitate advanced

equipment. In Assam, sericulture is primarily carried out by indigenous tribal communities. In a developing nation like India, the sericulture sector is vital for improving the livelihoods of tribal populations. It stands out as the only cottage industry in the country that provides plentiful employment opportunities in rural and semi-urban regions. In terms of industrial advancement, sericulture plays a crucial role in creating jobs and generating income for the rural populace. As a segment of farmers in Assam, many engage in cocoon rearing during the off-season for agricultural activities; therefore, current efforts should focus on transforming cocoon rearing into a regular occupation for these cultivators, especially small and landless farmers, as a primary income source. The sericulture industry remains largely fragmented and disorganized. Government efforts, through the Central Silk Board and the Integrated Scheme for Development of Silk Industry, have not uniformly benefited all rural economies. The introduction of high-yielding varieties of silk will enhance productivity. Additionally, the adoption of innovative technologies can reduce both time and production costs. Ensuring timely application of insecticides and pesticides will help prolong the life of cocoons by preventing attacks from various pests and insects.

VI. CONCLUSION

Sericulture is a low-investment occupation that yields high income and offers significant advantages over other agricultural crops. This practice employs traditional and straightforward technologies that can be utilized by all farmers regardless of their literacy levels, and it does not necessitate advanced equipment. In Assam, sericulture is primarily carried out by indigenous tribal communities. In a developing nation like India, the sericulture sector is vital for improving the livelihoods of tribal populations. It stands out as the only cottage industry in the country that provides plentiful employment opportunities in rural and semi-urban regions. In terms of industrial advancement, sericulture plays a crucial role in creating jobs and generating income for the rural populace. As a segment of farmers in Assam, many engage in cocoon rearing during the off-season for agricultural activities; therefore, current efforts should focus on transforming cocoon rearing into a regular occupation for these cultivators, especially small and landless farmers, as a primary income source. The sericulture industry remains

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