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ECONOMIC SIGNIFICANCE OF SERICULTURE COTTAGE INDUSTRIES IN KHASI AND JAINTIA HILLS OF MEGHALAYA: ANALYSIS BASED ON SECONDARY DATA

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Abstract
Sericulture is one of the important cottage industry in Khasi and Jaintia Hills, of Meghalaya providing livelihood support especially for rural women. The economic significance of sericulture is evident in its growth from 28,923 families in 2010-11 to over 60,000 in 2017-18 [1]. Raw silk production, particularly Eri silk, has also grown significantly, with over 1,200 metric tons produced in 2020-21[2]. Sericulture is a women-intensive industry, with women performing most silkworm rearing, spinning, and weaving tasks. Although Meghalaya's silk is primarily consumed domestically, there is growing export potential for Eri silk in niche markets due to its sustainable and ethical production. The paper concludes that sericulture has significant socio-economic benefits for the Khasi-Jaintia region, including rural employment, women empowerment, and cultural preservation. Policy support, such as improved infrastructure, training, and market linkages, is recommended to enhance the sustainability and profitability of this traditional cottage industry.

Keywords: Sericulture; Cottage Industries; Meghalaya; Eri Silk; Rural Employment

Introduction

Meghalaya, a hill state in Northeast India, has a rich tradition of sericulture, particularly in the Khasi and Jaintia Hills, where it serves as a cultural heritage and livelihood for indigenous communities[3]. Approximately 5-6 million people in India rely on sericulture, with about half being women[4]. Women constitute about 60% of the sericulture workforce, highlighting the sector's gender dimensions [6] [7]. Meghalaya produces all four silk varieties—Mulberry, Eri, Muga, and Oak Tasar—offering significant export potential [8]. Eri silk, known as the "fabric of peace," is gaining interest in sustainable fashion markets [9] [10]. However, challenges such as production fluctuations, limited processing facilities, competition from cheaper imports, and the need for modern technology necessitate further study of sericulture's economic significance in Meghalaya.

Literature Review

Sericulture as a Rural Industry: In rural and tribal India, sericulture is a significant agro-based cottage industry, particularly in Northeast India, where silk farming and weaving have historical roots. Meghalaya was recognized for Eri silk in the early 20th century, while Assam is known for Muga silk[11]. Weaving is integral to the culture, especially among women in Khasi and Jaintia societies[12].

Economic Contribution and Employment:
Sericulture creates jobs and alleviates rural poverty, employing millions in various stages from plant growth to weaving. It supported 948,000 families in 52,000 Indian villages (Savithri et al., 2013)[13], and employed 9.178 million people in 2018–19, significantly up from 1.9 million in the mid-1980s[14]. The Northeast, particularly Meghalaya, has seen growth in Eri and Muga silk production, with 1,812 sericulture villages and 14,000 silk-producing families reported in 2001 (Goswami, 2006)[15] [16]. The industry has positively impacted the rural economy, with recent data indicating further growth since the 2010s. Government promotion and silk demand are driving this expansion, and in West Bengal, women's sericulture skills have been linked to increased family income and empowerment (Roy & Roy Mukherjee, 2020). Similar benefits are anticipated in Meghalaya, where sericulture may stabilize rural livelihoods[17].

Women's Participation:
Women dominate sericulture, making up about 60% of the workforce. They gain financial independence and improved social status through this work [18], although they face wage disparities and

limited decision-making power [19]. In Meghalaya's matrilineal society, women teach weaving and dyeing [20]. The designation of Umden as Meghalaya's first "Eri Silk Village" in 2022 highlights women's contributions [21]. Training, credit, and cooperatives enhance the productivity and sustainability of women sericulturists (Venkatesh et al., 2010; Roy & Roy Mukherjee, 2020).

Sericulture in Meghalaya and the Northeast:
Sericulture production trends in Meghalaya show that globalization has negatively impacted the silk industry, except in Assam (Goswami, 2006). Eri and Mulberry/Muga silk are crucial, with 24 weaving training centers and 4 mulberry and muga reeling units reported in 2001-02 [22]. Limited infrastructure has forced farmers to sell cocoons out of state, reducing their value. According to Lyndem (2021), while locals excel in cocoon rearing and handweaving, they face challenges in yarn production[23]. Higher local yarn costs increase prices [24]. Initiatives like Sai-Lum Meghalaya Fabrics have improved Eri yarn production from 1–1.5 kg/month to10–15 kg per week [25]. Industry reports say technology can boost sericulture productivity and revenue.

Economic Potential and Export Market
Sericulture is crucial for exports and economic growth, with India producing 35,820 metric tons of raw silk in FY 2019-20, ranking second globally after China [26]. Meghalaya leads in Eri silk production, contributing 1,100 to 1,200 metric tons (Syamaladevi,2022)[27]. The demand for traditional textiles boosts Meghalaya silk consumption, particularly Muga and Eri silk, which can command premium prices internationally[28]. Research indicates that geographical indication status and branding could enhance muga silk marketability. Meghalaya promotes silk production, with elite Eri silk and designer fabrics as aspirational products. Training at North Eastern Hill University improves farmers' skills and market access, generating ₹150-200 crore annually for local cooperatives through value addition and exports [29]. India's silk exports for 2019-20 surpassed ₹1700 crore

Importance of the study
This study is significant as it elucidates the impact of sericulture cottage industries on the regional economy of the Khasi and Jaintia Hills, highlighting its role in rural development as recognized by governmental initiatives. It critically evaluates the efficacy of existing policies, such as the silk samara programme, thereby informing resource allocation and strategic planning for policymakers[40]. Furthermore, the research underscores the importance of sericulture in promoting women's economic empowerment, thereby fostering inclusive development. By employing comprehensive secondary data from 2010 onwards, the study addresses empirical research gaps, offering data-driven insights into the sector. Additionally, it explores the potential for sustainable livelihoods and the export viability of Meghalaya's Eri silk, linking it to global value chains. The findings are poised to guide stakeholders in strategizing for the future of the sericulture industry.

Objectives
This research paper aims to:
- Examine the development and trends of sericulture in Meghalaya, focusing on the Khasi and Jaintia Hills.
- Evaluate the impact of sericulture on employment and income generation.
- Assess the export capacity of Meghalaya's silk sector, particularly Eri and Muga silk from the Khasi-Jaintia region.
- Analyze the role and scope of women's involvement in sericulture and its socio-economic implications.
- Identify challenges and opportunities in sustaining and advancing sericulture as a cottage industry.
- Propose recommendations for policy initiatives, support frameworks, or further research to enhance the sericulture

Methodology

This study examines sericulture in Meghalaya from 2010 to 2021 using secondary data analysis. Primary data comes from the Directorate of Economics & Statistics, Government of Meghalaya, Central Silk Board, and Ministry of Textiles, while regional data is obtained from NEDFi's Databank. Data collection includes annual statistics on sericultural villages, households, and production quantities of various silk types. Descriptive statistics and trend analysis are used to evaluate quantitative data, while qualitative analysis includes academic literature, reports, and news articles to provide qualitative insights. The analysis is confined to data from 2010 onwards, with district-specific data included when available [30]. Data validation is ensured through cross-referencing multiple sources [31] [32]. However, the study's methodological limitations include reliance on existing reported data, which may not capture all aspects of sericulture, particularly informal sectors.

Findings

The findings from the analysis of secondary data are organized around the key focus areas: employment generation, income generation (production trends), export potential, and women's participation. Relevant tables and figures are provided to illustrate the trends, with data spanning 2010 onward.

1. Growth of sericulture infrastructure and participation:

Meghalaya's sericulture sector has experienced notable growth over the past decade, with increased family and village participation. In 2010-11, there were 1,812 sericultural villages and 28,923 families involved. By 2017-18, participation peaked at 60,168 families across 2,036 villages, reflecting a doubled engagement rate [33]. However, post-2017-18, participation declined to 46,971 families and 1,964 villages [34]. The 2020-21 figures indicate a net positive growth compared to the previous decade [35]. The number of sericulture farms rose to 38 by 2019-20, although silk reeling units remained limited [36]. In 2023-24, West Khasi Hills produced approximately 124 metric tons of silk, one of the highest in the state [37], while East Khasi Hills reported modest outputs of 4-5 MT each for mulberry and eri silk [38]. District-wise data from 2023-24 shows that the Jaintia Hills and West Khasi Hills are the epicenters of sericulture in the Khasi-Jaintia region, with traditional Eri silk weaving villages contributing significantly [39].

2. Raw silk production and income generation

The economic performance of sericulture is primarily reflected in raw silk production, a key income source for farmers. Data from Meghalaya indicates notable growth, especially in Eri silk production. 2020-21, broken down by silk type (Mulberry, Muga, Eri).

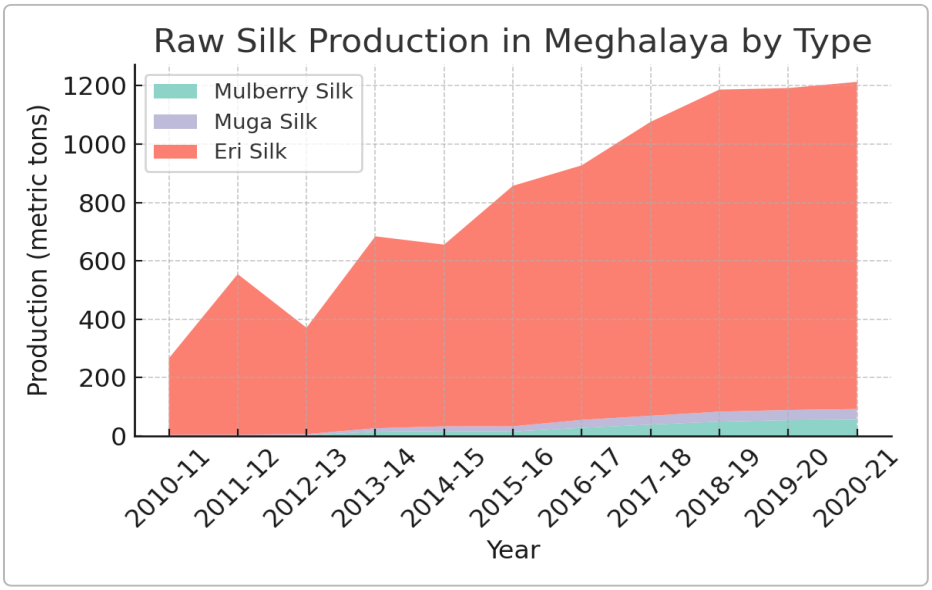

Figure 1. Raw silk production in Meghalaya by type, 2010–2021 (Source: Directorate of Sericulture & Weaving, Meghalaya).

Figure 1 shows raw silk production trends in Meghalaya from 2010-11 to 2020-21 by silk type (Mulberry, Muga, Eri). Total output rose from ~266 MT in 2010-11 to ~1213 MT in 2020-21, with Eri silk comprising over 98%. Eri production increased from 262 MT to 1121 MT, a 4.3-fold rise [40], with a notable surge from ~364.5 MT in 2012-13 to ~657.3 MT in 2013-14, attributed to improved practices and government initiatives [41]. By 2015-2018, Eri production reached 1000 MT [42].
Mulberry silk production grew from <1 MT in 2010-11 to ~55.6 MT in 2020-21 [43], with significant increases in 2013-14 and 2016-17 [44], reflecting successful expansion and better silkworm breeds [45]. Although minor, mulberry silk supports cottage industries and diversifies farmer incomes.
Muga silk production rose from ~3.25 MT in 2010-11 to ~36.78 MT in 2020-21, with fluctuations due to geographic and climatic factors [46]. Efforts to enhance muga production, such as establishing silkworm reserves, have been noted, though it remains the smallest contributor by volume.
Estimating income from silk production necessitates price data. Eri cocoon prices range from ₹300-400 per kg, while mulberry silk prices are ₹2000-3500 per kg, indicating that Meghalaya's silk output value in 2020-21 could reach tens of crores of rupees [47]. Targeting 20 MT of high-quality Eri silk yarn may yield projected earnings of ₹150–200 crore through value-added products, highlighting the economic potential of premium goods [48].

3. Export Potential and Market Trends

Meghalaya's sericulture, primarily for domestic use, has export potential due to niche market appeal [49]. The "Ryndia" fabric, made from Eri silk with natural dyes, attracts designers, and Khasi-Jaintia weavers could export shawls and stoles with proper marketing support. In 2019-20, India exported silk goods worth ₹1,745.65 crore. While Meghalaya's Eri silk yarn exports are minimal, value-added products could enter the market. The state government is promoting quality improvements and forming farmer producer companies to enhance silk exports. Central schemes like the North East Region Textile Promotion Scheme fund projects to improve the sericulture value chain, benefiting families and creating assets [50]. Challenges include quality control, volume, certification, and marketing. Despite limited direct exports, Khasi and and Jaintia Hills' sericulture has potential for future expansion due to unique silk varieties and sustainable traditional processes.

4. Women's participation and economic impact

Women make up about 60% of the sericulture workforce in the Khasi and Jaintia Hills, totaling 5.5 lakh out of 9.178 lakh workers in 2018-19 [51]. They manage rearing collectively, balancing it with domestic duties, and their income supports household finances, including children's education. This sector boosts women's financial autonomy and social capital, particularly in the matrilineal Khasi society. A 2022 report highlighted a Meghalaya Eri silk village as a tourist hotspot, enhancing women's recognition and bargaining power[52]. Skill development is vital, with 9-11 weaving training centers established [53]. Women's economic decision-making is important, though traditional norms may limit their influence. Self-help groups and cooperatives can empower women in market transactions, highlighting their participation as a key strength for socio-economic upliftment.

Discussion

Sericulture in Meghalaya's Khasi and Jaintia Hills has significant economic importance, with around 60,000 families engaged, providing nearly 300,000 livelihoods, similar to Assam's 1.87 lakh families across over 9,000 villages [54]. While raw silk production is increasing, local value addition remains debated, though local weaving centers aim to enhance income generation [55]. Challenges include disease outbreaks, climate change, and potential labor shortages due to youth migration [56]. Women benefit from reduced workloads but may face increased hours. Meghalaya plans to brand its silk and connect artisans with markets, utilizing GI tags and Common Facility Centers for quality control. Sericulture also links to tourism, enhancing income through cultural shows [57]. In 2020-21, Meghalaya produced about 1200 MT of raw silk, ranking second in Eri production after Assam, with potential for specialization and increased mulberry cultivation. Overall, sericulture's growth is evident, but strategic improvements are needed for sustained economic benefits.

Suggestions/Recommendations

The Khasi and Jaintia Hills sericulture sector can be enhanced and sustained by implementing several strategies. These include strengthening the value chain through common facilities, improving training and extension services, forming cooperatives or producer companies, developing a distinct brand identity for Meghalaya silk, securing Geographical Indication (GI) tags, and participating in trade fairs and exhibitions. Infrastructure development in sericulture villages should be improved, with investments in road connectivity and e-commerce. Research and development should be invested in localized institutes or in collaboration with the Central Silk Board's research stations. Women-centric policies should ensure access to credit and social security measures for women sericulturists. Diversification and innovation should be encouraged, including traditional shawls and textiles and innovative silk products. A robust system for monitoring and evaluation should be implemented to ensure the success of sericulture initiatives.

Limitations and scope for future Research

This study provides an overview of sericulture's economic significance in Meghalaya's Khasi and Jaintia Hills, but has limitations such as reliance on secondary data sources, lack of direct economic indicators, and insufficient qualitative depth. The analysis is based on Meghalaya, which may obscure the specific contribution of Khasi and Jaintia hills. Future research could include micro-level economic studies, impact evaluation of interventions, gender-focused research, market and supply chain analysis, sustainability, and comparative regional studies. These studies could help contextualize the findings and guide future research.

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