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Strengthening India's Sericulture for Sustainable Silk Trade Growth

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The silk industry in India plays a significant role in rural employment generation, women empowerment, foreign exchange earnings, and preservation of traditional textile heritage. Recent export trends indicate remarkable growth in India's silk trade, especially in silk fabrics, garments, and carpets. However, the increasing dependence on imported raw silk highlights persistent challenges such as low productivity, silkworm diseases, climate variability, poor-quality seed, and inadequate adoption of scientific technologies. Research Extension Centres (RECs) under the Central Silk Board play a vital role in strengthening sericulture through technology transfer, farmer training, and extension services. Scientific interventions, climate-resilient technologies, and skill-development programmes are essential for achieving sustainable growth and self-reliance in India's silk sector.

Key Words: Silk Trade, Sericulture, Silk Export, Raw Silk Import, Climate Change, Silkworm Diseases

Introduction

The silk industry is one of the most important agro-based and labour-intensive sectors in India. It provides sustainable livelihood opportunities to millions of rural households, particularly women, tribal communities, & small-scale farmers. Apart from supporting traditional textile production and handloom industries, sericulture contributes significantly to rural employment and foreign exchange earnings. Recent trends in silk export & import clearly indicate the growing global demand for Indian silk products. Value-added silk items such as silk fabrics, garments, carpets, & blended silk materials have shown substantial growth in international markets. However, despite strong export performance, Indian sericulture sector continues to face several scientific, technological, & socio-economic challenges that limit domestic silk productivity & increase dependence on imported raw silk.

Growth in India's Silk Exports

According to recent trade statistics, India's silk exports increased substantially from ₹1466.60 crore in 2020–21 to ₹2919.54 crore during April–January 2025–26. In terms of foreign exchange earnings, exports increased from 198.30 million US dollars to 332.72 million US dollars during the same period.

Export of Silk Fabrics and Made-ups: Among all export categories, silk fabrics and made-ups contributed the highest share to export earnings. Export value increased from ₹729.50 crore in 2020–21 to ₹1668.85 crore during April–January 2025–26. This growth reflects the

strong global preference for Indian handloom silk products, woven fabrics, and traditional silk craftsmanship.

Growth in Silk Garments and Carpets: Readymade silk garments also showed steady growth, increasing from ₹449.56 crore to ₹553.20 crore during 2025–26. Similarly, silk carpet exports increased significantly, reaching ₹399.16 crore compared to ₹107.56 crore in 2020–21. Exports of silk yarn and silk waste further indicate diversification and better utilization of silk by-products in the silk economy.

Increasing Dependence on Raw Silk Imports: Despite encouraging export performance, India continues to rely heavily on imports of raw silk and silk yarn to meet industrial demand. Raw silk imports increased from ₹570.56 crore in 2020–21 to ₹1100.22 crore during April–January 2025–26. Likewise, silk yarn imports increased from ₹61.98 crore to ₹192.44 crore. The increasing dependence on imported silk indicates that domestic production has not yet achieved self-sufficiency. Several scientific and socio-economic factors continue to affect productivity at the farmer level.

Challenges in the Sericulture Sector

Silkworm Diseases and Crop Losses: Diseases such as pebrine, grasserie, flacherie, and muscardine continue to cause severe crop losses in silkworm rearing. Poor hygiene, inadequate disinfection practices, and unfavorable environmental conditions further increase disease incidence.

Climate Change and Environmental Stress: Climate variability has become another major challenge for sericulture farmers. Fluctuations in temperature and humidity negatively affect silkworm physiology, larval growth, cocoon formation, and filament quality. Drought conditions and irregular rainfall also reduce mulberry leaf productivity and quality.

Lack of Scientific Rearing Practices: Many farmers still depend on traditional and non-scientific rearing practices. Limited access to improved rearing houses, chawki rearing centres, environmental control systems, mechanized appliances, and scientific management practices often results in poor cocoon yield and inferior silk quality.

Role of Research Extension Centres (RECs)

In this situation, Research Extension Centres (RECs) under the Central Silk Board play a highly significant role in strengthening the sericulture ecosystem.

Technology Transfer and Extension Support: RECs act as a bridge between research institutions and field-level farmers by transferring scientific technologies and promoting adaptive research. These centres conduct field demonstrations, awareness programmes, exposure visits, and farmer-scientist interactions for effective technology dissemination.

Farmer Training and Capacity Building: Training programmes organized by RECs help farmers acquire scientific knowledge regarding improved mulberry cultivation, integrated nutrient management, disease diagnosis, chawki rearing, disinfection protocols, and environmental regulation. Scientific interventions such as high-yielding mulberry varieties, disease-free layings (DFLs), integrated pest management, and climate-resilient rearing technologies significantly improve cocoon productivity and silk quality.

Climate-Resilient Technologies in Sericulture

Climate-resilient sericulture technologies are becoming increasingly important due to changing environmental conditions. Technologies such as low-cost rearing houses, humidification systems, improved mountages, drought-tolerant mulberry varieties, and drip irrigation systems help stabilize silk production under adverse climatic conditions. The adoption of such technologies improves resource-use efficiency and reduces production risks faced by farmers.

Government Schemes and Skill Development

Government-supported programmes such as the Samarth Scheme and other skill-development initiatives have strengthened human resource development in the sericulture sector. These programmes focus on entrepreneurship development, women empowerment,

skill enhancement, and self-employment generation. Participation of women and rural youth in silkworm rearing, weaving, spinning, reeling, and value-addition activities has significantly contributed to inclusive rural development.

Ecological and Socio-Economic Importance of Sericulture

Scientifically, sericulture offers several ecological and socio-economic benefits. Mulberry plantations contribute to carbon sequestration, soil conservation, and ecological sustainability. Since sericulture requires relatively low initial investment and is labour-intensive, it provides year-round employment opportunities for small and marginal farmers. Integration of sericulture with other farming systems also supports diversified and sustainable rural livelihoods.

Future Perspectives

The steady growth in silk exports demonstrates the vast potential of India's silk sector in generating rural income and foreign exchange earnings. However, rising imports of raw silk emphasize the urgent need to improve domestic silk productivity through scientific research, quality seed production, advanced disease management, irrigation support, mechanization, and effective extension services. Strengthening the extension network of Research Extension Centres, expanding farmer training programmes, promoting region-specific technologies, and increasing investment in sericulture research can significantly improve domestic silk production capacity. Digital extension services, climate-smart technologies, and farmer-oriented scientific interventions will play a major role in achieving self-reliance and sustainability in the silk industry.

Conclusion

The silk industry continues to remain an important pillar of rural development and economic growth in India. While the growth in silk exports reflects the strong global demand for Indian silk products, the increasing dependence on imported raw silk highlights major challenges in domestic production systems. Addressing issues such as silkworm diseases, climate variability, poor-quality seed, and lack of scientific farming practices requires coordinated efforts among researchers, extension personnel, policymakers, and farmers. Strengthening Research Extension Centres and expanding farmer training programmes can significantly improve silk productivity, farmer income, and sustainability of the sericulture sector. With continuous technological advancement, scientific intervention, and effective policy support, sericulture has the potential to emerge as a highly sustainable agro-industrial sector capable of ensuring rural livelihood security, women empowerment, ecological sustainability, and long-term economic development in India.

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