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Sericulture Industry in India - A Source of Employment Generation

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Abstract — *India is the second largest producer of silk in the world ,next to China, with 14.7% share in global raw silk production. Silk, considered as the queen of fibres, is proteinaceous in nature. The bulk of commercial silk is produced from the mulberry silkworm Bombyx mori. The sericulture is rural, cottage and agro-based industry of cultivating food plants, rearing silkworms, conducting silk reeling, twisting, dyeing, weaving etc. ,provides continuous employment to 6817 thousand people in India .The current annual production of 16957 MTs of mulberry raw silk and proportionate consumption of food plants in 179 thousand hectares spread over 51 thousand villages ,generation of 125 thousand tons silk cocoons and 24 crore silkworm seed indicate the colossal quantum of waste and pollution generation in sericulture sector, require perceptive management for ecological security, value addition, and employment generation.*

The catching art of crafting silk waste is one of the interesting utility of silk, which develop human skills besides generating self employment and additional revenue. The crafts like garlands, flower vase, wreath, pen stand, dolls, jeweler, wall hangings, clocks, bouquets, and greeting cards, can be carved using silk wastes. The silk based paper is used to craft flowers, buffet lamps, and decorate plastics, steel and fabrics. The hybrid silk, net raw silk, silk tow and silk waves were converted as high valued fancy jackets, carpets and furnishings.

The traditional practices make mulberry and silkworm to produce only silk filament and textiles, the new approach extend its application towards nutritional, cosmetic, pharmaceutical, biomaterial, biomedical, and bioengineering, automobile, house building, and art crafts.

Keywords — Sericulture industry, Employment generation, Silk, India.

I. INTRODUCTION

Silk is known as the "Golden Fibre " of the " Queen of textile " and is admired all over the world for its sleek and luster. Its products are wonderfully light and soft but strong and smooth and universally accepted by the world top fashion designers for its elegance, colors, dyeing affinity, thermo tolerance and water absorbance.

Sericulture industry starts with agriculture activity of mulberry cultivation, silkworm rearing and speed production, opens up into the sectors of silk reeling, twisting, weaving, dyeing, printing and manufacture etc. These activities, in turn support the ancillary enterprises of machine manufacture and by-product utilization including spun silk yarn manufacture and pupae oil extraction, thus providing employment for the skilled and unskilled labor force, livelihood for the small and marginal farmers.

India is the second largest producer of silk in the world with an annual production of silk more than 21,000 M. Tons in 2010-11 (provisional). In india, because of prevclence of favorable climatic conditions, mulbery is cultivated mainly in five states, viz., Karnataka, Andhra Pradesh, Tamil Nadu, West Bengal and Jammu and Kashmir. Silk industry is a labour intensive in nature, which is mainly a cottage industry in India providing livelihood to more than 9.42 lakh families. Nearly 7.56 million people are currently engaged in sericulture and silk production.

Sericulture is practiced in about 52,360 villages all over the country and employment to about 7.56 million people, most of them being small and marginal farmers in rural areas, creating employment to at least for 12-13 people per hectare of mulberry; hence migration of people from rural to urban areas in search of jobs can be minimized. India is earning more than Rs 3,000 crore rupees from export of silk fabrics, waste and garments [7]. In addition to high export opportunities, silk is having very good domestic market and strong handloom base blended with artisan skill, which is the real strength of the Indian sericulture industry. Sericulture being an agro-based enterprise plays a predominant role in shaping the economic destiny of the rural people. It holds promise as an employment generating industry, especially in rural and semi-urban areas. Sericulture is multidisplinary activity consists of food plant cultivation (mulberry leaf production), silkworm rearing

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(cocoon production), silkworm egg production, silk reeling (yarn production), twisting, Warp and weft making, printing and dyeing, weaving, (fabric production), finishing, garment designing, marketing etc.

India has a glorious sericulture tradition of its own. Silk is indispensable in ceremonies and religious rituals, being a must in weddings and festivals. From this, it is very clear that it has very strong domestic market, which is a real strength of our sericulture industry. Sericulture involves low investment with frequent income with 5-6 crops per annum Once the mulberry plantation is established it will continue to yield consistently for 15-20 years with minimum expenditure for maintenance[1]. The sericulture sector plays a major role in the development of the rural economy. The industry offers employement opporunities to more than three million people in India since many government and private organisation are engaged in this industry.

Present status: sericulture has better prospects for growth in the developing countries rather than in the advanced countries. Silk production in temperate countries like Japan, South Korea, USSR etc., is declining steadily not only because of the high cost of labour and heavy industrialization in these countries, but also due to climatic restrictions imposed on mulberry leaf availability that allows only two cocoon crops per annum. Thus, India has a distinct advantage of practicing sericulture all through the year, yielding a stream of about 4 – 6 crops as a result of its tropical climate[2].

In India, sericulture is not only a tradition but also a living culture. It is a farm-based, labour intensive and commercially attractive economic activity falling under the cottage and small-scale sector. It particularly suits rural-based farmers, entrepreneurs and artisans, as it requires low investment but, with potential for relatively higher returns. It provides income and employment to the rural poor especially farmers with small land-holdings and the marginalized and weaker sections of the society. Several socio-economic studies have affirmed that the benefit-cost ratio in sericulture is highest among comparable agricultural crops (Table)

Cost:Benefit analysis of mulberry sericulture and other competing crops.

Item	Mulberry sericulture	Sugarcane	Turmeric
Total input costs	48,659	30,575	29,610
Gross returns	96,132	60,200	55,317
Net returns	47,476	29,625	25,707
CB ratio	1:1.98	1:1.97	1:1.02
Crop period	1 year	1 year	4 – 5 months

Note: Data in Rs/acre/annum

Source: *Dandin et al., presented at the 20th Conference of the International Sericulture Commission, Bangalore, December, 2005*

Types of silks in India: India is the home for the production of the vast variety of silk secreting fauna. India achieved the unique distinction of all the five commercially traded varieties of natural silks namely, Mulberry, Tropical Tasar, Oak Tasar, Eri and Muga. Silk obtained from sources other than mulberry are generally termed as non-mulberry or Vanya silks. The bulk of the commercial silk produced in the world is mulberry silk that comes from the domesticated silkworm, *Bombyx mori* L. which feeds solely on the leaves of the mulberry (*Morus sp.*) plant.

II. STATISTICS OF SERICULTURE IN INDIA

Indian silk industry has registered an impressive growth, both horizontally and vertically. Plans and schemes implemented by central and state agencies and relentless efforts of thousands of dedicated persons in the fields of research and extension have helped in this context. The sericulture industry has witnessed a quantum jump in raw silk productivity. The average yield of 25 kgs of cocoons/100 dfls in the recent past has increased and currently the average yields are in the range of 60 – 65 kgs/100 dfls[4]. The new technology, besides doubling yields has also led to qualitative improvements in cocoon production with considerably reduced renditta and has also helped break the climate barrier.

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The export of Indian silk products consists of finished goods like fabrics, made-ups, ready-made garments and furnishing materials like curtains, carpets, bed spreads, cushion covers etc. The export of silk products has been showing a steady growth and the export earnings showed a rapid increase.

III. FUNCTIONS OF CENTRAL SILK BOARD (CSB, BANGALORE, GOVT OF INDIA)

Central Silk Board (CSB), Bangalore under the Ministry of Textiles, Govt. of India is the apex body for overall development of sericulture and silk industry in India. The functions assigned to the Board are to promote development of the silk industry by all appropriate measures like undertaking, assisting and encouraging scientific, technological and economic research, improvement of mulberry cultivation, production and distribution of healthy silkworm seed, production of quality raw silk and promotion of silk market etc. In addition, the board is responsible for advising and reporting to the Govt. of India on all matters relating to the development of the raw silk industry, including the import and export of raw silk.

Indian sericulture is not only vast, widely dispersed but also multidisciplinary in nature involving silkworm seed sector, cocoon sector (cultivation of food plants and silkworm rearing) and post cocoon sector (silk reeling, spinning, twisting, processing and weaving). Therefore, Central Silk Board, recently, is coordinating and implementing collaborative research activities in association with National level R&D Institutions, State Sericulture Research and Development Institutes, Universities, Department of Science and Technology, Department of Biotechnology, CSIR/ICAR/IARI/IITs/IIMs and other Private and International Research and Development Institutions to promote applied research and development of appropriate technology towards attaining higher quality and productivity levels of Indian silk. R&D achievements of CSB like technologies patented and commercialized.

IV. STRENGTHS AND CHALLENGES OF SERICULTURE INDUSTRY IN INDIA

R&D achievements like development of indigenous mulberry varieties with highest leaf yields in the world, new bivoltine silkworm hybrids eminently suited to the tropical regions of the country, farmer-friendly technologies, cost-effective new package of practices for cultivation of food plants, rearing and reeling coupled with huge natural and man-made resources and trained manpower clearly indicates the future prospects of sericulture industry to emerge as a promising indicator of economic development for the upliftment of the socially deprived communities and the downtrodden. The strengths, weakness, opportunities and challenges (SWOT analysis) of Indian silk industry have been given in Table .

SWOT analysis of the Indian silk industry

Strengths	Weakness	Opportunities	Threats
Large production base, availability of skills, land and labour.	Gaps in technology transfer and extension support.	Generation of rural employment and reduction of migration to urban areas.	Falling international prices and heavy dumping from China at low prices.
Established infrastructure, availability of silkworm breeds / hybrids.	Inadequate market accessibility, poor linkage among different stake holders.	Liberalization policies of Govt. of India in line with WTO Agreements.	Unpredictability of China's silk policies.
Low investment, short gestation period and higher returns.	De-centralized nature of the industry inhibits financial institute from extending financial support to the sector.	Reduction of production of silk even by traditional silk countries like Japan, USSR etc.	Inability of the silk industry to react and adopt to the changing needs in terms of quality both for the domestic and export markets.

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Easily adoptable technologies and strong domestic demand-pull.	Lack of quality based pricing system in the market, frequent price fluctuations and large scale imports from China at low prices.	Garment exports are on a steady increase with huge employment opportunities.	Lack of awareness in the domestic market to respond to the demand-driven milieu.

V. CONCLUSION

In India, Sericulture is mostly a village – based industry providing employement opportunities to a large section of the population. Although Sericulture is considered as a subsidiary occupation, technological innovation has made it possible to take it up on an intesive scale capable of generating adequate income. It is also capable of providing continous income to farmers. The present global scenario clearly indicates the enarmous opportunities for the Indian Silk Industry[5]. Sericulture industry, which is a subsidiary of the largest agriculture industry in India, offers a wide range of employement opportunities.

Sericulture offers gainful employment not only the rural masses but also for the educated youth in semi-urban and urban areas. The export of silk goods during 2003-04 was Rs 2779.19 crores (US $ 604.7 million). The silk goods exports during 2005-06 was 3194.20 crores (US $ 721.53 million) showing an increase of 11% over 2004-05 which was Rs 2879.56 crores(US $ 640.90 million)[6]. In 2011-12 the foreign exchange earned is shown decreased trend compared to 2005-06. Effective utilization of waste generated in the industry will help in making the sericulture sector more viable, stable and create more employment opportunities.

The silk production is industrial activity, is best suitable to the educated youth to produce quality silk and to earn their comfortable livelihood and to provide employment to others. Chawki rearing will provide remunerative self-employment to the rural and educated women and youth for successful cocoon crops. The trends in international silk production suggest that sericulture has better prospects for growth in the developing countries rather than in the developed countries. Being one of the largest exporter of silk, chances for boost in the economic field is comparatively high for our country, which in turn give new openings to the job seekers[7].

Sericulture, in recent times, has begun to offer a wide variety of employment and entrepreneurship options. Most importantly, every state in India has a sericulture department to focus on rearing of silk worms, production of fibre and marketing. Demand for Kashmiri silk carpets has been on the rise constantly. All this has created additional avenues for Seri culturists. With research institutions devising new technological processes. Sericulturists can find employment as officers, managers in the agricultural loan sector of nationalised as well as private banks. They can work as a manager in Sericulture Farm, Grainage, Silk Reeling (Filature), Silk weaving mill, Dyeing, Printing and Spinning mill etc. as well as in various central government sponsored schemes.

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