



Sericulture – An Entrepreneurial Spark

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ABSTRACT: In India, sericulture is a thriving culture as well as a custom. This labour-intensive, farm-based enterprise is economically attractive and falls into the cottage and small-scale sectors. It is especially advantageous for rural farmers, artists, and business people because it requires less initial investment but has the potential to yield bigger returns in the future. When compared to all other vocations, sericulture has the greatest labour force participation rate in the country, indicating that it is an industry with employment potential. It provides a source of income and employment for people living in rural areas, especially small-scale farmers and the less fortunate and marginalized groups in society. Because of its tropical environment, India has the unique advantage of being able to practice sericulture all year round, producing a steady stream of roughly 10–12 crops. The multidisciplinary field of sericulture employs diverse groups of individuals to perform a range of tasks both on and off the farm, including managing mulberry nurseries, producing silkworm seeds, rearing chawki worms, rearing late-age silkworms, reeling silk, twisting, warp and weft creation, dyeing, printing, zari-making, weaving, and other related tasks. Obviously, sericulture helps people in rural regions by creating gainful employment, fostering economic growth, and improving their quality of life. As a result, it is crucial to the anti-poverty programme and keeps people from moving from rural to urban areas in search of livelihood. In view of its entrepreneurial opportunities in each and every sector of sericulture for heterogeneous groups of people, the authors would like to highlight various entrepreneurial opportunities in the industry.

Keywords: Entrepreneurial Opportunities, Sericulture, Silk, Vanya Sericulture.

INTRODUCTION

The world admires silk, sometimes referred to as the "Golden Fibre" of the "Queen of Textiles," for its smooth, glossy, and extremely valuable animal-derived textile fiber that is used to create fine textiles. From the moment Chinese Empress Shiling shi found it in her tea cup, humanity has adored this glittering thread of unmatched magnificence. For years, silk was the unchallenged ruler of textiles, despite facing numerous formidable threats from synthetic and natural fibres. Due to its exquisite qualities, silk has become the go-to material for comfortable and royal wear all over the world. Elegant qualities like the natural sheen, innate affinity for dyes and vibrant colours, high absorbance, light weight, resilience, graceful drape, etc. have made silk irresistible, and sericulture means the cultivation of silkworms, which finally produce silk. India is an inevitable companion of all the eves all over the world. Indian culture holds a special place for silk and is deeply ingrained in Indian life and culture something that no other nation can match.

The silk saree is a significant bridal accessory, and Indian silk has enjoyed great success in the domestic market thanks to the custom of wearing silk apparel on all auspicious occasions. There will always be a need for sericulture as long as people desire to wear silk

clothing. When a fully grown silkworm larva spins its cocoon during pre-pupation, it produces natural silk, which is a dry salivary secretion. Chemically speaking, a caterpillar known as the "silkworm" secretes proteins in a fluid state that make up silk. Fibroin and sericin are the two main proteins that make up silk fibre. A cocoon's single filament can reach a maximum length of 1600 metres. One of the natural fibres, silk, produced by the silkworm *Bombyx mori*, is regarded as the most lustrous and sensual natural fabric that exists. Silk is a highly prized animal-derived textile fibre that is used to make premium fabrics. Top fashion designers throughout the world adore its products for their elegance, hues, dye affinity, thermal tolerance, and water absorbance. They are incredibly light and soft, but strong and smooth. The culturing of silkworms, which eventually yield silk Cocoon and silk. India is home to a wide range of animals that secrete silk, including a remarkable diversity of silk moth. India holds the rare distinction of being a producer of all five naturally occurring silk kinds that are commercially significant: mulberry, tropical tasar, oak tasar, eri and muga. Non-Mulberry or Vanya silks are the general terms used to describe silks derived from non mulberry sources. Mulberry silk, which is derived from it, makes up the majority of the commercial silk produced

worldwide. The only food source for the domesticated silkworm, *Bombyx mori* L., is mulberry (*Morus* spp.) leaves.

Sericulture has emerged as a pioneer in the growth of agriculture in the nation, where agriculture is changing quickly. One of the most competitive agro-based sectors nowadays is sericulture. Sericulture has emerged as a pioneer in the growth of agriculture in the nation, where agriculture is changing quickly. One of the most competitive agro-based sectors nowadays is sericulture. Being a farm-based business with a shorter gestation time and a labour-intensive and lucrative proposition, it clearly fits in well with the rural Indian economy. From its traditional position and cultural bondage, India's sericulture industry has expanded to become a commercial enterprise. The diverse cottage business of sericulture is centred on agriculture and strives to improve the socio-economic status of its practitioners. The silk industry has significant employment potential due to its small-scale, dynamic nature.

India's economy has historically been heavily reliant on the performance of arming and related agricultural pursuits. As the bulk of the impoverished in emerging nations like India live in rural areas, reducing rural poverty remains a top priority. According to World Bank estimates, over 70% of the world's impoverished reside in rural areas. A number of approaches have been taken so far to deal with this issue, and the main one is the creation of jobs in rural areas.

However, there are a number of obstacles facing the agriculture industry that have reduced its ability to create new jobs in rural area. Therefore, through better methods and means, it is vital to concentrate on a wider spectrum of the rural economy. Therefore, the development of rural-based industries, such as sericulture in particular, can be a very useful instrument for giving landless farmers a comfortable living and can also, to a large extent, alleviate the issues faced by rural women who can also earn a living from the sericulture activity (Ganie *et al.*, 2012). Savithri *et al.* (2018) stated that the domestic silk market's increasing demand has the potential to develop into a viable and profitable industry. Sericulture is a viable career option for educated youth in semi-urban and metropolitan locations, as well as the majority of rural residents. Banarsi Lal (2023), stated that With minimal initial investment and substantial yields, sericulture stands as one of the most promising agricultural careers. Rich people buy silk, which is produced by farmers from economically disadvantaged groups. It is a very useful instrument for transferring income from the wealthy to the underprivileged members of society.

Furthermore, sericulture has a great potential to give a plenty of business opportunities related to the biomedical and pharmaceutical industries, as there is nothing which is discarded from soil to fabric operations. In addition to this, sericulture sectors are associated with 7.6 million job opportunities which makes the post cocoon industry as a hub for various employment opportunities (Chauhan, 2002; Chauhan *et al.*, 2015).

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This has the potential to improve socioeconomic conditions and address the problems of unemployment standards in India's rural and urban areas. Kumar and Raj (2019) reported that entrepreneurship is vital for the economic development of any nation. The promotion of sustainable sericulture entrepreneurship is imperative to make sericulture a more profitable venture in rural areas. Promoting entrepreneurship in rural industries offers a promising solution. To create employment opportunities for the rural populace. Even though a lot of young people have creative business ideas, they struggle to launch profitable businesses due to a lack of opportunity and resources. There is a lot of room for entrepreneurship growth in the sericulture sector in Assam, India (Jugabrat *et al.*, 2024).

Silk fabric is produced by a complex web of interconnected processes. Food plant farming (producing mulberry leaves), silkworm rearing (producing cocoons), silk reeling (producing yarn), and Weaving (producing fabric) are the primary tasks of sericulture, each requiring a unique set of abilities. Out of the four, the agricultural families participate in the first two land based activities, whereas the landless people primarily attend the final two industrial events.

The industry employs a diverse range of people from different backgrounds and brings them together to produce silk since it incorporates a variety of on- and off-farm operations with a wide range of talents. In contrast to temperate sericulture, tropical sericulture is year-round and involves continuous work. Sericulture is therefore a useful instrument to end seasonal and covert unemployment in rural regions. Overall, sericulture has the exceptional benefit of tackling multiple issues associated with social empowerment and economic prosperity at the same time. A big agrarian economy like India has understood that the sericulture business, with its rural-based on-farm and off-arm operations and enormous employment generation potential, is one of the most suitable pathways for socio-economic growth. Sericulture is an especially appealing industry for continued development as a way to reduce rural poverty because of all these advantages as well as the potential of a constantly expanding domestic and global market for silk products. Therefore, sericulture can be successfully practiced as a viable rural industry because of its multi-fold advantages.

Prospects for Entrepreneurship in Sericulture.

Agriculture based sericulture is an effective tool for rural reconstruction and development. The following discusses several business options in the sericulture sector, from leaf production to fabric.

- Mulberry nursery raising
- Silkworm seed production (DFLs)
- Chawki silkworm rearing
- Production of silk cocoons
- Silk production
- Twisting of silk
- Degumming and dyeing of silk
- Printing
- Weaving of silk fabric
- Finishing of silk fabric
- Dupion silk production
- Spun silk production

- Noil yarn production
- Knitting
- Zari manufacturing
- Sericulture waste management
- Cocoon and silk-based handicrafts
- Manufacturing of sericulture appliances, materials, machines, and chemicals and marketing.

Mulberry nursery raising. Rooted cuttings with established root systems, known as saplings, are used as planting material. Once planted, saplings develop quickly and vigorously. As more and more farmers come to understand the value of starting a garden from scratch, they are opting to plant saplings. Therefore, the large-scale generation of saplings is one of the activities that can be employed to create income.

Silkworm seed production (DFLs). High-quality silkworm eggs are essential for sericulture to succeed. It is crucial to use scientific egg production techniques, from seed crop rearing to egg production, in order to produce high-quality silkworm seed. To meet the current demand for silkworm seed, there are authorized private seed producers in addition to government grainages. This is a very profitable venture; a rupee invested will yield a rupee or more in net profit.

Chawki Rearing (Young Age Silkworm Rearing). The first and second instars of the silkworm are known as chawki worms, or young-age silkworms. The proper rearing of young silkworms is essential to the efficient harvesting of cocoon crops. Successful young-age silkworm rearing elevates the cocoon yield parameters by not only reducing infant mortality but also reducing the prevalence of illness at later ages. This, in turn, lowers mortality and increases the output of cocoons. Efficient maintenance of chawki rearing centres and the provision of healthy silkworms at the completion of the second instar would lead to high earnings for chawki rearers, improve cocoon crops, and lessen the drudgery of sericulturists. As a business, it would provide substantial prospects for self-employment for educated women and youth residing in rural areas.

Cocoon Production. In order to produce cocoons, silkworms must be raised with careful coordination of numerous tasks. The silkworm takes 25 to 30 days from the day of hatching to finish the cocoon-forming process under perfect circumstances. The growing process can be finished in 20 days if chawki worms are used in place of silkworm eggs. After the completion of the fifth instar, the silkworm stops feeding and starts spinning a golden cocoon. The growers make money by selling the cocoons.

Silk Reeling. The act of unravelling and merging the silk strands from cocoons to create a raw silk thread is known as reeling. Silk production is an ideal industrial activity for educated youth to produce high-quality silk, make a comfortable living, and create jobs for others.

Silk twisting. Twisting comes next before weaving, following the reeling and re-reeling procedure. Weaving cannot be done directly with raw silk. Before the raw silk is put into looms, it must be twisted. It enhances the silk fabric's flexibility, feel, look, and quality. Twisting silk facilitates easy weaving, yarn degumming, and subsequently chemical processing. Highly twisted silk yarn is required for

specific fabric structures such as chiffon, georgette, crepe, crepe-de-chine, etc. The weavers themselves, or independent business owners, do the twisting.

Silk yarn degumming and dyeing. The process of giving a colour to textile material is called dyeing.

Dyeing changes the appearance of the fabric by adding colour. "Boiling off," sometimes known as scouring or degumming, is the initial stage of silk dyeing. By doing this, the gum present in all natural silks is eliminated. Skeins of silk are used to degum. Since silk is obtained by scouring, it can be dyed any colour or shade. One significant business venture that might generate significant profits is silk dyeing. Dyes are either made by chemical reactions in factories or are taken from natural materials; the former are referred to as synthetic dyes.

Printing. One way to explain printing is localised dyeing. The vibrant look on the fabrics is created via printing. Both manual and mechanical printing are possible. Examples of printing by hand include block and screen printing, whereas printing by machine includes direct roller, discharge, resist, and pigment printing. The preparation of printing paste, printing, print fixing, cleaning, and finishing are all steps in the printing process. One of the best businesses is printing, particularly for women.

Silk Weaving. India is a veritable gold mine of traditional silk fabrics, identified by the names of the weaving centres spread throughout the nation, each with their own distinctive and characteristic product styles. Either powerlooms or handlooms are used to weave silk. One of the biggest employment sectors in India is the handloom industry. The industry embodies the socio-cultural legacy of weaving villages and the continuation of the ancient Indian handicraft legacy. In India, the most produced item on both handlooms and powerlooms is the saree. The handlooms create sarees with a wide variety of designs, some of which are best executed by hand alone. These designs include entire motifs created with the use of dobby and jacquard. While printed sarees, clothing materials, and other items are produced on power looms, traditional silk sarees and dhotis are crafted on handlooms.

Silk Fabric Finishing. For silk fabrics that are printed or coloured to have the intended effects, they must go through specific chemical and mechanical finishing processes. The procedures are commonly referred to as "finishing treatments." Silk is often finished with calendaring, weighing, scrooping, starch, glue finishing, etc. Finishing is mostly used to add or enhance desired characteristics such as drape, fall, handling, feel, stiffness, weight, etc., which increases the material's aesthetic value and practicality. Additionally, this increases the fabric's market value. The most recent advancements are also being made in the application of specific specialty finishes, like flame-retardant, waterproof, and anti-crease treatments.

Dupion Silk Production. The extraction of silk from double cocoons is known as dupion silk. A double cocoon is spun by two silkworms. These cocoons cannot be reeled along with normal cocoons because of the entanglement of the two filaments spun by the two different worms. Dupion silk is usually a coarse,

uneven, and rough silk thread drawn from double cocoons. Since dupion silk has a pleasantly warm feel, it is much sought-after in temperate regions. Weaving dupion silk textiles of the plain, twill, matty, and satin classes requires dupion silk with an even and consistent size. This type of fabric is used to make clothing for both men and women. A small amount of dupion silk yarn is used to make shawls, curtains, carpets, and furnishings. Indian dupion silk has captured the imagination of Westerners, who are eager to use it as bed spreads, garment materials, and decorative furnishings like cushion covers and gorgeous jacquard designs. Dupion is a well-known brand among foreign importers of silk.

Manufacturing of Spun Silk. The reeling industry produces about 20–25 percent of the silk waste on the total weight of raw silk reeled. The spun In addition to this reeling waste, lower-quality and pierced cocoons that are unsuitable for profitable reeling can be used to make spun silk yarn, which is essentially pure silk thread, albeit with less evenness. The manufacturing of the spun fabric is a significant commercial venture. Suitings, shirting shantung, pile fabrics, dress linings and trimmings, sewing silk, summer wear silks, velvets, umbrella materials, and insulation are all made from spun silk.

Manufacturing of Noil Yarn. A short-stapled byproduct of the silk spinning process is known as "noil yarn." It is, in essence, the finished product of silk. Raw silk is retrieved from the cocoons, and, in the process, a by-product known as silk waste is obtained. The droppings generated in the process of spun silk manufacturing are gathered and turned into noil yarn, while this waste is transformed into finely woven silk yarn. Depending on the quality of the droppings, the noil yarn can be spun from coarse counts, like 2's, to fine counts, like 20's. The Kashmiri carpet business uses a lot of Indian noils yarn in its production.

Knitting. A vast variety of apparel items are produced by the vital activity of silk-knitting. A series of loops created from one or more yarns are interlocked to create knitted fabrics. The fundamental component of every knitting machine is the needle. The rapidly expanding natural silk apparel sector is seeing a rise in the popularity of silk knits, both for outerwear and undergarments. Nothing compares to the perfect suppleness and elastic quality that silk knitting provides to hosiery items. Five to ten percent of all silk material exports could come from knit silk fabrics. There is a significant market for silk knits, T-shirts, sweaters, and kid's clothes in Europe, the US, and Japan. China contributes much. India benefited from the availability of raw materials that were glossy and moisturising.

Zari Making. The silk core is contained in a sliver thread covered in gold called "ZARI." The gold lace zari is used to add a sophisticated touch to the cloth and create brilliant embellishments. Zari is a gold-polished silver thread that is going to be wound into a very fine silk thread. The primary location in the nation where domestic zari units manufacture zari is Surat. Zari is used in numerous decorative items as well as to embellish and enhance clothing items, including purses, scarves, collars, and dress fabrics. This industry offers

plenty of opportunities for aspiring business owners (Zafar and Inderjeet 1989).

Waste Management in Sericulture. At every stage of the sericulture activity, a significant amount of waste material is produced along with the main output. Nothing is wasted in the silk and sericulture businesses. All of the leftovers, or by-products, are valuable and have significance in the industry, whether they are litter, pupa, cocoon, or silk waste. The sericulture sector will become more viable and stable, more jobs will be created, more value-added goods will be produced, and sericulturists will earn beautiful incomes if the waste produced by the industry is used effectively. Consequently, the management and exploitation of by-products need particular attention and may enhance the appeal of sericulture (Choudhury *et al.*, 1993).

Cocoon and Silk-based handicrafts. Handicrafts made from cocoons are a great way to satisfy one's innate need to create something unique and, by using leftover cocoons and silk from the production process, to create jobs and income. Handicrafts made from cocoons and silk, such as wall hangings, dolls, bouquets of flowers, garlands, and greeting cards, require imagination and basic skills. There is a lot of scope for developing the cocoon and silk-based handicraft industries in rural, semi-urban, and urban areas by having tie-ups with various marketing agencies.

Manufacturing and marketing of sericulture appliances, materials, machines, and chemicals. As an agro-based industry, it needs a varied range of materials, appliances, machines, chemicals, etc. for the production of cocoons, silk, and silk fabrics. Hence, there is a lot of scope for rural as well as urban youth to set up an enterprise for the manufacturing and marketing of sericulture appliances, materials, machines, and chemicals to get a livelihood for them and also to provide employment to others.

Vanya Sericulture

Another sizable business with plenty of opportunities for employment in rural and tribal areas is Vanya sericulture. For a very long time, vanya sericulture was thought to be the sole occupation of tribal and hill people living in central and north-eastern India. This tribal custom has gained prominence and garnered national attention in recent years. The nation's abundant production capacity, the consistent market for Vanya silk products, the eco-friendliness of the production processes, the involvement of women, and the commercial exploitation of Vanya sericulture all promise to provide a great deal of jobs.

CONCLUSIONS

Sericulture is a viable career option for educated young people in semi-urban and metropolitan areas, as well as the majority of rural residents. Growth in sericulture will undoubtedly contribute to thriving rural development by enabling poverty reduction, producing income-generating business opportunities, and preventing the migration of rural poor from rural to urban areas. The sericulture sector appears to be a great place to work and offers a wide range of business options. An important factor in fostering a nation's

economic prosperity is entrepreneurship. In any industry, the rise of entrepreneurship increases the fundamental basis of the sector by creating jobs and opportunities.

FUTURE SCOPE

An essential factor in fostering a nation's economic development and expansion is entrepreneurship. Growing entrepreneurship in any field boosts the fundamentals of the industry by creating jobs and opportunities while also enhancing production methods and productivity. The growing demand for silk in the domestic market can make the industry a viable and valuable enterprise. The pursuit of sericulture offers gainful employment not only to the rural masses but also for the educated youth in semi-urban and urban areas, as sericulture has turned into a significant commercial venture from a secondary occupation.

All of the sericulture farmers' family members have work prospects, and the industry transforms family labour into a valuable source of revenue for the farming families. Sericulture has the potential to significantly increase household income, which will benefit a number of impoverished rural families—particularly those belonging to the disadvantaged section of society. With minimal initial investment and substantial yields, sericulture stands as one of the most promising agricultural careers. Apparently, the development of the sericulture industry will lead to vibrant rural development and provide career options to educated youth by creating income-generating entrepreneurial opportunities, enabling poverty reduction, and minimizing the migration of rural folk to urban areas in search of livelihood.

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