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Study of Sericulture & Cocoon Production in Janjgir- Champa Diistrict of Chhattisgarh (India)

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Abstract

Sericulture is a growing business for rural development since it integrates well with farming practices and has the ability to produce lucrative income all year round. It boasts affordable startup costs and offers jobs all year round. Sericulture, a cottage and small-scale industry, is a labor-intensive, economically appealing, and environmentally friendly form of agriculture. Per square meter of land, sericulture produces a lot of work and cash. Sericulture offers many opportunities for improving human resource employability and can successfully slow down population migration to cities. When compared to other crop operations in terms of generating money, sericulture is the most lucrative. The cultivation of mulberries, the generation of silkworm seeds, the rearing of silkworms, the reeling and weaving of silk, the collecting of byproducts, and their processing are all aspects of the sericulture industry that generate a significant amount of work and, consequently, a source of income for rural and tribal people. Sericulture is recognized as a thriving rural sector primarily because it offers families and labor year-round, remunerative employment, and also guarantees periodic income even with tiny land holdings.

Keywords: *Sericulture, Rural development, Silkworms*

1. Introduction

About 400 years ago, sericulture was first introduced to India, where it prospered as an agricultural sector until 1857, producing over two million pounds of silk fiber annually. Between 1857 and 1895, the industry managed to resist the Pebrine disease's assault (Mohanty, 1998). Sericulture is primarily an agro-industry that involves the craft and science of raising silkworms, food plants, rearing silkworms, and producing silk.

By satisfying the market's need for textiles, this business not only generates a significant amount of jobs but also represents Indian art, culture, and legacy. China is the world's top producer of silk, with India standing in second. Despite having a negligible market share of less than 0.2% in the global textile industry (the precise percentage is impossible to calculate because the majority of importing countries lack accurate data on finished silk), 60 nations throughout the world produce silk for these goods. Out of the 6,38,588 villages in India, there are roughly 69000 that practice sericulture, employing about 8.25 million people. 9, 47,631 families make a living from sericulture. The only nation in the world to cultivate all known commercial kinds of silk, including mulberry, tropical tasar, oak tasar, muga and eri, is India. When contrasted to other crop operations in terms of generating money, sericulture is the most lucrative. The cultivation of mulberries, the generation of silkworm seeds, the rearing of silkworms, the reeling and weaving of silk, the collecting of byproducts, and their processing are all aspects of the sericulture industry that generate a significant amount of work and, consequently, a source of income for rural and tribal people. Sericulture is recognized as a thriving rural sector primarily because it offers year-round, well-paying employment to families and labourers. It also secures regular revenue, even on small plots of land.

2. Literature Review

According to (Hanumappa and Erappa, 1985), Sericulture is essential to rural development since it works well with farming methods and has the ability to produce lucrative income all year round. It has a modest capital requirement and offers employment all year long.

Sericulture is a sustainable rural industry, according to (Dr. N. Kamalamma, et al. 1995), primarily because it gives families and laborers year-round, well-paying jobs and also secures periodic income even with limited land holdings.

(Manjeet S. Jolly, 1986) studied the productivity, procedure, and method of mulberry farming and silk worm culture, as well as their economics. The new method has also significantly increased the quality of mulberry leaves. Overall, this has led to sericulture under rainfed conditions becoming profitable with the added potential of increasing mulberry yield and producing silk worm crops that are successful.

(Rakesh Sharma, 1980) noted that the two mulberry trees grown beside roadways and trees along field boundaries are being used by Leaf as a source of food for silkworms. They discovered that the cost of raising silkworms and leaves for one ounce of silk eggs was, on average, Rs. 30 and Rs. 322, respectively. In the research region, it was projected that the net returns from both seasons will be around Rs. 596 annually.

According to (Subrata Trivedi et al., 2015), sericulture can produce higher income than other crops like rice wheat and so on. Most crops can only be produced once or twice a year, whereas sericulture can be done four to five times. The aggregate net income from the multi-farming method is Rs 42550 per year, which is still less than the 52900 produced by sericulture on an acre of irrigated land.

Silk Production In Chhattisgarh State

The Chhattisgarh region of Focal is where the majority of Kosa silk is shipped from. Bilaspur and Chandrapur in Janjgir-Champa are areas that receive silk from Focal Chhattisgarh. In addition, the Northern Chhattisgarh towns of Raigarh and Chhuri in the Katghora Tehsil of Korba are renowned for producing silk. However, Janjgir-Champa and Korba are important silk production centers in the state of Chhattisgarh.

In regional kosa centers in Chhattisgarh state, edible kosa worm plants cover 4556 hectares. About 1500 hectares of land have been discovered in the forest blocks close to the centers for the cultivation of kosa worms, from which now

4.38 crores of Palit Kosa are produced. The villagers are responsible for the output. Similar departmental efforts are taking place in this context in the 8.09 crore Kosa cocoons that are being harvested and sold by the forest inhabitants in the neighboring Haat markets from the 9844 hectares of edible tree Sal region of Natural Rally Kosa.

Figure-1 Silkworms Farming

Since silk is known as the "Queen of Fabrics," it is frequently regarded as the best natural material. Simply put, it is due to its amazing strength. Brilliant, delicate, drapable, and alluring qualities. Protein fiber known as silk is obtained from the covers that silkworms produce. In Chhattisgarh State, Kosha silk and Mulberry silk are very well recognized.

Chhattisgarh's Silk Production In "Janjgir-Champa"

In Janjgir-Champa district 520 Hectares of land with a Saja/Arjuna Plantation are currently accessible for the production of cocoon, and 500 beneficiaries are employed there to produce silk. The District of Janjgir-Champa currently produces 45 lakh silk (Cocoon), despite a need of more than 5.00 crore. So, the district government has outlined certain strategies to improve silk output. The proposed manor includes both the gauge for the current year and the next four years. By their fourth year of growth, Saja/Arjuna plants are ready to be used for silk production.

For the silk production, 500 women who make silk are to be legitimately trained in reeling in the 2016-17 year, and the preparation for this is already underway. It is advised that a total of 2500 females be ready for reeling in the following years: 2017-18, another 500 in 2018-19, another 500 in 2019-20, another 500 in 2020-21, and another 500 in 2021-22.

Table-1 Data of trained woman's in silk production

Year	No. of woman's trained in silk production during last five years
2017-18	500
2018-19	500
2019-20	500
2020-21	510
2021-22	510

After weaving, it will be necessary to involve a group of beneficiaries in coloring the woven clothing. A proposal calls for the establishment of a unit in the last five years.

Table-2 Data of Plantation for Silk Production

PROPOSED PLANTATION OF FIVE YEARS PLAN IN LAST FIVE YEARS							
S.No.	District	Plan	Years 2017-18	2018-19	2019-20	22020-21	12021-22
1	Janjgir-Champa	Arjuna Plantation (Per Hectare)	500	500	500	500	500

This study was carried out in the state of Chhattisgarh's Janjgir-Champa district in the years 2021–2022. Because Janjgir-Champa is a tasar-dominated region and is one of the major beneficiaries of this initiative, as well as having GI tags for tasar silk and fabrics, the study was purposefully carried out there. The Janjgir-Champa district consists of 9 blocks, however just two (1 x 2 = 2), namely Pamgarh and Baloda blocks, were purposefully chosen since they have a greater number of program beneficiaries and a larger area covered.

Table-3 Difficulties faced by producers in Silk Production

S.No.	Constraints	Frequency	Percentage
1	Insects, Diseases & Natural enemies are major constraints.	110	73.33
2	Lack of expertise in technical and scientific fields.	76	50.66
3	Lack of expertise in host plant training and trimming.	75	50.00
4	Rats are a major constraint for storing cocoon	68	44.33
5	Lack of summertime irrigation systems for the host plants.	62	41.33
6	Lack of good fencing facilities & protection of tasar cocoon plants.	47	31.33
7	Lack of understanding regarding the spraying of fungicides and pesticides on	22	14.66

	hosts.		
8	Inadequate understanding of bio pesticide spraying.	21	14.00
9	Inadequate marketing infrastructure present during tasar cocoon manufacture.	48	32.00

* Data are collected from multiple responses

According to the data presented in Table 3, the majority of tasar cocoon producers (73.33%) experienced difficulties due to pests, diseases, and other natural predators of tasar silkworms, while 50.66% and 50.00% of respondents experienced difficulties due to a lack of technical and scientific knowledge and difficulties with training and host plant pruning, respectively. Results from below Table 4 clearly showed that the majority of tasar cocoon producers (66.67%) suggested that knowledge of pesticides, fungicides, and biopesticides should be provided at the time of the occurrence of insects and diseases, followed by 58.66% and 57.33% of respondents who suggested that the government should encourage them to work in sericulture in addition to making clothes and providing a skill-oriented, specific, timely training program by the department. In order to safeguard stored cocoons from rats and foes, about half of the respondents recommended that regular sericultural personnel visits be guaranteed in the tasar cocoon cultivation region and storage facilities be made available to the producers.

Table-4 Suggestions from the producers in Silk Production

S.No.	Suggestions	Frequency	Percentage
1	When insects and diseases first appear, information on the best insecticides, fungicides, and bio pesticides should be available.	100	66.67
2	The government should to support their efforts to combine clothing manufacturing with sericulture work.	88	58.66
3	By the concerned department, a skill-oriented, precise, and timely training program on tasar cocoon manufacture should be organized.	86	57.33
4	It should be guaranteed that sericultural staff would frequently visit the tasar cocoon plantation area.	85	56.67
5	To keep the manufacturers' tasar cocoons safe from rats and foes, a storage facility should be made available.	75	50.00

*Data are collected from multiple responses.

4. Conclusion

Sericulture is a low-investment agricultural business that is well suited for both big and small land holdings. Typically, wealthy and middle-class urban buyers buy silk products, with an estimated 57% of the ultimate price of silk materials going back to the original rural producers. Due to its high rate of employment and ability to prevent rural-to-urban migration, sericulture can also play a significant role in eradicating rural poverty. Various initiatives have been carried out to improve the handlooming process. Displays are typically regularly planned for sale of the material in leading urban areas of State as well as beyond the State to enable the advertising of fabric created by Weavers and connect them directly with the market. At last results of the current study suggest that the majority of tasar cocoon producers face challenges from pests, illnesses, and natural enemies. They suggest providing knowledge on pesticides, fungicides, and biopesticides, and encouraging clothing production. However, half face limitations due to lack of technical and scientific knowledge.

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