SERICULTURE AND ITS PROSPECT IN PROMOTING DEVELOPMENT OF RURAL PEOPLE OF ODISHA

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ABSTRACT

Sericulture plays a unique role in Odisha's economy. Its uniqueness lies in the fact that sericulture activities not only engage the households in rearing silk worms, but also encompasses the activities of reelers and weavers. About 15000 traditional families of Odisha are involved in three types of silk such as taser, mulberry, and eri silk rearing. The total raw silk production in Odisha is 117.00 MT in which taser silk contributes more than 90 percent of total silk production of Odisha. Sericulture is run by primary rearers' cooperative societies. SERIFED, the apex society gives all kinds of support for the production and marketing of silk. Recognizing this important role of sericulture the government of Odisha has undertaken certain policies to run the department of sericulture under cooperative societies. Sericulture is an important labour- intensive sector in Odisha combining both agriculture and industry. It provides livelihood in a large section of rural and semi-urban people of Odisha. Sericulture helps in development of rural people, women empowerment, and increase children's education.

KEYWORDS: Sericulture, Raw Silk & SERIFED

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INTRODUCTION

In the world sericulture is practiced in more than 25 countries. India ranks second after China among silk producing countries in the world. India has the unique distinction of being the only country in the world which produces all four types of silk, viz- Mulberry, Tasar, Muga and Eri. Mulberry contributes about 86.5 percent of total silk production and share of non-mulberry raw silk production is about 13.5 percent. The major mulberry producing states are Karnataka, Andhra Pradesh, West Bengal, and Tamil Nadu. Jharkhand; Chhattisgarh, and Odisha are the major tasar produces state while Assam, Meghalaya and Manipur are major states producing eri and muga raw silk.

Sericulture is defined as a unique combination of art and science of raising silkworm for silk production. The term sericulture is used to denote silk moth rearing for cocoon production, reeling of yarn from the cocoon and weaving of the yarn into fabric. Sericulture means culture or cultivation of the silkworm. It is a process of breeding and rearing of the silk moth to obtain cocoons in a commercial scale. The art of silk fiber extraction from cocoons, yarn processing and weaving are also included under sericulture. Thus, it involves all aspects leading to the production of silk such as, production of egg, rearing of caterpillar till spinning, production of yarn and its

subsequent utilization etc.

Sericulture is an important agro-based cottage industry. The techniques followed are simple and require little expertise and knowledge. From the socioeconomic angle sericulture acts to provide employment generation, working hours of idle manpower like unemployed and educated youth, aged persons and housewives; income generation for poor tribal people and other economically weaker sections of the society. Sericulture is of great importance so far as rural development, socioeconomic development, industrial application, silk-export potential, environmental conservation measures and eco-friendly nature is concerned. Sericulture is a forest-based and agro-based cottage industry confined to rural areas whereas marketing of sericulture products largely depends on urban populations.

Sericulture is suited to tropical and temperate climate. It is eco-friendly and non-polluting. Both mulberry and non-mulberry sericulture require food plants, which are either naturally grown or cultivated. In the case of nature grown or natural forest, sericulture tends to conserve and preserve forests, thereby helping to save forests and forest ecosystem in a natural way. On the other hand, cultivation of host plants greatly contributes to afforestation, conserves soil fertility and reduces soil erosion. Sericulture performs a very promising role for the preservation of biodiversity and ecological balance of nature. In its activities, sericulture practices directly take care of a wide range of sericigenous flora and fauna. On the other hand indirectly maintains the habitat for the habitation of a number of plant and animal population.

OBJECTIVES OF THE STUDY

- To study the present status of the sericultural product in Odisha.
- To analyze the strength and prospect of the silk industry.

METHODOLOGY

This study is mainly based on secondary data collected from different published and unpublished sources like to publish articles, journals, OdishaEconomic Survey, Department of Textile and Handloom, Government of Odisha.

History of Silk in Orissa

Historical research reveals that tasar fabrics were exported to Rome, Egypt and South-East Asian countries by ancient Tamralipta port of Orissa around 2000 years. By the first century AD Tamralipta was famous for direct as well as transit trade for export of Chinese and Indian silk goods to Egypt and Rome, through the sea route. The remnants of Sisupalgarh and description of Chinese visitor Huen Tsang to Orissa vindicate the trade relation between Orissa and Rome. Around the sixth century trade relation between Orissa and Rome ceased when Romans learnt the art of sericulture from China. In Orissa, evidences from archaeological studies, including lithographic recordings, palm leaf inscriptions, remnants of ancient structures, etc. along with the culture, tradition and festivals observed by the present inhabitants recalling the glorious past vindicate the fact that Orissa had a fabulous wild silk thread long ago.

The tribal people of Orissa practise tasar sericulture since time immemorial. In Orissa, Tasar culture was first organized by the princely state of Mayurbhanj. It received royal patronage from the Bhanja dynasty (640-1952 AD). The glory of Tasar fabrics of Mayurbhanj spread all over India and abroad. Now a day Tasar culture is regarded as a subsidiary occupation of the tribal people inhabiting Mayurbhanj, Keonjhar, Sundargarh, Dhenkanal, Angul, Deogarh, Sambalpur, Jajpur, Boudh, Sonepur and Nuapada district.

The tasar is mentioned by the folklores and palm manuscripts of Odisha, the adivasis (tribal people) collected the cocoons, the patras (weavers) processed them into fine fabrics and the sadhabas (traders) travelled overseas for their trade. A systematic administrative management of tasar culture received the royal patronage of the Bhanja dynasty in Mayurbhanja. Thomas Wardle's 'Wild Silk of India (1880) mentions the Sambalpur area as producing about 3.3 MT of tasar. The Modal race was reported to give the best cocoons.

The Bengal District Gazetteers of 1910 mentions that tasar rearing was the traditional occupation of forest dwellers and one of the important Minor Forest Produce (MFPs) in Bonei, Bamra, Dhenkanal, Gangapur, Mayurbhanj, Narsinghpur, Nilgiri, Pallahara, Rairakhol and Sonpur states. Tasar was considered an inferior form of occupation and primarily carried out by people from scheduled caste and indigenous communities.

Mulberry sericulture was introduced in Orissa during the Sixth Five Year Plan with the establishment of some Mulberry Demonstration Firms (MDF). It was intensified during the Seventh Plan and benefits of Mulberry Sericulture were extended to readers at large. Thus, the tribal people have been associated with mulberry sericulture since 1980-81.

Rearing of the eri silkmoth (*Samia ricini* Donovan) was introduced to the State by the erstwhile Bihar-Orissa Government during 1940s. Since then it has been practiced by the tribal of Orissa as a part of their occupation for subsidiary income generation to sustain economic gain.

Present Status of Sericulture in Odisha

Sericulture is an important agro-based cottage industry. It has a huge potential to generate employment opportunities on a massive scale in rural sections of Odisha. Sericulture is a livelihood activity that goes around the year & provides remunerative income to the farmers. About 15,000 traditional families are involving silk rearing and one lakh people actively practice sericulture in Odisha. It provides indirect employment to the equal number of reelers, spinners & weavers. Out of the four types of silks viz. Mulberry, Tasar, Eri, and Muga cultivated in India, only three types namely Mulberry, Tasar, and Eri culture are practiced in Odisha.

All these types of silk differ in their food plant, duration of the life cycle, quality of cocoon and yarn viz. Size, weight, texture, color, strength, etc. At present with the support of government of Odisha tribal people & few non-tribal people under the BPL category are practicing sericulture & producing silk cocoons.

Odisha has four major eco-races such as Modal, Laria, Daba and Sukindadaba. Modal and Laria are wild eco-races of *Anthereapaphia*, whereas Daba, and Sukindadaba are semi-domesticated eco-races of *Anthereamylitta* D.

TASAR

Odisha has a rich heritage of Tasar culture. Odisha is the third largest producer of tasar in India, contributing 107 MT of raw silk production (2015-16). Tasar rearing has always been one of the important traditional occupations of indigenous communities in different parts of north-west Odisha, namely Keonjhar, Mayurbhanja and Sundargarh districts which produce 90 percent of the total tasar production in the state.

Tasar culture is very old and traditional in the State. There are about 47,284 (2015-16) scheduled caste and scheduled tribe families practicing Tasar culture in fourteen hilly districts of Odisha such as Mayurbhanj, Balasore, Keonjhar, Sundergarh, Deogarh, Sambalpur, Dhenkanal, Angul, Jajpur, Boudh, Sonepur, Kalahandi, Nuapada, Nawarangpur etc. Tribal farmers in these districts use nature grown tasar food plants in the forest for Tasar silkworm

rearing. About 8450 hectares of Asan-Arjun plantation has been taken up previously. In the Xth plan period plantation was taken up in 830 hectares additionally. Annually, more than 50,000 Kahan's of Tasar cocoons are produced and tribal farmers earn about 6 crore rupees out of it with a very nominal investment in seed. The number of Tasar reeling cocoons produced during 2015-16 is 1220.80 lakh in Odisha.

ERI

Though Eri-culture is traditional in Odisha, but much emphasis had not been given earlier for its growth. According to suitability of the climate and the possibility of adoption eri- culture to commercial basis eri-culture is practicing in fourteen districts of Odisha, i.e, Cuttack, Kendrapara, Jagatsinghpur, Nayagarh, Khurda, Dhenkanal, Angul, Sambalpur, Keonjhar, Kalahandi, Koraput, Rayagada, Gajapati, Phulbani&Sundargarh. During 2015-16 castor plantation is made in 1405 acres with 2810 beneficiaries and 7.0 MT of cocoons worth Rs 14 lakh are produced annually.

MULBERRY

Mulberry Sericulture is non-traditional activity for Odisha. Mulberry cultivation is done in twelve districts such as Gajapati, Rayagada, Koraput, Phulbani, Kalahandi, Sonapur, Deogarh, Sambalpur, Nayagarh, Khurda, Keonjhar and Mayurbhanj. An area under mulberry culture is about 1460 acres and 25.94 MT of reeling cocoons is produced during 2015-16 in Odisha. On an average 40,000 kilograms of cocoons are produced annually and about 1465 Scheduled Caste (SC) and Scheduled Tribes (ST) farmers are able to get about Rs. 50 lakh annually.

The total raw silk production in Odisha is 117 MT in which tasar position is the highest i.e., 107 MT. Mulberry raw silk production is very insignificant. It is seen from table-1 that Tasar accounts for 91.45 percent, Eri 2.57 per cent and 5.98 per cent of total silk production of 117.00 MTs in Odisha. Among the three different types of silk production tasar production is more than 90 percent, whereas other two are less than 10 percent.

Table 1: Production of Raw Silk in Odisha During 2015-16

Name of Silk	Tasar	mulberry	Eri	Total
Production in MT	107.00	3.00	7.00	117.00
Percentage of production	91.45	2.57	5.98	100.00

Source: -Odisha Economic Survey 2016-17, Government of Odisha, Planning & Coordination

Department

Silk Production in Odisha

Figure 1

Table 2: Trend of Production of Raw Silk in Odisha

S. No	Year	Tasar (in MT)	Percent of total	Mulberry (in MT)	Percent of total	Eri (in MT)	Percent of total	Total
1	2002-03	54.00	93.02	3.90	6.71	0.150	0.27	58.05
2	2003-04	37.00	94.89	1.91	4.89	0.080	0.20	38.99
3	2004-05	32.50	93.14	1.84	5.27	0.550	1.57	34.89
4	2005-06	18.65	85.66	1.52	6.98	1.60	7.34	21.77
5	2006-07	34.89	86.74	2.05	5.09	3.28	8.15	40.22
6	2007-08	47.68	87.34	2.01	3.68	4.90	8.97	54.59
7	2008-09	57.00	86.15	2.56	3.86	6.60	9.97	66.16
8	2009-10	71.00	87.33	3.30	4.05	7.00	8.61	81.30
9	2010-11	77.57	93.58	2.02	2.43	3.30	3.98	82.89
10	2011-12	89.70	93.24	2.70	2.80	3.80	3.95	96.20
11	2012-13	95.00	91.08	3.30	3.16	6.00	5.75	104.30
12	2013-14	45.14	84.78	3.30	6.19	4.80	9.01	53.24
13	2014-15	88.30	89.66	3.18	3.22	7.00	7.10	98.48
14	2015-16	107.00	91.45	3.00	2.56	7.00	5.98	117.00

Source: Department of Textile and Handloom, Government of Odisha,

Odisha Economic Survey 2010-11, 2016-17

The table 2 shows production of raw silk in Odisha during 2002-03 to 2015-16. The total raw silk production has increased from 58.05 MT in the year 2002-03 to 117 MT in 2015-16. From the table it is seen that the production has declined from the year 2002-03 and reached minimum in 2005-06, i.e. 21.77MT and then it is increasing slightly in subsequent years except 2013-14 due to the Phailin (Cyclone). The trend of production is not a straight line. The contribution of the tasar is more than 85percent during this period. This trend line has shown in figure-2.

Trend of Raw Silk Production in Odisha (in MT)

Figure 2

Progress of Sericulture Through Implementation of Projects

There were two projects already implemented in Odisha for development of mulberry sericulture. One was Bivoltine Sericulture Development Project (BSDP) in Gajapati district and another was National Sericulture Project (NSP) in Koraput district. BSDP was implemented by the State government whereas NSP was implemented by Central Silk Board (CSB), Government of India.

So far as climate is concerned both the zones are almost equal. So important reasons attributed for better performance of BSDP can be i) introduction of bivoltine hybrid rearing ii) Constant technical support provided to the farmers through the grass root level workers e.g. Demonstration Assistant and Sericulture Extension Officers. Strength of

Sericulture Industry in Odisha

Sericulture has been identified as an occupation of low investment, employment and income generating. It is found that sericulture is highly profitable as compared to many other crops. Sericulture involves simple technologies, easy to understand and adopt even illiterate farmers and it gives returns in quick succession yielding income in every two or three months. Sericulture does not require hard labor and rearing of silkworms is generally attended to by women and old people. Sericulture does not require sophisticated machinery and it involves the use of simple appliances. Sericulture ideally suits in rainfed conditions because of its low cost of production and higher returns than any other types of crops in Odisha. Mulberry plants withstand severe drought conditions and give at least some income for sustenance while other agriculture crops wither away. Sericulture is more advantageous for weaker sections of the society like schedule caste and scheduled tribes. Nonmulberry sericulture is largely practiced by tribal people. It ideally suits small and marginal farmers of Odisha.

In Odisha, sericulture department is run by the cooperative department. All the sericulture activities are done by cooperative societies. The silkworms' rearers are members of primary rearers' cooperative societies like Tasar Rearers' Cooperative societies (TRCS), Mulberry Rearers' Cooperative Societies (MRCS), Eri Rearers Cooperative Societies (MRCS) and Weavers' Cooperative Societies (WCS). There are 62 TRCS, 30 MRCS and one ERCS functioning in Odisha for the development of sericulture and in addition to these societies 61 primary weavers cooperative societies exist in the state. Rearers Societies supply eggs (df) for silkworms and provide other financial and technical guidance to rearers. Sericulture societies also provide accessories such as gumboots, umbrella, torch, knife etc. for the rearers.

Under the various schemes of Government of Odisha and Central Silk Board, Govt. of India, the rearers are being provided with improved technology for High Yielding Variety (HYV) food plant, HYV DFLs, Chawaki worms, Rearing Houses, rearing equipment, Grainage Houses, disinfectants, and marketing support. Besides technology upgradation, exposure visit and trainings are carried out for rearers and private grainers to improve the productivity. Due to the wide gap between demand and supply of silk in the state emphasis is being given to strengthening the sector through ongoing state plan schemes, Catalytic Development Program (CDP) of Central Silk Board (CSB), RKVY, MNREGS, BKOGY, etc.

Odisha Cooperative Tasar & Silk Federation Limited (SERIFED), the apex society fixes the price of cocoons and raw silk. All the rearers sell their cocoons to their respective tasar, mulberry and eri rearers' cooperative societies and then SERIFED purchases the cocoons from cooperative societies.

After purchasing the cocoons, SERIFED stores them at the TRCS/MRCS till buyers purchase them. The cocoons are also transported to designated weaving clusters, as per demand. The usual buyers are from Fakirpur (Keonjhar district), Gopalpur and Gangadharapur (Jajpur district) and Nuapatana (Cuttack district).

There are sixty-one weavers' cooperative societies in Odisha who are the members of SERIFED which also markets tasar fabrics produce through Amlan outlets across the state. These weavers' cooperative societies are also federated at the state Handloom Weavers' Cooperative Society- Boyanika, through which the fabrics produced by weavers are marketed in different parts of the state as well as outside.

Impact of Sericulture on Economy and Environment

Employment Generation: Sericulture is the part of the agriculture activities in Odisha. More than 20 lakh people are engaged in various sericulture activities. It generates more employment opportunities when compare to other industry,

especially in rural and semi-urban areas. So sericulture is used as a tool for rural reconstruction in the state.

Ideal Program for Weaker Section of the Society: Sericulture is the ideal programme for weaker sections of the society because low gestation, higher returns. Acres of mulberry garden and silkworm rearing can avoid maximum laborers and save the wages in the sericulture sector of the state. Tasar silkworm process can offer supplementary gainful for tribals compare to other sericulture activities.

Eco-Friendly Activity: Sericulture sector is an eco-friendly activity because as a perennial crop with good foliage mulberry contributes to soil conservation and provides greenery. It helps in enlarging forest coverage by plantation of host plant like Asian and Arjun. Waste form of silkworm rearing can recycle as inputs to garden. Development programmes initiated for Asan, Arjun and mulberry plantation are mainly in upland areas where unused cultivable land is made productive.

CONCLUSIONS

Odisha is a unique state in production of three varieties of silk, namely tasar, mulberry and eri. Favorable climate and participation of the cooperative sector in this field will lead to the development of silk industry to a greater height. Sericulture sector is regarded as one of the most appropriate agro-based cottage industry for rural development, environment protection, and rejuvenation. This sector not only generates rural employment and prevents rural migration, but also acts as the predominant role for the protection and preservation of ecology, heritage, and socio-cultural values. Sericulture has been identified as a promising sector of Odisha economy with the strong potential to create employment opportunities and contributes to state GDP.

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