

Current Scenario of Sericulture Production in India: A Spatio-Temporal Analysis

Dr. Mohammad Taufique*

Dr. Md Areful Hoque**

Abstract:

Sericulture is an agro-based labour intensive and rural cottage industry. It provides ample employment to the economically weaker section of the society. The study insisted that India has produced 28523 Metric Tons of raw silk during the year 2015-16. The entire study is based on **Secondary sources** of data, obtained from Central Silk Board, Mysore, Karnataka. In terms of Sericulture production, our country ranks second position after China in the whole world. Sericulture is also known as “**Queen of Textile**”. In our country India, major sericulture rearing states are Karnataka, Tamilnadu, Andhra Pradesh, West Bengal, Assam and Jammu and Kashmir states. At the same time the state faces various problems like price fluctuation of cocoon, absence of storage facility, absence of proper market, lack of financial support etc. There is a very good prospect of sericulture activities in our country India. If the present trend followed in future the state will become 65 per cent bi-voltine silkworms rearing in mulberry rearing.

Key Words: Cocoons, Industry, Marketing, Training and guidance

*Assistant Professor, Department of Geography, Aligarh Muslim University, India

**PGT Geography, Delhi Public School, Vijaywada, India

Introduction:

The word Sericulture has been derived from the **Chinese word “Su (Si)”** which means “**Silk**” and the English word “**Culture**” means “**Rearing**.” Silkworm is the caterpillar of adult silkworm. Sericulture or silk farming is the art and science of rearing of silkworms for the production of raw silk and end product is silk. In general, the production of silk from Silkworm by rearing practices on commercial scale is called sericulture. The Sericulture is the only cash crop in agriculture sector that give quick returns income to the farmers within 30 days. Silk being an exclusive fiber and popular as “**Queen of Textiles**” and is well known for its natural colour, fine, strong, purity and unusual lustrous. The textile industry occupies a unique place in our country. Sericulture is intensively labour based, agro-based commercially attractive economic activity. Sericulture provides ample employment particularly in countryside of India. Sericulture activity is mainly practiced by the rural people in association with agriculture. The major

sericulture rearing states of India are Karnataka, Andhra Pradesh, West Bengal, Jammu and Kashmir, Tamilnadu, Maharashtra etc. The Mysore and North Bengaluru is known as ‘Silk City’ of India, because this region contributes to a majority of silk production. Sericulture activity, is an agro-based cottage industry which is also known as welfare based employment oriented cottage industry, plays a vital role in the stabilization of country’s national income.

The sericulture practices in India are old as its ancient culture. The History of Sericulture in India is dates back to Buddhist period. The word used in India ‘Silk and cocoon’ is in ancient Sanskrit literature indicates that India had a kind of silkworm in very ancient time. During phase of ancient India, there was a group of traders called ‘Pundarik’ or ‘Poundabordhan’ ere practices the sericulture activity. From the philosophical evidence with reference to silk thread in Mahabharata, the Ramayana and the ‘laws of Manu.’ In Sanskrit literature silk cocoon is known as ‘Pundarik’. It can be said that the silk industry existed in India since before the Christian era. According to one view all domesticated forms of mulberry came from China. A Chinese Princess got married to a king of Tibet in 140 B.C. she brought some eggs of silkworms and some mulberry seeds hidden her headdress, from Tibet sericulture came to India. The earliest evidences of the production of mulberry silk come from the Mughal period, during which the industry had a prosperous time. According to medieval historians, sericulture was widely practiced in Kashmir, West Bengal, Karnataka and other parts of India. It has a long history, when the silk industry has faced period of great prosperity and decline. Subsequently, the East India Company patronized silk production in India to supply the raw silk to the silk weaving units from the India to Great Britain. The silkworm rearing also practices in South India during the Tipu Sultan regime.

India is the only country in the world which outturn all the five varieties of raw silk namely, Mulberry, Tropical Tasar, Oak Tasar, Eri and Muga.

Taufique, M. and Areful, H. (2018) examined that sericulture is an agro-based labour intensive, household employment generation industry in West Bengal. The major sericulture rearing belts in West Bengal are Malda, Murshidabad, Birbhum, Cooach Behar, Jalpaiguri, Nadia, Darjelling and East Mednipur. The study also reveals that there are various problems such as fluctuation of cocoons prices, absence of storage facilities, absence of proper market etc. The researchers also observed that there is very good prospect of sericulture in west Bengal. **Dewangan Santosh Kumar (2017)** examine that sericulture is the only cash crop, which provides frequent and attractive returns in tropical states of the country throughout the year. The demand of silk is growing in national and international market day by day because of its qualities. The author suggested that government should give the compensation for the losses incurred in this occupation due to diseases and negative impacts of natural factors and involvement of public private partnership for the development of sericulture in Chhattisgarh state. **B.S Angadi (2017)** expressed that sericulture is one of the most potential agricultural

vocation with low capital investment and high returns. The author viewed that sericulture in India has proved to be an ideal location for inclusive development of rural people. The country India has produce raw silk during 1949-50 was 1211 Metric tonnes but in the year 2015-16 it was 28,523 Metric tonnes. The study revealed that the labour participation rate in sericulture is highest in comparison to other similar rural occupations. The activity provides job opportunities to all family members especially women and elderly persons. **Subrata and Kunal (2014)** pointed out that sericulture is an important rural household industry in India. In this study, they have made a comparative analysis on the income generation from sericulture as compared to traditional agriculture crops. The study clearly indicates that sericulture generating more income than other cash crop like paddy, wheat, Gram, Mustard and Maize etc. Most of the crops can be grown once or twice a year but sericulture can be practiced 4-5 times in a year. Sericulture provides regular employment to the farmers which ultimately check the migration of population from rural areas to urban areas.

Silk Samagra is a advanced project related with development and promote of sericulture in India. It is initiated by the Central Silk Board (CSB), Mysore, Karnataka. The main objective of the scheme is to maintain breeders stock, breed improvement through Research and Development projects, development of mechanized practices, Technology translation through Sericulture Information Linkages and Knowledge System (SILKS) Portal, Mobile application for stakeholders and for seed quality monitoring etc. The main aim of Silk Samagra scheme is to empower downtrodden, poor and backward tribal families through various activities of sericulture in the country. It focuses on improving the quality and productivity of domestic silk thereby reducing the country’s dependence on imported silk. The Government of India has allocated Rs. 2161.68 crores for three years i.e., 2017-2020 to its Central Sector Scheme ‘**Silk Samagra**’ for the development of sericulture in the country.

Table 1. 1: Distinction of Silk, Silkworm names and Feeding plants in India

Distinction of Silk	Silkworm name	Common name of food plant rearing	Major Regions of rearing
Mulberry	Bombyxmori	Mulberry	All states the India
Tropical Tasar	Antheraeaperni Ylitta	Antheraeam Sal, Asan, Arjun	Bihar, Madhya Pradesh and Odisha, Maharashtra, West

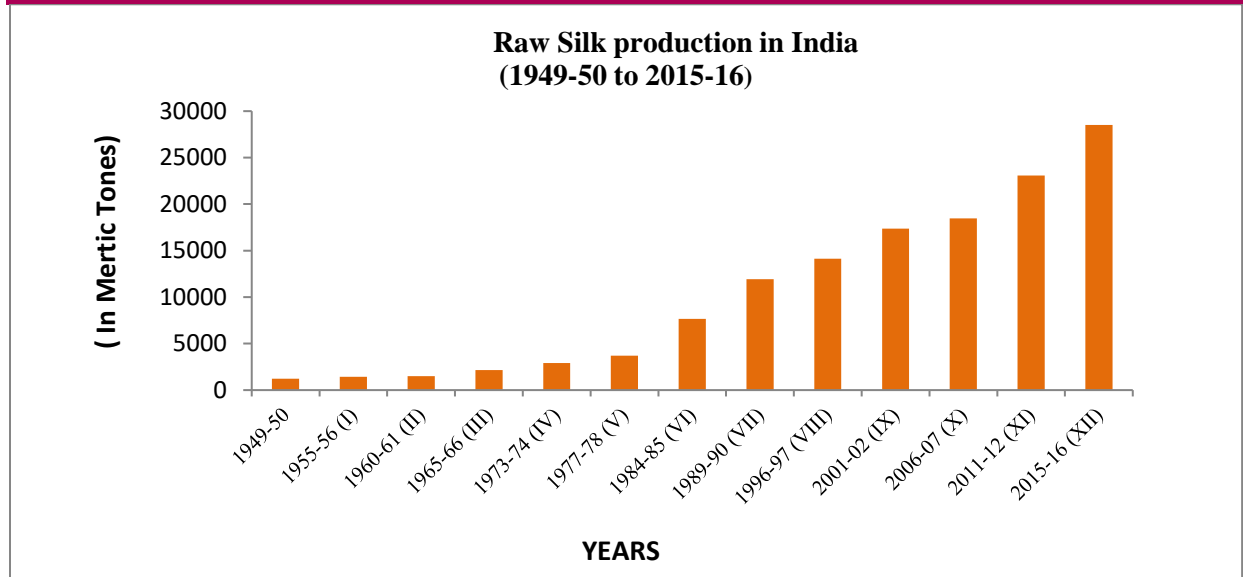
			Bengal, Andhra Pradesh
Oak Tasar	Antheraeaproylei	Oak	Sub Himalayan states (Manipur, Himachal Pradesh, Uttar Pradesh, Assam, Meghalaya and Jammu and Kashmir)
Eri	Phillosomiaricini	Castor, Tapioca, Kesseru	Assam, Bihar, West Bengal, Odisha, Manipur
Muga	Antheraeaassama	Som, Soalu	Assam (Brahmaputra river valley)

Source: Sericulture in India: Cultivation and Economics, Kurukshetra Journal, Vol.65, No.3, January 2017

Table 1. 2: Production of Raw silk at the end of each Plan Period: India

Plan periods	Years	Raw silk production (in Metric Tonnes)
N.A	1949-50	1211
I Plan	1955-56	1421
II Plan	1960-61	1499
III Plan	1965-66	2152
IV Plan	1973-74	2894
V Plan	1977-78	3711
VI Plan	1984-85	7673
VII Plan	1989-90	11916
VIII Plan	1996-97	14126
IX Plan	2001-02	17351
X Plan	2006-07	18475
XI Plan	2011-12	23060
XII Plan	2015-16	28523

Source: Central Silk Board, Mysore, Karnataka, 2015-16



Objectives of the Study:

Keeping in view of the importance of sericulture and its contribution in the Indian economy and its role in enhancing the employment opportunity in India following objectives have been taken into consideration. These are

1. To examine the growth and development of sericulture in India.
2. To analysis the spatio-temporal production of raw silk and highlighted the major silk centre of India.
3. To highlight the problems related with farmers in sericulture activities.
4. To focus the future prospect of sericulture of India.

Database and Research Methodology

The entire study is based on secondary sources of data. The data has been collected from Central Silk Board (C.S.B.) Annual Reports 2018-19, Mysore, Karnataka. After the collection of data for showing the results computer cartography has been used for showing the different bar diagram, Pie diagram etc.

Result and discussion

Table 1. 3: State-wise Raw Silk Production in India, 2016-17

State	Mulberry Plantation (Hectare)	Mulberry Raw Silk (MT)			Vanya Raw Silk (MT)			Total	Total (Mulberry + Vanya)
		Bivoltine Hybrids	Cross breed	Total	Tasar	Eri	Muga		
Andhra Pradesh	33156	1056	4914	5970	1	-	-	1	5971
Arunachal Pradesh	100	2	-	2	-	42	1	43	45
Assam	7898	52	-	52	-	3619	139	3579	3811
Bihar	421	6	18	23	44	10	-	53	77
Chhattisgarh	322	0.32	7	8	353	-	-	353	361
Haryana	183	1	-	1	-	-	-	-	1
Himachal Pradesh	2245	32	-	32	-	-	-	-	32
Jammu and Kashmir	8444	145	-	145	-	-	-	-	145
Jharkhand	372	-	1	1	2630	-	-	2630	2631
Karnataka	91492	1488	8083	9571	-	-	-	-	9571
Kerala	126	11	-	11	-	-	-	-	11
Madhya Pradesh	5597	30	54	84	26	-	-	26	111
Maharashtra	3480	228	3	231	27	-	-	27	258
Manipur	7548	149	12	161	5	363	1	369	529
Meghalaya	3209	28	-	28	-	872	27	899	927
Mizoram	4009	47	18	65	0.02	11	0.26	11	76
Nagaland	290	7	1.37	8	0.08	669	1	670	678
Odisha	686	3	0.11	3	116	6	-	122	125
Punjab	1129	3	-	3	-	-	-	-	3
Sikkim	198	6	-	6	-	3.00	0.17	3	9
Tamilnadu	17574	1627	288	1914	-	-	-	-	1914
Telangana	2650	105	7	112	7	-	-	7	119
Tripura	2450	75	-	75	-	-	-	-	75
Uttar Pradesh	4212	97	114	211	22	36	-	58	269
Uttarakhand	3029	31	-	31	0.02	3	-	3	34
West Bengal	15990	38	2486	2524	37	4	0.20	41	2565
Total	216810	5266	16007	21273	3268	5637	170	9075	30348

Source: Central Silk Board Annual Reports, 2016-17

The table 3.1 depicts that the states-wise raw silk production in India. During the year 2016-17 the state like Karnataka, Andhra Pradesh, Tamil Nadu Jammu and Kashmir, West Bengal, Assam is the major traditional sericulture rearing states of India. During the year 2015-16 the West Bengal has produced 2565 Metric Tonnes of raw silk, Karnataka states has produced 9571 Metric Tonnes of raw silk, Andhra Pradesh has produced 5971 Metric Tonnes of raw silk, Tamil

Nadu has produced 1914 Metric Tonnes of raw silk due to large holding size of mulberry gardens, large number of sericulture farmers in these states, suitable climate, suitable soil, assured irrigation facility, availability of silkworms egg fro silkworm rearing, loan facility from the private and commercial bank, market facility, availability of mulberry plants nurseries, availability of production of seeds, consumption of chemical fertilizers, literate farmers, availability of Training service centre, large number of areas having electricity facility, good quality production of Dfls, large number of weavers, maximum number of *chawkie* reeling units, availability of storage facility, better infrastructural facilities etc.

Major problems:

- 1. Lack of education among the sericulture workers:** Sericulture of Malda district is mostly carried out by the illiterate person. Not a single post graduate or other degree holders rearing this activity. Usually, educated youth do not come forward to take up this occupation. Sericulture is mostly run by the illiterate people of the society, who have no idea about scientific as well as commercial process of rearing silkworms.
- 2. Price fluctuation of Cocoons:** The prices of Cocoons are fluctuated from one season to another season. The government of West Bengal or Ministry of Textile (Sericulture), West Bengal should fix the remunerative price for cocoons which in turn helps the farmers to overcome the problem of violent fluctuation in cocoon prices.
- 3. Middlemen interference:** Due to absence of sericulture market in the district, large number of middlemen and traders engaged in this activity. The middlemen or the traders are moving door to door to purchase the cocoons from sericulturists. So, the farmers are unable to getting the remunerative price for their hard work.
- 4. Competition with different cash crops:** Sericulture of India has been facing strict competition with different cash crops like paddy, jute, mango, *litchi* and other horticulture crops. These cash crops are especially market oriented.
- 5. Financial / Credit problem:** Finance is the main pre-requisite of every productive operation. So, the success of this sector depends on adequate financial aid. In sericulture activity, fixed capitals are required for every step such as mulberry leaves plantation, construction of rearing houses, rearing and grain-age equipments. Negligible amount of the grant is generally available to only few selected rearers. Apart from this, most of the rearers are poor and they have to take large scale rearing on commercial basis.
- 6. Absence of storage facilities:** There is lack of storage facilities in district. The storages facilities are located only in Englishbazar and Kaliachak-I block. For surplus production of cocoons and raw silk, well equipped storage facilities are required.

7. **Attitude of the society towards sericulturists:** In this modern age, some sections of the society who accord lower status to the people who are engaged in rearing of silkworms.
8. **Erratic seasonal conditions and effect of natural hazards:** Erratic or extreme flood, seasonal conditions and cyclone (*KalBaisakhi*) put hurdles in silk worm rearing. They destroy the mulberry plants gardens and also cause the spread of diseases among the silkworm insects.
9. **Poor information on market trend:** Lack of marketing information is another bottlenecks faced by this industry due to which reelers are not getting remunerative price for their finished products. There is not a single agency by the government which may provide the market trend information to the sericulturists in the study area.
10. **Problem related to training and technical guidance:** Silkworm rearing requires technical guidance and in the absence of training and guidance, the rearers are not able to carry out the sericulture activities properly and efficiently, which result into the poor production of cocoons. There is a lack of technical staff in Sericulture Department.

Suggestion and Policy Implication:

- There is an urgent need to establish regulated marketing system among different districts in the various states such as West Bengal, Karnataka, Andhra Pradesh, Tamil Nadu, Himachal Pradesh, Assam and Jammu and Kashmir etc.
- The Central Silk Board, Mysore ,Karnataka should take necessary steps to educate the farmers by conducting meeting, training programme, publishing materials in vernacular languages and extending messages to traditional sericulture practices in different states of India such as West Bengal, Karnataka, Andhra Pradesh, Tamil Nadu, Himachal Pradesh, Assam and Jammu and Kashmir.
- The Department of textile (Sericulture), should supply mulberry sapling and silkworms eggs to the sericulture workers to different blocks of the district at subsidized cost and encourage them to cultivate at various the various states such as West Bengal, Karnataka, Andhra Pradesh, Assam and Jammu and Kashmir etc.
- Other important pre-requisite for the growth of sericulture in the state is financial or credit facility. The government should provide long-term as well short term loans for mulberry plantation, construction of rearing rooms and for rearing equipments in the sericulture farmers of West Bengal, Karnataka, Andhra Pradesh, Tamil Nadu, Himachal Pradesh, Assam and Jammu and Kashmir.
- For the development of sericulture in India, the effective training of silkworms rearing and mulberry plantation should be given to the at various the various states such as West

Bengal, Karnataka, Andhra Pradesh, Assam and Jammu and Kashmir etc. rearers of which in turn may increase the quality of silk cocoons and mulberry plantation.

- Promotion of organic farming in sericulture is needed to the at various the various states such as West Bengal, Karnataka, Andhra Pradesh, Assam and Jammu and Kashmir etc. This will make sericulture as more profitable activity in the different states of India.
- The Ministry of Textile (Sericulture), Government of India should fix the minimum standard price of cocoons. So, that the sericulture farmers of the various states such as West Bengal, Karnataka, Andhra Pradesh, Assam and Jammu and Kashmir etc. may get the remunerative price for their hard work.
- Effective extension services should be provided to Sericulture farmers at all stages. There should be a Public Private Participation (PPP) for the better development of sericulture in at various the various states such as West Bengal, Karnataka, Andhra Pradesh, Assam and Jammu and Kashmir etc.
- The Ministry of Textile (Sericulture), Government of India should promote bi-voltine (white races) of silk production on commercial basis at various the various states such as West Bengal, Karnataka, Andhra Pradesh, Assam and Jammu and Kashmir etc.
- The Higher Education Department, Government of India should take required steps to include sericulture course in the syllabus at higher secondary and college level as an elective subject with necessary facilities. This process would motivate the educated youth to adopt innovative inputs and in return this will flourish the entire sericultural activity at various the various states such as West Bengal, Karnataka, Andhra Pradesh, Assam and Jammu and Kashmir etc.

Conclusion:

Sericulture activity is the employment generating rural household cottage industry in India. There is a very good prospect for the development of sericulture activities in India. It provides ample employment and income in the rural areas and also thereby helps in alleviating poverty in the countryside of India. If the present trend to be followed in future, the country India will become 60 percent bi-voltine silkworms rearing in mulberry sector. The farmers of sericulture in India are very happy with this activity by earning good returns. Finally co-operation from various sections like officers, Researchers, artisans, traders, rearers etc. engaged in activities related to sericulture is necessary for the successful growth of the sector. The future of sericulture industry in India is seems to be very bright and the state will have to take a big leap in coming years.

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