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Scenario of sericulture industry in Maharashtra State, India

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Abstract

Sericulture is one of the oldest industries in India and Asia. Sericulture is an agro-cottage, forest based industry, labor intensive and commercially attractive economic activity falling under the cottage and small-scale sector. The silk is the final product of this industry. It particularly suits to rural population working with agriculture, entrepreneurs and artisans as it requires low investment with potential for relatively higher returns. It provides income and employment to the rural poor especially, farmers with small land-holding and marginalized and weaker sections of the society.

Maharashtra is a nontraditional sericulture state producing Mulberry and Tasar silk. The specialty of the state is that, it undertakes 98% of bivoltine sericulture and stood first among nontraditional states and one of the potential States in India for silk production. The bivoltine sericulture development has been one of the priority sectors of Indian silk industry but its production is yet to meet the targets. Women play a dominant role in this sector, as the activities are mostly home-based. Women have been contributing to all the sectors of Sericulture starting from on-farm activities to fabric production, marketing and consumption. The involvement of women in different activities of Sericulture is well above 53 per cent Gangopadhyay, 2008^[1].

This paper mainly focused on socio- economic development, employment generation, and sericulture sector activities in the state. Sericulture industry requires low investment and it helps to earn higher returns in short gestation period, due to this the farmers are getting attracted to this sector and it is a best tool to improve the rural economy as well as to improve their living standards. It is a boon to the rural population associated with agriculture and helping them to avoid suicidal attempts by earning very good amounts throughout the year.

Keywords: Sericulture, agro-cottage based industry, employment generation, socio-economic development, Raw silk, Maharashtra state etc.

Introduction

The sericulture industry is a labour intensive and has very good potential to provide employment to the rural mass at their local level. It is an ecofriendly activity which provides an opportunity to rural mass to uplift their socio economic status. Sericulture is an ideal programme for weaker section of the society because low gestation, higher returns. Acres of mulberry garden and silkworm rearing can avoid maximum laborers and save wages in the sericulture sector of the state^[2]. Tasar silkworm process can offer supplementary gainful employment for tribals compare to other sericulture activities. India is the second largest producer of raw silk after China and the biggest consumer of raw silk and silk fabrics and has the unique distinction of producing all the four varieties of silk viz., Mulberry, Tasar, Eri and Muga, Giridhar *et al.* 2010^[3]. In India this industry has very good strength and opportunities with very little weakness,^[4] which has enlisted as follows.

Strength

1. Low investment, short gestation period and higher returns.
2. Large agricultural land and labour base, availability of skills, suitable agro climatic conditions and modern technologies.
3. Established infrastructure, availability of silkworm breeds / hybrids.
4. Availability of improved high yielding mulberry varieties.
5. Easily adoptable technologies and strong domestic demand-pull.
6. Carbon emitting is minimal as the industry is agro-based and labour intensive.

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Opportunities

1. Generation of employment for the unemployed youth and rural population and reduction of migration to urban areas.
2. Liberalization policies of Govt. of India in line with WTO Agreements.
3. Reduction of production of silk even by traditional silk countries like Japan, USSR etc
4. Garment exports are on a steady increase with huge employment opportunities.
5. Uses of sericulture products for non-textile purpose.
6. Land unsuitable for food crop cultivation could be used for sericulture.

Weakness

1. Gaps in technology transfer and extension support.
2. Inadequate market accessibility, poor linkage among different stake holders.
3. De-centralized nature of the industry inhibits financial institute from extending financial support to the sector.
4. Lack of quality based pricing system in the market, frequent price fluctuations and large scale imports from China at low prices.

Methodology of the Study

The relevant data is collected from different sources by visits. These data are collected from various sources like- Published articles, journals, newspapers, Maharashtra economic survey, and the Maharashtra state department of Sericulture, and research articles.

Sericulture at global level

The sericulture plays an important role in global and particularly rural economy. China is the first and largest silk

producer country and India stands second highest silk producers of raw silk and consumer of pure silk at global level. The major silk producing countries in the world are; China, India, Uzbekistan, Brazil, Japan, Republic of Korea, Thailand, Vietnam, DPR Korea, Iran, etc. Few other countries are also engaged in the production of cocoons and raw silk in negligible quantities; Kenya, Botswana, Nigeria, Zambia, Zimbabwe, Bangladesh, Colombia, Egypt, Japan, Nepal, Bulgaria, Turkey, Uganda, Malaysia, Romania, Bolivia, etc. The major silk consumers of the world are; USA, Italy, Japan, India, France, China, United Kingdom, Switzerland, Germany, UAE, Korea, Viet Nam, etc.

There is an increasing demand of silk and silk products from developed countries which lead to earn foreign exchange. This helps to improve the economic status of the developing countries [5].

Sericulture in India

India is the only country in the world which produces all the four varieties of silk namely Mulberry, Eri, Tasar and Muga. Mulberry is the largest practiced sericulture industry in India. Mulberry silk production contributes almost 75 percent for entire silk production in the country. India has second highest silk producer of raw silk and consumer of pure of silk [6]. In India, silk production has improved manifold in recent years. Sericulture provides livelihood to large section of the rural and semi- urban population i.e. for the people engaged in pre-cocoon to post- cocoon sectors of sericulture industry [7]. In recent years the Sericulture is opted by many farmers as a cash crop in the agriculture sector and it is a boon to the farmers to change their socio economic status [8].

Silk production and Employment Generation in India for the period 2010-2015.

Year	Raw Silk production		Total Raw	Cumulative Employment
	Mulberry	Vanya	Silk Production (MT)	generation (Lakh persons)
2010-11	16,360	4,050	20,410	72.50
2011-12	18,272	4,788	23,060	75.60
2012-13	18,715	4,964	23,769	76.53
2013-14	19,476	7,004	26,480	78.50
2014-15	21,272	7,195	28,467	80.30

Source: The data resource from Central Silk Board, Bangalore (Central office.) [9]

India is the Second largest producer of silk in the World. Among the four varieties of silk produced, in 2014-15, Mulberry accounts for 74.73% (21,272 MT), Tasar 8.44 % (2,404 MT), Eri 16.27% (4,633 MT) and Muga 0.55% (158 MT) of the total raw silk production of 26,467 MTs. [4] The

employment generation in the country is raised to 8.03 million persons in 2014-15 compared to 7.85 million persons in 2013-14, indicating a growth of 2.29%.

The State-wise production of Raw silk in India during 2012-13, 2013-14 & 2014-15 are given in Annexure-I [9].

In India, State wise Raw Silk production during the XII plan period (2012 to 2015) in MTs.

Sr. No.	State	Achievements		
		2012-13	2013-14	2014-15
1.	Karnataka	8219	8574	9645
2.	Andhra Pradesh	6550	6912	6485
3.	Telangana	--	--	100
4.	Tamil Nadu	1185	1120	1602
5.	Kerala	6	4	7
6.	Maharashtra	97	122	222
7.	Uttar Pradesh	157	188	236
8.	Madhya Pradesh	190	195	177
9.	Chhattisgarh	391	391	200
10.	West Bengal	2070	2079	2500
11.	Bihar	22	52	53
12.	Jharkhand	1090	2003	1946
13.	Orissa	104	53	98
14.	Jammu & Kashmir	145	136	147
15.	Himachal Pradesh	23	25	30
16.	Uttarakhand	17	22	29
17.	Haryana	0.13	0.13	0.3
18.	Punjab	5	4	4
19.	Assam & Bodoland	2068	2766	3222
20.	Arunachal Pradesh	22	15	28
21.	Manipur	418	487	369
22.	Meghalaya	517	644	655
23.	Mizoram	40	44	50
24.	Nagaland	324	606	619
25.	Sikkim	3	0.20	8
26.	Tripura	15	40	36
Total		23,679	26,480	28,467

Sericulture in Maharashtra State:

Sericulture industry is very age old in Maharashtra state. The Sātavāhana Empire was a Indian dynasty based from Dharanikota and Amaravati in Andhra Pradesh as well as Junnar (Pune) and Pratisthan (Paithan) in Maharashtra. The territory of the empire covered much of India from 230 B.C onward. The Satavahanas influenced South-East Asia to a great extent, spreading Hindu culture, language and religion into that part of the world. Paithan the ancient city of Pratisthan is beautifully situated on the left bank of the river Godavari. Since the second millennium B.C. the dawn of the

Goda Valley Civilization it has played a vital role in shaping the culture of the region and has been a sacred place for the Hindus, the Buddhists and the Jains.

From ancient times Paithan was important emporium of trade and commerce with links connecting it to marts in India and in Europe. Paithan gained the epithet as “Supratisthana “ not only for its political importance as the capital city during the long rule of the Satavahanas and of great consequence till the Yadavas, but also for its affluence and of highly advanced civilization. Its importance has also been vouchsafed in the writings of the foreign travelers and geographers. As a great commercial centre, it was very well linked with the other important towns of ancient India and the western world. Its exports had earned great reputation in the western markets and had achieved international renown. Its quality silk textiles such as the Paithani had no parallel in the contemporary world. Himroo is a fabric made of Silk and cotton, which is grown locally in Aurangabad. Himroo was brought to Aurangabad in the reign of Mohammad Tughlaq, when he had shifted his capital from Delhi to Daulatabad, Aurangabad in Maharashtra state.

In early period i.e. from 1959, the industry was looked after by Khadi and Village Industries Board but from September 1997 a separate Sericulture Department has come in existence under Textile Ministry in the state. In Maharashtra state Mulberry sericulture is practiced in 24 districts and Tasar in six districts. It stood first among nontraditional silk producing states, produces 98% of Bivoltine silk and rank fifth in overall silk producing states in India.

Maharashtra is a non-traditional mulberry silk producing state in the country occupying 1st position amongst non-traditional state. Mulberry sericulture is practiced in 24 districts of Vidharbha, Marathwada and Western Maharashtra by 5397 families having 6932.50 acre plantation by March, 2015. The main districts are Pune, Solapur, Satara, Sangli, Ahamadnagar, Aurangabad, Osmanabad, Beed, Buldhana, Jalna, Nanded, Latur, Akola, Nagpur Wardha. Besides mulberry it is a minor but traditional tasar producing state, 2757 families mainly belong to Dheewar community practice Tasar sericulture. The Tasar silk development program is carried out in 4 districts of Vidharbha region i.e Gadchiroli, Bhandara, Chandrapur and Gondia and also in Thane and Yavatmal districts of state but it is on pilot basis. The details of area under host plantation, DFLs consumed, raw silk production and employment generation during the year 2010 to 2015 is shown in Annexure-II; A & B Table ^[10,11]

A. Status of Mulberry sericulture in Maharashtra State from 2010-2015

Year	Mulberry Area (Acre)	No. of Farmers	DFLs Consumed (in lakh)	Cocoon Produced (MT)	Total Raw Silk Produced (MT)	Bivoltine Raw Silk Produced (MT)	Employment Generation (in Lakh) 1255 man-days / yr / ha)
2010-11	7326	4892	30.59	1590.18	198.77	88.52	36.78
2011-12	5816	4004	22.26	1227.80	169.41	83.4	29.20
2012-13	4385	3201	12.68	700.029	87.50	62.598	22.01
2013-14	3720	3057	13.53	760.966	111.52	106.63	18.68
2014-15	6934.5	5397	23.053	1318.827	202.648	199.411	22.29

B. Status of Tasar sericulture in Maharashtra State from 2010-2015.

Year	Tasar food plant (Ha)	No. of Farmers	Tasar villages	DFLs Consumed (in lakh)	Tasar Cocoon Production Lakh nos.	Estimated silk yarn production (MT)	Employment Generation (in Lakh) (150 /kg raw silk)
2010-11	18,866/5600*	1850	150	5.75	168.61	6.74	10.11
2011-12	18,866/6015*	2708	162	8.37	308.65	12.35	18.52
2012-13	18,866/8788*	2259	162	9.47	243.83	9.75	14.62
2013-14	18,866/6491*	1492	180	6.38	187.16	10.199	15.29
2014-15	18,866/9,765*	2811	171	11.03	348.120	18.97	28.46

* Utilized for rearing

Facilities Provided by the State Government for Promotion of Sericulture in Maharashtra State:

- Supply of planting material and quality DFLs to farmers.
- Free trainings and technical guidance to sericulturists.
- Financial support from district planning programme for plantation material transport cost, DFLs and trainings.
- Minimum support prices to cocoons and market facility at Govt. offices.
- Implementation of catalytic development programme sponsored by central silk board.
- Startup rearing appliances kit to farmers through RKVY programme.
- Crop and Health Insurance to sericulturist is implemented.
- Implementation of scheme of Marketing Support to Reelers which is helping to provide better prices to cocoon growers.
- Implementation of scheme Cluster Development Programme and development of sericulture area in cluster mode.
- Mulberry plantation through MGNERGA support.
- Implementation of scheme Chawkie worm supply is helping farmers to save labour charges and time. It has given impact to earn very good quality cocoon yield and for fetching better prices.
- Implementation of scheme i.e. reeling units, twisting units and incentive to reelers is helping farmers to get better prices to their cocoon as forward linkage is established.
- Supplied looms to weavers and created forward linkages.
- Central Sericultural Research and Training Institute, Mysore provided different research technology in Mulberry plantation and also in silk worm rearing with quality DFLs Supply. These are transferred to farmer's level through extension.
- Development of low cost technologies and emphasis is given on the plantation programme through saplings only. It has helped a lot for stability of garden and success rate and survival rate have increased tremendously. A low cost effective technology in Mulberry plantation raising is given i.e. single bud cutting for sapling raising or Nursery plantation.
- Trainings, study tours, field days, demonstrations to farmers and staff to upgrade skills. Timely visits and technical guidance to farmers.

Problems of Sericulture Industry in Maharashtra State:

- High cost of labor and non-availability of timely labors.
- Competition with region wise different cash crops.

- Erratic or extreme seasonal conditions in some parts of state, put hurdles on silk worm rearing.
- Majority of new farmers do not built rearing houses in time and lead to late rearing and facing economic loss.
- The farmers are not supplied with 100% chawkie worms but DFLs are also distributed.
- Lack of skills among farmers to undertake the chawkie rearing at their own level.
- Farmers conduct rearing in open rearing houses without proper disinfection; they do not have separate mounting halls.
- Majority of the farmers do not disinfect their rearing houses and equipment properly.
- Hygiene and proper climate is not maintained during rearing leads to disease outbreak some times and crop losses.
- Majority of the farmers are not putting proper inputs to Mulberry garden resulting in poor quality of mulberry leaf leading to prolonged larval duration and also low yield of cocoons.
- Shortage of irrigation prevails in some area and it is a major constraint, which effects on no. of crops per year; quality and quantity leaf yield.
- Vermicomposting is not adopted seriously which leads to incur more amounts on chemical fertilizers by the farmers.
- Cleaning and grading of cocoons is not done properly while sending to market and farmers are unable to get remunerative price to their cocoons.
- Weak sericulture Extension mechanism.
- Training and research facilities are not up to the mark.
- Poorly developed reeling sector.
- Marketing facilities are not adequate and farmers have to travel very long distance in Karnataka/Andhra Pradesh to sell their cocoons.
- No incentive on cocoon production and chawkie worm supply in the state.

Steps for Further Development of Sericulture in Maharashtra State

- Trainings and motivation to the staff for skill upgradation and work culture inculcation.
- Effective and efficient utilization of manpower for better extension activities.
- Establishment of region wise best training and research centers.
- Further enhancement in area under Mulberry plantation.
- Concentration of efforts on small and marginal farmers.

6. Introduction and development of region and season specific mulberry varieties and silkworm races.
7. Area under mulberry cultivation should be increased through large scale plantation of improved mulberry cultivars.
8. Promotion of mulberry sericulture enterprise in draught prone and backward areas through tree plantation with the help of MGNERGA.
9. Special efforts to cut down the labor cost in all sericulture activities by promoting automation and mechanization.
10. Promotion to organic sericulture and effective utilization of by products to make sericulture as more profitable venture.
11. Emphasis should be given on private participation for development of different sectors of sericulture industry.
12. Study tours/farmer tours to research institutions and advanced sericulture states should be organized regularly
13. Appropriate, good and easy market facilities to farmers, reelers, twisters and weavers etc.
14. Joint efforts of all the stakeholders and farmers improve status of sericulture in the state.
15. Inter departmental collaboration and assistance for development of sericulture sector.
16. Special incentives to farmers and reelers have to be extended.
17. Crop loans and other subsidies should be provided to the sericulture on the line of other horticultural, agricultural crops.

Conclusion

The Maharashtra state is having a very good potential for sericulture and to undertake the production of quality bivoltine silk. In future the state will become 100% Bivoltine silkworm rearing in Mulberry sector. It is a serious need to establish the best trainings and research centers in the state to provide the best technologies suitable to the local mass and also to inculcate modern technologies in sericulture among the sericulturists and extension staff by upgrading their skills. As the state is nontraditional in silk production activities, it is essential to extend incentives on different activities as provided by traditionally silk producing states. The sericulture activity remained as a boon to the farmers in such adverse climatic conditions and to overcome the draught situations in Maharashtra. The farmers are very happy with this activity by earning good returns and are satisfied with sericulture. Thus future of the modern silk industry in Maharashtra is very bright and the state will take a big leap in coming years and will be at par with traditional silk producing states.

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