

Impact of sericulture industry on Jammu and Kashmir Economy: (With Special reference to District Baramulla)

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Abstract

The main aim of this article is to highlight the impact of sericulture industry in J&K with special reference to district Baramulla. Sericulture industry has occupied a prominent place in the industrial development in Jammu and Kashmir. Jammu and Kashmir produces the best quality Bivoltine Mulberry silk in the country due to its longer length better strength and shine mainly because of conducive climatic conditions. Sericulture or silk farming is the rearing of silkworms for the production of silk. Although there are several commercial species of silkworms, Bombyx mori is the most widely used and intensively studied silkworm. Sericulture has become one of the most important cottage industries in a number of countries like China, Japan, India, Korea, Russia, Italy and France Today, China and India are the two main producers, together manufacturing more than 60% of the world production each year.

Keywords: Sericulture, Industrial development, Baramulla, Producer

Introduction

Sericulture or silk farming is the rearing of silkworms for the production of silk. Although there are several commercial species of silkworms, Bombyx mori is the most widely used and intensively studied silkworm. Sericulture has become one of the most important cottage industries in a number of countries like China, Japan, India, Korea, Russia, Italy and France Today, China and India are the two main producers, together manufacturing more than 60% of the world production each year.

Sericulture is an agro-based industry. It involves rearing of silkworms for the production of raw silk, which is the yarn obtained out of cocoons spun by certain species of insects. The major activities of sericulture comprises of food-plant cultivation to feed the silkworms which spin silk cocoons and reeling the cocoons for unwinding the silk filament for value added benefits such as processing and weaving. Silks is a natural fiber that is produced by the silks worn the caterpillar larva of the domesticated silk moth Bombyx mori. The cultivation of silk from silkworms is a process known as silk farming, or sericulture. Silkworms were first discovered by the Chinese around 2,700 BC and for many centuries, the Chinese were the only civilization with the knowledge to make silk but eventually, the secrets of sericulture spread to other parts of the world. Here, we explore how silk is harvested and turned into silk threads.

Sericulture industry in Jammu & Kashmir state is of very old origin. The department of sericulture was created in the 1889 under the monopolistic control of government of promote silk industry in the state. In this regard a very good infrastructure including mulberry nurseries, silk worn seed stations and silk reeling/weaving factories were established. Due to these efforts Jammu and Kashmir became one of the leading silk producing states. During those days sericulture was the only cash crop available to the farmers. By 1940, about 52000 families were engaged in this activity and the production of cocoon was as high

as 15.00 lac kgs. Silk yarn apart from its use as a textile fiber, was being utilized as material for parachutes. Department of Sericulture functions under the control of Ministry of Agriculture, Govt. of Jammu and Kashmir.

Jammu and Kashmir produces the best quality Bivoltine Mulberry silk in the country due to its longer length better strength and shine mainly because of conducive climatic conditions. However out of total production of cocoons every year only 20-25% is being consumed within the State and the rest is exported. The estimated production of raw silk yarn is 92000 kgs annually.

Sericulture continues to be a subsidiary occupation for about 23900 rural families in the state. Most of these families belong to economically backward sections of the society. During 2013-14, up to November or Rs. 2026.00 lacs for these silkworm rearers. The Department blocks over an area 2215 acres across the State. The nurseries are utilized for production of saplings / cutting for further distribution amongst farmers to augment area under mulberry and mulberry blocks which serve as leaf reservoirs for the landless and marginal farmers. Annually about 20.00 Lac plants are products from these nurseries against the potential of 30.00 Lac plants. The Department has well established seed organization and presently about 60% local annual seed demand is met out from the sector.

Role of J&K state in Bivoltine Sericulture

Sericulture being one of the traditional agro based cottage industries of the state producing high quality Bivoltine Silk comparable to international quality helps in Improving economic conditions of the rural masses and providing employment opportunities in pre and post cocoon activities.

The Bivoltine Sericulture development has been one of the priority sectors of India silk industry and its production is yet to meet the targets. The topographical Status of the state has an edge to produce Bivoltine silk having tremendous market.

Achievements

- During the current financial year 2013-14, the cocoon production is recorded to the extent of 1021 MT against 901 MT during 2012-13 showing an increase of 120 MT more than the previous year crop production mainly due to impact of Implementation of Centrally Sponsored Schemes on incentive basis.
- By way of sale of cocoons the income generation to farmers during the current.
- Financial year 2013-14 is Rs. 2026.00 lac as against Rs. 1193.00 lac during 2012-13 showing an increase of Rs. 833.00 lac over the previous year, constituting 70% increase. This increase in cocoon prices has been due to the introduction of Hot Air drying facility of scientific drying of silk cocoons and use of High silk yielding double hybrids in the field.
- The raw silk production during the current financial year 2013-14 is 136 MT as against the production of 115 MT during 2012-13, thereby showing an increase of 21 MT over the previous year production.
- Average price for "A" grade silk cocoons during the current financial year 2013-14 increased to Rs. 510/kg. Per green cocoon against Rs. 450/kg per green cocoon of 2012-13, showing an increase of Rs. 60/- per kg over the previous year average rate, constituting about 13% increases.
- Overall average price of cocoons (all grades) during the current financial year 2013-14 remained Rs. 950/- per kg green against Rs. 392/per kg green during 2012-13, showing an increase of Rs. 533/per kg average rate over the previous year, constituting 139% increase.
- Number of silkworm rearers has risen to about 29300 during the year 2013-14 from 27786 during 2012-13 registering an increase of about 5.5% in cocoon grower's population.
- During the year 2012-13, 4962 Women rearers have been covered under Health Insurance Scheme, under Catalytic Development Programme and 2500 more beneficiaries are being covered during current financial year 2013-14.
- To augment area under mulberry plantation through farmers and on govt. land during the year 2012-13, 11.00 lac plants (8.00 lac plants through farmers and 3.00 lac departmentally) were planted under the scheme "support for Raising of Mulberry Plantation" under CDP and similar no of mulberry plants are being planted during current financial year 2013-14 with enhanced unit cost of Rs. 5500/300 plants;
- During the year 2012-13, 2000 silkworm rearers were provided with rearing kits under transfer of technology at a unit cost of Rs. 0.25 lac under CDP and 1600 more beneficiaries are being covered during current financial year 2013-14.
- During the year 2012-13, 1600 silkworm rearers were provided financial assistance for "Construction of Rearing House" at unit cost of Rs. 0.75 lac/per house under CDP and 960 more beneficiaries are being covered during current financial year 2013-14 with enhanced unit cost of Rs. 1.25 lac/per house.
- During the year 2012-12, 20 number Hot Air Dryers at a unit cost of Rs. 1.75 lac were established in the state to facilitate cocoon drying by farmers on scientific lines by way of shifting the process from the conventional Sun Drying. This has helped farmers to fetch better prices for their produce.

- During the year 2012-13, the construction of one Cocoon Auction Market at Rajouri, Jammu Division, at a unit cost of Rs. 60.00 lac, has been completed as a follow-up to the instructions of Cabinet Secretary decision during his visit to valley on October, 23rd & 24th last year and one more Cocoon Auction Market has been taken up during year 2013-14 in district Anantnag of Kashmir division. The facility has been created for the convenience of sericulture farmers to dispose of their produce in a systematic manner.

Review of Literature

Bagchi *et al.*, (2012) Sericulturists supported with quality inputs and the training could improve the cocoon productivity. The initiatives under various schemes in recent years had indirect impact on the socio-economic conditions of the wage earners in the reeling industry. With the absorption of newer technologies and practices, the work and health hazards could come down making it easy for the reelers who will further influence on health and socio-economic conditions of the wage earners (Reddy and Mahadevaiah, 2010). Geetha & Indira, (2011) has found that India, the second largest producer of silk in the world, enjoys the unique distinction of producing all the four varieties of natural silk, namely, *tsar*, *Eri*, *Muga*, and mulberry. The silk industry can be found in vastly diverse regions such as temperate (Kashmir), subtropical (Jammu, Himachal Pradesh, Uttar Pradesh, North-Eastern Region), and tropical (West Bengal, Bihar, Orissa, Madhya Pradesh, Andhra Pradesh, Tamil Nadu, and Karnataka). Mulberry silk accounts for about 90% of the total production in the country. Central silk board (CSB) 2010-2011) Karnataka has been the leading producer of mulberry silk-accounting for more than 50% of its production in the country. This state is now regarded as the "Silk Bowl of India." Andhra Pradesh comes next to Karnataka. In Andhra Pradesh, sericulture has proved to be a money-spinner for many middle-class families. Except for Hyderabad district, almost all the districts in the State have taken to sericulture activity. In 1956, mulberry cultivation in the State was only in 1,212 hectares. It went up to 4, 03,144 hectares during 2000-2001. Quadri *et al.* (2010) while conducting a survey on adoption of improved sericulture practices in border areas of District Baramulla of Kashmir valley have found that the adoption level of improved package of practices of mulberry cultivation and silkworm rearing practices were at very low rate. Perusal of data with regard to non-adoption of silkworm rearing practices revealed that the highest percentages of non-adoption were the method of chopping of leaf for chawki rearing (77.7%) followed by mounting of worms for spinning (68.8%), use of bed disinfectants (50.0%), bed cleaning (61.1%) and maintenance of temperature and relative humidity (30.0%), respectively.

Objectives

- 1) To analyze the growth trend of sericulture industry in Jammu and Kashmir.
- 2) To analyze the effectiveness of marketing practices related to sericulture in Jammu and Kashmir.

Research Methodology

The study is based on both primary as well as secondary sources of sericulture industry of Jammu and Kashmir economy and the study area chosen is District Baramulla. For proper

understanding and better results, 100 respondents from different areas were chosen on the basis of representative stratified sampling.

Results and Findings

Analysis of Cocoon Production

Trend of Sericulture in J&K.

Table 1

Year	Cocoon Production (Mt)	Growth in %
1990-91	700	
1991-92	824	17.71
1992-93	800	-2.91
1993-94	650	-18.75
1994-95	680	4.62
1995-96	650	-4.41
1996-97	731	12.46
1997-98	785	7.39
1998-99	829	5.61
1999-00	825	-0.48
2000-01	882	6.91
2001-02	714	-19.05
2002-03	855	19.75
2003-04	680	-20.47
2004-05	716	5.29
2005-06	762	6.42
2006-07	833	9.32
2007-08	622	-25.33
2008-09	738	18.65
2009-10	810	9.76
2010-11	860	6.17
2011-12	917	6.63
2012-13	901	-1.74
2013-14	1022	13.43

Source: Sericulture development. Dept., J & K, Srinagar

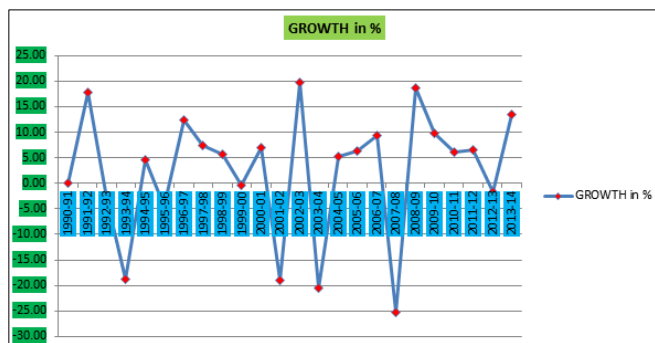


Fig 1

It has been found that in the year 2007-08 growth rate in sericulture was -25.33% which is the lowest in almost two decades and in the year 1993-94 it was -18.75 , second lowest growth rate in sericulture the main cause behind this negative growth rate is that after post-independence period 1947, there were changes in the structure of land ownership which affected the incentive structure in agriculture, introduction of new avenues of income led to improvement in the economic condition of the people, which reduced the interest of farmers towards silk worm rearing, state monopoly control in sericulture

was the another cause. The cause behind the negative growth rate in the year 2007-2008 is because of the turmoil condition in the valley. After the de- monopolization of sericulture industry, mulberry nurseries were declared as farmer’s property. It is because there are cyclical fluctuations in the growth rate as shown in the table as well as by the trend line. Unfortunately no more study has been done in the valley to identify the factors responsible for decline in the number of silk rearing farmers and poor performance of the industry.

Marketing Mechanism

Table 2

Sale	Frequency	Percent
Middle Man	51	51.0
Commission Agents	49	49.0
Total	100	100.0

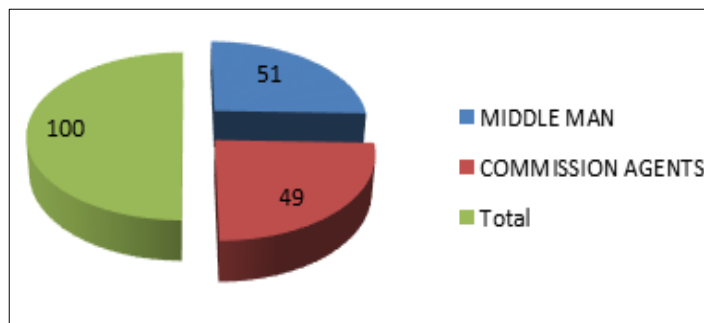


Fig 2

From the above table and graph plotted it is clearly shown that the marketing mechanism is holly and solly spoiled by the middleman i.e. (51%) and commission agents i.e. (49%), which shows that the farmers are more affected by these people. During my research survey most of the rearers reported that middle man and commission agents spoil their way of marketing, so, during report writing it was found that most of the farmers face market availability.

Average Price of Per/ Kg of Cocoon.

Table 3

Price	Frequency	Percent
RS 200-300	20	20.0
RS 300-400	44	44.0
RS 400-500	36	36.0
Total	100	100.0

From the above table it is found that the average price of per / kg of cocoon remains in between 300-400 Rs which is lesser according to the rearers reported during survey, they have reported that they are suffered because no support prices are fixed for their produce marketing problem avails middle man and commission agents destroy their marketing mechanism, other problem is quality differentiation it is because there is price variation which is shown in the table above.

Association between Income and Education

Table 4

Crosstab						
Count						
		Educational Status				Total
		IL Literate	Primary	Middle	High	
What Is Your Annual Income From Cocoon Cultivation	Rs 10-20 Thousand	1	0	0	0	1
	Rs 20-30 Thousand	13	9	2	2	26
	Rs 30-40 Thousand	24	27	9	4	64
	Above 40 Thousand	1	7	1	0	9
Total		39	43	12	6	100

Table 5

	Value	d.f
Pearson Chi-Square	8.475 ^a	9
Likelihood Ratio	9.555	9
Linear-by-Linear Association	1.454	1
N of Valid Cases	100	

From the above results from chi-square test and cross tab tables, it is revealed that at 5% level of significance, the calculated value is 8.475 and the tabulated value is 16.919. Thus, this shows that the calculated value is less than the critical value and we can say that the test is significant at 9 df. The cross tab table above shows that out of 100 respondents 64 respondents with maximum number 27 having educational qualification up to primary level earn their annual income about Rs 30-40 thousand from rearing of cocoon's, the 24 respondents who are illiterate, 9 middle standard and 4 respondents having their qualification up to high-school are allied with sericulture activities and earn

annual income about Rs 30-40 thousand to fulfill their basic necessities of life. Here from the above analysis of Chi-square test, it is found that the behavior of literate people towards sericulture activities is lesser than that of illiterate people.

Analysis of Variance (Income and Education Status of Farmers)

- Ho:** - Income is independent of educational status of farmers.
- H1:** - Income depends upon educational status of farmers.

ANOVA Table

Table 6

Income	Illiterate	Primary	Middle	High
15000	15000	0	0	0
25000	325000	225000	50000	50000
35000	840000	945000	315000	140000
45000	45000	315000	45000	0

Table 7

ANOVA: Single Factor						
Source of Variation	SS	df	MS	F	P-value	F crit
Summary						
Groups	Count	Sum	Average	Variance		
Illiterate	4	1225000	306250	1.46E+11		
Primary	4	1485000	371250	1.64E+11		
Middle	4	410000	102500	2.06E+10		
Higher	4	190000	47500	4.36E+09		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2.93E+11	3	9.76E+10	1.165561	0.363318	3.490295
Within Groups	1E+12	12	8.37E+10			
Total	1.3E+12	15				

From the above results, it has been observed that at 5% level of significance from the ANOVA output of excel, we have p- value 0.3633 which is greater than 0.05, hence we can say that there is insignificant difference between income and educational status of rearers/ farmers and hence we accept the null hypothesis and reject the alternate hypothesis. The inference is that there is no linear relation between income and educational status of the farmer's. F Computed (1.165) is less than F Critical (3.490).

Conclusion

The state of Jammu and Kashmir forms an important segment of sericulture belt of the country, having potential to meet the demand of good quality raw silk of international standard. However, the industry could not show significant progress after independence, due to several constraints. Understanding the importance of silk industry in the context of industrial development of the state and the conducive climate conditions suitable for good quality raw silk, tremendous efforts have been

made by the department with the collaboration of central silk board, from time to time for the up-liftment of the industry on account of which, cocoon and silk production has once again showed a positive trend especially Jammu division. However, there are still many factors such as, non-availability of quality mulberry leaves, unscientific rearing techniques, poor quality of seed, lack of proper supervision, competition from other crops and handicrafts , lack of proper extension activities and also the marketing, financial and other constraints, which act as an obstacle in various fields of sericulture activities an if the policy makers take suitable measures for removing these constraints a comprehensive growth promoting policy can be adopted which should aim at increasing productivity as well as profitability of sericulture activities. For this, a more pro- active approach needs to adopt for a clear decision making and choosing the specific programmes for the long term development of sericulture industry and producing high grade a raw silk of international standard at competitive prices. Silk is a highly valued textile

fiber of animal origin. It is used almost entirely for the production of high quality textiles. The sericulture industry is unique for more than one reason. It is based on agricultural output viz., cocoons and cottage based labour intensive in nature. The industry comprises of reeling, silk preparatory and weaving, silk knitting, silk wet and processing consisting of degumming, dyeing, printing and finishing besides garment manufacturing. These activities in turn support the ancillary enterprises of marketing, manufacture and by-product utilization comprising of spun silk yarn manufacture and pupae oil extraction. Thus, a lot of value is added to the product at each stage of the industry.

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