



Socio-Economic Profile (SEP) of Farmers for Revitalizing Sericulture with Special Reference to Jammu Division

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ABSTRACT

Studies on extension of sericulture among the farmers of Jammu and Kashmir is always remained the prime focus of various extension workers because of the potential of the area to produce quality Bivoltine silk. The raw silk production is about 145 MT. But the production trends are not matching with other traditional states. As most, of cocoon growers belong to socially and economically weaker sections of society - SCs, STs and HTs, women and others. These families do not have any other source of sustainable income and depend on sericulture for the same. To keep pace with other states in India, there is need to provide a strong technical and financial support and ensure these families a sustainable livelihood security. Socio economic status of the farmers has been found one of the main factors for enhancing production and productivity of farm produce in India. In this direction, present survey was conducted in the year 2016 in three districts viz. Kathua, Udhampur and Rajouri of Jammu division which were purposively selected based on potentiality for more cocoon production and having maximum number of beneficiaries. A survey was conducted to know the current position of silkworm rearers and to understand their socio-economic profiles and to evaluate participation of the respondents in sericulture with respect to age, caste and economic status. Chi-square (χ^2) value (23.78**) revealed highly significant association of age with respect to districts. Highly significant (23.78**) association of age and caste (37.33**) was found in all the districts. Majority of the farmers belonging to middle age group showed highly significant results and indicated the need for popularization of this avocation among the unemployed youth.

Key words: Sericulture, Production, Association, Respondents, Potentiality, Significant

Sericulture is the most ancient and most important occupation of the rural farmers of India. India is well known for its quality bivoltine silk and the only country to produce all the four types of silk i.e. mulberry, tasar, eri and muga. More than, 58 countries all across the world are practising sericulture among which China ranks first and India ranks second. In India Karnataka is the leading producer of mulberry silk and Jammu and Kashmir is also well known for its unmatched Bivoltine silk in the country and world as well, having the strength of 172000 hectares under mulberry cultivation, 54000 villages under sericulture and more than 258000 handlooms and 29340 power looms

under this industry (Dewangan *et al.* 2011, Chanotra *et al.* 2019). Indian sericulture industry predicts a living picture of the lives of sericultural farmers of the country. Being cottage based rural industry it perfectly suits to the lifestyle of the marginal rural farmers and helps them to achieve a handsome income by marketing of their cocoons to the reelers and industrialists. Thus, the transaction of cocoon and silk or silk fabric from producers to consumers ensures the transfer of money from rich to the poor. Sericulture is a potential sector of the agriculture to raise economic status of the farming community and also earning foreign revenue (Thapa and Shrestha 1999, Ganie *et al.* 2018). Sericulture is

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an integral part of rural farmers and holds great significance among the farmers of Jammu and Kashmir from time immemorial. Thus, it helps in elevating the socio-economic status of the sericultural farmers (Illahi *et al.* 2016). In present investigation, an attempt has been made to analyze the socio-economic profile of the farmers of Jammu division practicing sericulture, in order to find out the key elements determining the status of sericulture industry in J and K.

MATERIALS AND METHODS

The present study was conducted in the year 2016 in three districts viz. Kathua, Udhampur and Rajouri of Jammu division which were purposively selected based on potentiality for more cocoon production and having maximum number of beneficiaries. The lists of respondents were obtained from district offices of State Sericulture Development Department. The data on various socio-personal characteristics (Table 1) have been collected from randomly selected 225 respondents following pretested personal interview schedule. The data was analyzed by using SPSS software for evaluation of Mean, standard deviation, standard error and chi-square test for the recorded variables.

Table 1 Socio-personal variables selected for the study

S. No.	Socio-personal variables studied
1.	Age of the respondent
2.	Size of the family
3.	Education
4.	Annual net income earned from all occupation
5.	Caste
6.	Occupation
7.	Type of rearing house possessed
8.	Possession of rearing kit/appliances
9.	Training acquired
10.	Land holding
11.	Area under mulberry cultivation
12.	Number of mulberry trees owned
13.	Experience in sericulture

RESULTS AND DISCUSSION

The data obtained for socio-personal characteristics revealed that age of silkworm rearers in three districts ranged between 25 to 84 years and the average age was calculated as 49.10 (± 0.84) years 77.33 per cent of the respondents were of middle age group (36-61 years) in Udhampur followed by Rajouri. χ^2 -value (23.78**) revealed highly significant association of age with respect to districts. District wise data on size of the family belonged to medium group (3-5 members: as 81.33%) in Rajouri followed by Kathua (65.33%) and least in Udhampur (60.00%). The average family size ranged with maximum of 5.19 in Udhampur followed by 4.53 in Kathua and minimum (4.24) was found in district Rajouri. The overall average family size stood at 4.65 ± 0.10 ranging from 1-10 members. Insignificant association was recorded between the districts and size of the family variable ($\chi^2=16.89$).

The education variable in three districts was highly significant (χ^2 -value= 38.15**). Higher percentage of respondents were found illiterate (36.44%) followed by 31.11 per cent with middle grade education. Only 0.44 per cent recorded intermediate (10+2) education level. District wise data revealed, district Kathua highly illiterate (53.33%), primary level (32.00%), 12.00 per cent middle level and 2.67 per cent up to matric level. In district Udhampur, majority of respondents were illiterate (32.00%) followed by 20.00 per cent primary and 1.33 per cent studied up to intermediate level. In district Rajouri, majority of sericulturists were middle pass (49.33%), 24.00 per cent illiterate and 8.00 per cent were matriculates. The average formal education was highest (5.68 ± 0.40 years) in Rajouri followed by (5.19 ± 0.45 years) in Udhampur and lowest in Kathua 2.83 years (± 0.37). The overall average formal education in three districts was 4.57 ± 0.25 years. The chi-square test depicted highly significant association ($\chi^2=38.15$ **) between district and education variable with majority (92.00%) belonging to medium income category (₹ 21001-90000) followed by (7.50%) in high (₹ 90001-360000) and (0.44%) in low income (₹ 15000-21000) category. The overall average net annual income computed was ₹ 56231.11 \pm 2333.81 and chi-square test depicted insignificant association ($\chi^2=10.70$) between districts and annual income variable (Table 2).

Table 2 District-wise Socio-economic parameters of respondents (in %)

Parameter		Districts	Kathua	Udhampur	Rajouri	χ^2 -value (p-value)	Overall
Age (years)	25-35 (Young)		6.67	12.00	26.67	23.78**	15.11
	36-61 (Middle)		62.67	77.33	62.67	(<.01)	67.56
	62-84 (Old)		30.67	10.67	10.67		17.34
	Average age (years)		54.04	48.80	44.47		49.10
	S.D.		12.86	11.29	11.93		12.61
Size of the family (number)	Std. Error (\pm)		1.49	1.30	1.38		0.84
	1-2 (Small)		9.33	1.33	5.33	16.89	5.33
	3-5 (Medium)		65.33	60.00	81.33	(0.53)	68.89
	6-10 (Large)		25.33	38.67	13.33		25.78
	Average		4.53	5.19	4.24		4.65
Education	S.D.		1.63	1.52	1.31		1.54
	Std. Error (\pm)		0.19	0.18	0.15		0.10
	Illiterate		53.33	32.00	24.00	38.15**	36.44

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(years)	Primary	32.00	20.00	18.67	(<.01)	23.56
	Middle	12.00	32.00	49.33		31.11
	Matric	2.67	14.67	8.00		8.45
	10+2	0.00	1.33	0.00		0.44
	Average Education (years)	2.83	5.19	5.68		4.57
	S.D.	3.24	3.92	3.48		3.76
	Std. Error (±)	0.37	0.45	0.40		0.25
Net annual	15000-21000 (Low)	0.00	1.33	0.00	10.70	0.44
income (₹)	21001-90000 (Medium)	94.67	81.33	97.33	(0.55)	92.00
	90001-360000(High)	5.33	14.67	2.67		7.50
	Average annual income (Rs.)	50053.33	68893.33	49746.67		56231.11
	S.D.	19207.19	53817.40	14163.23		35007.14
	Std. Error (±)	2217.86	6214.30	1635.43		2333.81

Values in parenthesis refers percentage

**and blank refers significance level at 1% and non-significant, stood at 4.65±0.10 ranging from 1-10 members

Insignificant association was recorded between the districts and size of the family variable ($\chi^2=16.89$)

The data generated on caste factor indicated that 51.56 per cent of the respondents belonged to scheduled caste followed by general category (45.33%) and least to scheduled tribe (0.44%). 72 per cent of respondents in three districts belonged to general category in district Rajouri followed by scheduled caste (28.00%) whereas in district Kathua, majority (68.00%) belonged to scheduled caste followed by general category (26.67%). In district Udhampur, majority (58.67%) belonged to scheduled caste followed by general category (37.33%). Highly significant association was recorded between the districts and caste variables ($\chi^2=37.33^{**}$) and association with agriculture was recorded to be the main occupation of the farmers. Moreover, majority of the respondents falls under agriculture + sericulture + manual labour group (52.89%) followed by agriculture + sericulture (40.44%) and only 2.67 per cent were engaged in agriculture + sericulture + service group as 60.00 per cent in case of district Kathua associated with agriculture + sericulture + labour group followed by 37.33 per cent to agriculture as main and sericulture as subsidiary occupation. In district Udhampur, 52.00 per cent of the respondents were occupied with agriculture + sericulture + labour occupation while as in

district Rajouri, 49.33 per cent of the respondents had agriculture+ sericulture as main occupation. The chi-square test indicated insignificant association ($\chi^2=13.21$) between districts and occupation variable.

Data on overall percentage of respondents in three districts depicted that majority of the rearers were using rearing sheds (41.78%) followed by dwelling houses (41.33%) and only 16.89 per cent were using separate rooms for silkworm rearing having insignificant chi-square test association ($\chi^2=7.07$) between districts and type of rearing house. The overall percentage of respondents possessing rearing kit in three districts were recorded as 65.33 per cent depicting insignificant association ($\chi^2=17.31$). The data on trainings component revealed, very less number of respondent acquired with trainings on improved sericultural technologies and recorded as 9.33 per cent in district Udhampur followed by Kathua as 2.67 per cent only and none of the respondent was reported to be equipped with training in district Rajouri. The overall percentage on trainings in all the three districts was 4.00 per cent only. Insignificant association ($\chi^2=9.03$) was recorded between districts and trainings factor (Table 3).

Table 3 Percent wise Socio personal variables of respondents of the study area

Parameter		Districts	Kathua	Udhampur	Rajouri	χ^2 -value (p-value)	Overall
Caste	General		26.67	37.33	72.00	37.33**	45.33
	SC		68.00	58.67	28.00	(<.01)	51.56
	ST		0.00	1.33	0.00		0.44
	OBC		5.33	2.67	0.00		2.67
Occupation	Agri + Seri		37.33	34.67	49.33	13.21	40.44
	Agri + Seri + Labour		60.00	52.00	46.67	(0.49)	52.89
	Agri + Seri + Service		1.33	6.67	0.00		2.67
	Agri + Seri + Business		1.33	6.67	4.00		4.00
Type of rearing house	Dwelling house		44.00	34.67	45.33	7.07	41.33
	Rearing shed		45.33	48.00	32.00	(0.37)	41.78
	Separate room		10.67	17.33	22.67		16.89
Rearing kit	Possessed		62.67	82.67	50.67	17.31	65.33
	Not possessed		37.33	17.33	49.33	(0.12)	34.67
Trainings acquired	Acquired		2.67	9.33	0.00	9.03	4.00
	Not acquired		97.33	90.67	100.00	(0.41)	96.00

Values in parenthesis refers percentage, **and blank refers significance level at 1% and non-significant

Data on land holding revealed that all 225 respondents were marginal farmers having less than 1 hectare of land. Maximum average land holding of 0.69 ± 0.07 ha was recorded in district Kathua followed by Udhampur (0.50 ± 0.05 ha) and Rajouri (0.50 ± 0.04 ha). The overall average land holding in three districts was found as 0.56 ± 0.03 ha whereas cent per cent area under mulberry plantation was found rainfed. Maximum average area under mulberry cultivation was recorded in district Kathua (0.023 ± 0.002 ha) followed by Udhampur (0.013 ± 0.002 ha) and minimum (0.006 ± 0.001 ha) in Rajouri district. The overall

average area under mulberry cultivation in all the three districts stood at 0.014 ± 0.001 ha.

Average number of trees owned by the respondent was recorded as 56.59 ± 4.04 , highest in Kathua (84.44) followed by district Udhampur as 56.11 trees in and lowest (29.23) in district Rajouri. The overall average experience in sericulture activities in all the three districts recorded was 22.77 ± 0.80 years. Maximum in case of farmers of district Rajouri (24.73 years) followed by Kathua (23.73 years) and minimum (19.85 years) in district Udhampur (Table 4). The present results are also supported by Lyaqet (2015).

Table 4 Average land and experience variables of respondents

Parameter \ Districts	Kathua	Udhampur	Rajouri	Overall
Land holding (ha)	0.69 (± 0.07)	0.50 (± 0.05)	0.50 (± 0.04)	0.56 (± 0.03)
Area under mulberry (ha)	0.023 (± 0.002)	0.013 (± 0.002)	0.006 (± 0.001)	0.014 (± 0.001)
No. of trees owned (Nos.)	84.44 (± 8.48)	56.11 (± 7.13)	29.23 (± 2.18)	56.59 (± 4.04)
Experience in sericulture (years)	23.73 (± 1.64)	19.85 (± 1.06)	24.73 (± 1.37)	22.77 (± 0.80)

Values in parenthesis refers standard error

In order to gain an insight on rearing capacity and earning of respondents, the socio personal profile of the silkworm rearers of the study area was analysed. The current survey revealed that middle aged and youths were found to be willing to undertake sericulture as engagement for earning a livelihood. Caste wise 51.56 per cent of respondents belonged to schedule caste category with 0.56 ha land holding. Highly significant (23.78^{**}) association of age and caste (37.33^{**}) was recorded in all the districts as earlier mentioned by Dar *et al.* (2009), Peer (2012) while describing the impact of TSP and SCSP projects among the sericulture farmers of Jammu and Kashmir. Where as insignificant association between districts and family size was recorded depicting the negligible association of sericulture with family size of the respondents as supported by Balakrishnappa and Rajan (2010). High illiteracy level among the farmers was recorded in the districts as 36.44 per cent of respondents were found illiterate and only 0.44 per cent was found educated upto 10+2 level. Dar *et al.* (2009), Hadimani *et al.* (2017) documented education variable to play significant role for strengthening the socio-economic conditions and revealed high illiteracy as obstacle in adoption of technologies. Motamed (2002) reported sericulture to be opted as integrated farming or subsidiary farming with higher gains and enough close results for the current study were obtained in case of agriculture + sericulture + manual labour as main occupation with highest values in district Udhampur (52.00%) followed by Rajouri (49.33%) with agriculture and sericulture as their main occupation. Reddy *et al.* (2008), Balakrishnappa and Rajan (2010), Yadav (2013), Lyaqet (2015) reported similar results for experience in sericulture and demonstrated the requirement of skilled and trained personals for effective management of various operation. In present study farmers of district Rajouri were recorded to hold maximum experience in sericulture operational in dwelling houses

recorded to be maximum in district Rajouri (45.33%) followed by Kathua (44.00%) and Udhampur (34.67%). The findings depicted very closely reflected by Illahi and Nataraju (2007).

The socio-economic profile of silkworm rearers depicted that middle-aged farmers with maximum experience in silkworm rearing and management of various operations involved holds prime scope for expecting higher gains. The current study revealed that majority of the farmers practising sericulture was found to belong economically weaker section of the society such as SC and ST farmers. Thus, sericulture can be considered as an important and potential enterprise to generate means of economy for strengthening the profiles of such farmers. More importantly, highly significant (23.78^{**}) association of age and caste (37.33^{**}) was found in all the districts with low literacy level (36.44%) and almost 53 per cent of rearers were involved in agriculture + sericulture and labour occupation and with average the land holding on account of around 0.56 hectares having an average of 0.014 hectares area under mulberry in three districts was and only 42 per cent of rearers practising rearing in dwelling houses or in rearing shed, 60 five per cent having minimum of required appliances and only 9 per cent of sampled rearers had acquired training on sericulture practices. Therefore, it can be concluded that sericulture industry offers tremendous opportunities for revitalizing socio-economic status of the farmers if adopted with proper recommendations as in case of Udhampur district which have been registered to gain higher income returns of approximately ₹ 68893 per annum. Moreover, the average annual income earned from integration of sericulture with other agro-enterprises (Agriculture + Sericulture + others) was recorded as ₹ 56,231.00 which revealed the potential of silk industry for boosting the socio-economic profiles of the farmers of Jammu and Kashmir.

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