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Socio-economic and Communicational Status of Tasar Silkworm Rearers in Bastar District of Chhattisgarh in India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The present study was undertaken to assess the socio-economic and communicational status of Tasar silkworm cocoon producers and enhance their economic performance through sericulture. In this context, a study has been conducted in Bastar district of Chhattisgarh state, India to know the socio-economic and communicational status of Tasar silkworm rearers. The methodology of the study is to seek the answers to the research question, a descriptive research design and proportionate random sampling method were used. Information pertaining to the current investigation was collected from 214 farmers in 4 blocks and ten villages through formal discussion using an interview schedule and appropriate statistical measures like frequency, and percentage were applied to analyze the data. The main finding of the study is that the main occupation of the respondent farmers was sericulture. In respect of land holding, a massive group of farmers holds less than one acre and none of the farmers own large land holding. Most of the farmers produced Tasar cocoons in 2001 -5000 numbers. The majority of the farmers possessed medium use of mass media, out of which most farmers actively used sericulture firms and film/slide shows for sericulture-

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related information. Most of the farmers contact the field man once a week and rarely contact the Deputy Director of sericulture for sericulture-related information. In respect of taking part in extension activities, farmers took part in group meetings, demonstrations, farmers' training programs, and field days. The study recommended that sericulture provides gainful employment, economic development, low capital intensive, and improvement in the quality of life to the people in tribal areas.

Keywords: Economic performance; farmers training programme; Tasar silkworm cocoon producers; sericulture.

1. INTRODUCTION

The cultivation of silkworms to produce silk is called sericulture. The word sericulture is derived from the Greek word “sericos" which means “silk” and “culture” meaning “rearing”. India is the second major and largest raw silk producer and also consumes the largest quantity of raw silk in the world, as it contributes about 18% to the world's total raw silk production. Total raw silk production in India was 35,468 mt [1]. Chhattisgarh is the second highest Tasar producing state, after Jharkhand, with 254 mt of raw silk production (9% of the total national output).

Sericulture is a significant resource for the socio-economic expansion of the tribal sector. It is highly suitable in the context of diversification of farm enterprises and integration of the farming system with other enterprises and has the capacity to generate attractive income. It serves as an important tool for rural conversion benefiting the weaker sections of society. The silk cocoon rearing does not only offer periodic income but also utilizes the untapped family labor for various activities.

The socio-economic and communicational status of the farmers has been a significant parameter in determining their economic performance. This has been adjudged by various field studies involving parameters like occupation, land-holding, production, mass media exposure, contact with sericulture personnel, and extension participation. The factors such as occupation, land-holding, production, contact with sericulture personnel, and extension participation were found to have a positive relationship with economic performance. While mass media exposure showed a negative relationship with it.

Tribal people have been traditionally rearing Tasar worms in the natural forest/ economic block plantations. The activity is carried out mainly after the rainy season when the opportunity cost of labor remains very low. The returns from silkworm rearing often go to meet the basic consumption needs of the families. The low level of the economy, the suitability of Tasar for utilizing family labor, favorable weather conditions, and low investment and low economic gestation of the business sustain the interest of Tasar's growing families. Sericulture activities covered 17,709 ha in Chhattisgarh. The total number of Tasar centers is 285 (5079 ha), Tasar plantation under CGSP is 155 sites (4046 ha), and Tasar rearing in the forest was 7619 ha (Department of Sericulture, Chhattisgarh).

1.1 Research Aims

The objectives of this publication were enraptured in the following according to

i. Socio-economic – related to the differences between groups of people caused mainly by their financial situation.
ii. Communicational – when the media is a link between professional groups, governmental programs and its beneficiaries, including the farmers.

Research question: The following research questions guided the study

i. What is the socio-economic status of selected Tasar silkworm cocoon farmers?
ii. What is the communicational status of selected Tasar silkworm cocoon farmers?

2. LITERATURE REVIEW

2.1 Other Scholars

Dewangan [2] observed that the numbers of cocoon produced are 7750/crop/beneficiaries in Tamnar and in Dharamjaigarh it is 6350.

Swami et al. [3] revealed that the majority (66.67%) of the respondents belong to the medium mass media exposure category followed by 17.50 and 15.83 percent of the respondents

belonging to the high and low mass media exposure category, respectively.

Kumar et al. [4] stated that a greater number of farmers had less than one acre (n=30, 60.00%) of mulberry land holdings and 12 farmers (24.00%) with 1-2 acres and few farmers had more than 2 acres of land holding (n=8, 16.00%).

Panda [5] observed that (100.00%) of respondents were involved in Tasar silk occupation, (100.00%) of respondents were engaged in agricultural work, followed by (70.67%) respondents were engaged in animal husbandry, (38.00%) of the farmers had their own shop. (12.67%) respondents were involved in labor work, and (7.34%) respondents were engaged in the job sector.

3. RESEARCH METHODOLOGY

The study used a descriptive research design. The population of the study comprised selected Tasar silkworm rearing farmers in Bastar District of Chhattisgarh state. As per the maximum number of Tasar rearing farmers out of 264, 80% were selected total respondents through a proportionate random sampling method. Thus, finally, the sample consisted of 214 respondents from 4 blocks namely, Jagdalpur, Bastar, Tokapal, and Bakavand, and 10 villages. The instrument used for the study was a self-structured questionnaire that elicited information on each of the research questions. The data was analyzed with the help of frequency, percentage, the mean, and standard deviation for interpretation of the findings. The following analytical tools were employed using the SPSS package.

4. RESULT FINDINGS AND DISCUSSION

4.1 Socio-economic Status of the Sericulture Farmers

4.1.1 Farmer's occupation

The distribution of the respondents according to their involvement in different occupations is given in Table 1. The data also reveals that 63 of the respondents (29.44%) were involved in only sericulture, 53 of the respondents (24.77%) were involved in sericulture +collecting small forest products, 47 of the respondents (21.96%) of sericulture farmers were involved in sericulture +agriculture labor work. However, 30 of the respondents (14.02%) of sericulture farmers were involved in sericulture +agriculture, followed by 9 of the respondents (4.20%) of the sericulture farmers were involved in sericulture +other work (like service, carpenter, etc.), 8 of the respondents (3.74 %) of sericulture farmers involved in sericulture +dairy. While 4 of the respondents (1.87 %) were involved in sericulture and poultry. Similar results are aligned with the research reported by Yadaw [6] and Panda [5] that all the respondents are involved mainly in sericulture occupation.

Table 1. Socio-economic characteristics of sericulture farmers

S.N.	Characteristics	Sericulture farmers (n = 214)	
I.	**Farmer's Occupational**	**Frequency (n)**	**%**
1.	Sericulture only	63	29.44
2.	Sericulture + Agriculture	30	14.02
3.	Sericulture + Dairy	8	3.74
4.	Sericulture + Poultry	4	1.87
5.	Sericulture + collecting minor forest product	53	24.77
6.	Sericulture + Agricultural labour	47	21.96
7.	Sericulture + Other	9	4.20
II.	**Land-holding**		
1.	Marginal (Below 1 ha)	109	50.94
2.	Small (1 to 2 ha)	77	35.98
3.	Semi- Medium (2 to 4 ha)	26	12.15
4.	Medium (4 to 10 ha)	2	0.93
5.	Large (> 10 ha)	0	00.00
III.	**Production of cocoons**		
1.	500-1000 cocoons	37	17.29
2.	1001-2000 cocoons	27	12.62
3.	2001-5000 cocoons	95	44.39
4.	> 5000 cocoons	55	25.70

4.1.2 Land-holding

It was observed from Table 1 that 109 of the respondents (50.94%) possessed marginal farmers (Below 1 ha), followed by 77 of the respondents (35.98%) had small farmers (1 to 2 ha), 26 of the respondents (12.15%) had semi-medium farmers (2 to 4 ha), 2 of the respondents (0.93%) were in medium land holding (4 to 10 ha) category. While none of the farmers follows the category in large land holding (above 10 ha) category. The result of the study indicated that found that 109 of the respondents (50.94%) had marginal farmers (below 1 ha). The probable reason might be that the land holding is being reduced continuously due to separation among siblings from generations during the conversion of joints families to small families. The finding is in agreement with that of Afroz et al. [7] and Jakkawad et al. [8] that most of the sericulture farmers had below 1 hectare land holding.

4.1.3 Production of cocoons

Result regarding production of cocoons is revealed in Table 1 that 95 of the respondents (44.39%) had 2001 -5000 cocoons followed by 55 of the respondents (25.70%) of having more than 5000 cocoons, 37 of the respondents (17.29%) of having 500 -1000 cocoons and 27 of the respondents (12.62%) had 1001 -2000 cocoons.

4.2 Communicational Status of the Sericulture Farmers

4.2.1 Mass media exposure

The data regarding mass media exposure of the sericulture farmers are evident in Table 2. The data reveals that 201 of the respondents (93.92%) did not read the newspaper for sericulture information, followed by 10 of the respondents (4.67%) sometimes and only 3 of the respondents (1.40%) always read a newspaper for silkworm rearing information. About 129 of the respondents (60.28%) went to sericulture firms, followed by 73 of the respondents (34.11%), and 12 of the respondents (5.61%) went to sericulture firms, respectively. Regarding the utilization pattern of radio 152 of the respondents (71.02%) did not listen to sericulture/ agriculture programs, 47 of the respondents (21.96%) listen sometimes and 15 of the respondents (7.01%) listen always. In the case of television 172 of the respondents (80.37%) not viewed sericulture/ agriculture programs, followed by 38 of the respondents (17.76%), and 4 of the respondents (1.87%) viewed sericulture/ agriculture programs sometimes, and always, respectively. With regard to Kisan Call Centre 90 of the respondents (42.06%) always call the Kisan Call Centre and clear their queries, 82 of the respondents (38.32%) never call the Kisan Call Centre 42 of the respondents (19.93%) call sometimes. About 200 of the respondents (93.46%) were sericulture farmers never seen the poster/ charts and 14 of the respondents (6.54%) saw it sometimes. In the case of film/slide shows, 86 of the respondents (40.19%) were seen sometimes, 67 of the respondents (31.31%) never and 61 of the respondents (28.50%) always.

Data presented in Table 3 regarding overall mass media exposure revealed that overall, 129 of the respondents (60.28%) belonged to the medium category, followed by 56 of the respondents (26.17%) low category and 29 high categories (13.55%) in high category of exposure to mass media, respectively. It is clear from the results that the respondents had a medium degree of mass media exposure. Lack of availability of different media, low level of education, and lack of intuition to purchase any modern gadgets of the communication might be responsible for their medium exposure to mass media. The above findings draw support from the studies conducted by Sham [9] and Swami et al. [3].

Table 2. Mass media exposure of sericulture farmers

S.N.	Mass media	Utilization pattern		
		Always	Sometimes	Never
1.	News Paper	03 (1.40%)	10 (4.67%)	201 (93.92%)
2.	Sericulture Firms	129 (60.28%)	73 (34.11%)	12 (5.61%)
3.	Radio	15 (7.01%)	47 (21.96%)	152 (71.02%)
4.	Television	04 (1.87%)	38 (17.76%)	172 (80.37%)
5.	Kisan Call Centre	90 (42.06%)	42 (19.93%)	82 (38.32%)
6.	Poster / Chart	00 (00.00%)	14 (6.54%)	200 (93.46%)
7.	Film / Slide show	61 (28.50%)	86 (40.19%)	67 (31.31%)

Table 3. Overall mass media exposure of sericulture farmers

S.N.	Category	Frequency (n)	%
1.	Low (Up to 1)	56	26.17
2.	Medium (2 to 7)	129	60.28
3.	High (More than 8)	29	13.55
Total		214	100.00

4.2.2 Contact sericulture personnel

The result presented in Table 4 illustrated the distribution of sericulture farmers with respect to their frequency of contact with sericulture personnel separately.

In the case of contacting with Deputy Director of Sericulture, 152 of the respondents (71.03%) not contacted with Deputy Director of Sericulture, followed by 57 of the respondents (26.64%) were made contact with the Deputy Director of Sericulture 2 – 3 times in a year, 4 of the respondents (1.87%) made contact monthly and only 1 respondent (00.47%) made contact fortnightly. None of the respondents had contact weekly with the Deputy Director of sericulture.

About 138 of the respondents (64.49%) made contact with the Assistant Director of Sericulture 2–3 times in a year, followed by 65 respondents (30.37%) who had never contacted, 9 of the respondents (4.21%) and 2 respondents (00.93%) had contact monthly and fortnightly, respectively. None of the respondents had contact weekly with the Assistant Director of Sericulture.

Regarding contacts with field officers, the data indicated that most of the sericulture farmers i.e., 95 of the respondents (44.39%) had monthly contact followed by 71 respondents (33.38%) had contact fortnightly, 22 respondents (10.28%) made contact 2 – 3 times in the year, 17 respondents (7.94%) were contacted weekly. Whereas only 9 of the respondents (4.21%) had no contact with Field Officers.

With regards to the sericulture inspector, 95 of the respondents (44.39%) were not contacted by Sericulture Inspector, however, 47 of the respondents (21.96%) contacted with Sericulture Inspector monthly, followed by 35 of the respondents fortnightly, 25 respondents had made contact 2 – 3 times in a year with Sericulture Inspector and 12 respondents (1.11%) made contact weekly with Sericulture Inspector.

With regard to field men, the data indicate that 149 of the respondents (69.63%) were contacted with field men/ operatives once a week followed by 28 respondents (13.08%) who made contact fortnightly, 24 of the respondents (5.14%) made contact once in a month, 11 of the respondents (5.14%) had made contact 2 – 3 times in a year with field men/ operatives, while, only 2 respondents (0.93%) have no contact with field men/ operatives, with field men/ operatives.

In the case of contact with others (Subject matter specialists/ NGOs etc.), 176 of the respondents (82.24%) never contacted them, while 38 of the Sericulture farmers 17.76% made contact with them 2 – 3 times in a year.

The data regarding the contact index are revealed in Table 4. This table shows that about 147 of the Sericulture farmers (68.50%) contacted Field men, hence ranked first by the respondents.73 of the Sericulture farmers (34.10%) contacted with Field Officer, 52 respondents (24.20%) contacted with Sericulture Inspector, 50 respondents (23.20%) contacted with Assistant Director of Sericulture, 12 of the Sericulture farmers contact Deputy Director of Sericulture (12.70%), and 20 respondents (9.08%) contacted with Others (SMS/ NGOs, etc.) were ranked II, III, IV, V and VI, respectively.

4.2.3 Extension participation

In Table, 5 data are illustrated regarding extension participation. The data indicated that 105 of the respondents (49.07%) had attended the training program occasionally, 67 respondents (31.31%) had never attended the training program and only 42 of the respondents (19.63%) had attended the training program regularly. 86 of sericulture farmers (40.19%) attend group meetings occasionally, 75 sericulture farmers (35.05%) are never attended, and 53 sericulture farmers (24.77%) attend regularly. About 124 of the respondents (57.94%) had never attended Kisan Mela, whereas 65 of the respondents (30.37%) had attended occasionally, while, only 25 respondents

(11.68%) had attended Kisan Mela. 135 of the respondents (63.08%) participated in demonstrations occasionally, followed by 49 respondents (14.02%) and 30 respondents (22.90%) who never and regularly participate, respectively. 113 of the respondents (52.80%) had never participated in field days and 70 respondents (32.71%) participated occasionally and only 31 of the respondents (14.49%) had regularly participated in field days. 132 of the respondents (61.68%) never attend other activities (Exhibition, Field visits, etc.), followed by 56 respondents (26.17%) and 26 respondents (12.15%) occasionally and regularly attend other activities (Exhibition, Field visits, etc.).

Details of the findings about overall extension participation are presented in Table 6. It was concluded that 129 of the respondents (60.28%) had medium extension participation, followed by 49 sericulture farmers (22.90%) who had high and 36 respondents (16.82%) were low extension contact. The result showed that the majority of the respondents (60.28%) had a medium level of extension participation. The possible reason could be that to get themselves aquatinted about the new technologies and skills. Participation in the extension activities provides opportunities for contrived experiences and serves improved sericulture practices prevailing in the region or locality. Another reason could be that communication plays a vital role to bridge the gap between the technical progression and the actual practice undertaken particularly in the field of sericulture. The success of Tasar silk cultivation to a great extent depends on effective and well-organized communication of ideas. Patil [10] observed similar findings in their study that the majority of the respondents had medium-level extension participation [11].

Table 4. Contact with sericulture personnel of sericulture farmers

S.N.	Sericulture personnel	Frequency of contacts					Contact Index	Rank
		Once in a weak	Fortnightly	Once a month	2-3 times in a year	Never		
1.	Deputy Director of sericulture	00 (00.00%)	01 (0.47%)	04 (1.87%)	57 (26.64%)	152 (71.03%)	12.70	V
2.	Assistant Director of sericulture	00 (00.00%)	02 (0.93%)	09 (4.21%)	138 (64.49%)	65 (30.37%)	23.20	IV
3.	Field officer	17 (7.94%)	71 (33.38%)	95 (44.39%)	22 (10.28%)	9 (4.21%)	34.10	II
4.	Sericulture inspector (junior/senior)	12 (5.61%)	35 (16.36%)	47 (21.96%)	25 (11.68%)	95 (44.39%)	24.20	III
5.	Field man	149 (69.63%)	28 (13.08%)	11 (5.14%)	24 (11.21%)	2 (0.93%)	68.50	I
6.	Other	00 (00.00%)	00 (00.00%)	00 (00.00%)	38 (17.76%)	176 (82.24%)	9.08	VI

Table 5. Extension participation of sericulture farmers

S.N.	Activities	Extent of participation		
		Regular	Occasionally	Never
1.	Farmers training program	42(19.63%)	105 (49.07%)	67 (31.31%)
2.	Group meeting	53 (24.77%)	86 (40.19%)	75 (35.05%)
3.	Kisan mela	25 (11.68%)	65 (30.37%)	124 (57.94%)
4.	Demonstration	49 (22.90%)	135 (63.08%)	30 (14.02%)
5.	Field days	31 (14.49%)	70 (32.71%)	113 (52.80%)
6.	Others (Exhibition, Field visit, etc.)	26 (12.15%)	56 (26.17%)	132 (61.68%)

Table 6. Overall extension participation of sericulture farmers

S.N.	Category	Frequency (n)	%
1.	Low (Up to 3)	36	16.82
2.	Medium (4 to 7)	129	60.28
3.	High (More than 7)	49	22.90
Total		214	100.00

5. CONCLUSION AND RECOMMENDATIONS

Conclusion: Based on the findings, it was concluded that the main occupation of most of the respondents was only silk production, maximum numbers of sericulture farmers possess marginal land holding, and 2001-5000 cocoons were produced per crop by the maximum respondents. Most respondents possessed a medium level of mass media exposure and contacted the field man for sericulture-related information. Tasar silkworm rearers participated in extension activities at a medium level and primarily participated in group meetings for knowing silkworm-related information.

Recommendations: The following recommendations were made based on the findings:

- The government should help farmers through funding, subsidies free distribution of Disease Free Layings to tribal farmers, this will enhance their economic condition.
- Daily visits of sericulture personnel should help in the incorporation of the latest technology in the farmer's sericulture field.
- Provide a training programme which can help farmers to solve their field-related problems

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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