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A study on the socio-economic and psychological characteristics of muga rearers of Dhakuakhana sub-division of Lakhimpur district, Assam

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Abstract

Assam holds a unique position in producing muga silkworms globally. Muga culture is a profitable and a labour intensive economic enterprise of low capital investment and high output source of income that gives employment and regular income round the year. The paper analyses the socio-economic and psychological characteristics of muga rearers of Dhakuakhana sub-division of Lakhimpur district, Assam. The findings revealed that majority (48.75%) of the respondents were in the age group of 36-56 years with primary school level of education (30.00%) and were belonged to small sized family consisting of 2-4 members (53.75%) who considered agriculture as their primary source of income (53.75%). Most of them (70.00%) had an average annual income; most of the respondents (75.00%) had 3-5 working members in their household and were small farmers with land holding from 1-2 ha (46.25%). Moreover, majority (50.62%) of the respondents were having medium level of farming experience between 10-20 years, medium level of extension contact and knowledge level on recommended practices of muga (75.62%) cultivation. Majority of the respondents (75.00%) did not have membership in farmers' organization. Majority of the respondents (58.75%) had medium level of training exposure and most of them put in their own finance for investment in cultivating muga (55.63%). Besides these, majority of the respondents (60.00%) sell their produce through village traders.

Keywords: Muga, silkworms, socio-economic, psychological, rearers

1. Introduction

The golden silk producing muga silkworm (*Antheraea assamensis*) is a gift of nature to the North Eastern part of India, especially to Assam and is regarded as the 'Pride of Assam'. Muga culture is an age old tradition principally practiced by small and marginal farmers and plays a crucial role in the customs and culture of the Assamese society. It also holds a unique position in the socio-economic development of the poor section of the society. The livelihood of the rural people engaged with the culture comes directly or indirectly from this sector and thus this activity occupies a unique position in the socio-economic life of the people of Assam. The Dhakuakhana sub-division of Lakhimpur district is popularly known as the land of muga culture and the region plays a major role in muga raw silk production. Muga culture has been practiced traditionally by a large portion of rural people to earn their livelihood from this sector. There are about 1 lakh traditional farmers in Dhakuakhana growing Som (*Persea bombycina* Kost), the muga food plants in an area of about 1,602 hectares of land averaging 0.15 hectare of holding som plantation per family (Ahmed, 2010) [1]. The socio-economic status of the farmers has been an important parameter in determining their level of technology adoption. This has been adjudged by various field studies involving parameters like age, caste, family form, main occupation, family size, education, land holding size, extension support etc (Geetha *et al.*, 2001) [2]. Several studies have been carried out to understand the socio-economic status of the people engaged in muga culture in various districts of Assam. However, no such study was undertaken pertaining to socio-economic status of muga culture at Dhakuakhana. Thus, the present study was aimed to access the socio-economic and psychological characteristics of muga rearers at Dhakuakhana sub-division of Lakhimpur district, Assam.

2. Materials and Methods

The investigation was purposively conducted with a sample of 160 respondents at Dhakuakhana sub-division of Lakhimpur district, Assam. A multistage purposive cum random sampling design was followed to select the respondents for collection of data. All the development blocks under Dhakuakhana sub-division were selected for the present study, out of which 4 villages from each development block were selected randomly. The data were collected by personal interview method with the help of structured schedule. According to the objectives of the study, the data collected were subjected to statistical analysis *viz.*, simple frequencies, percentage, mean and standard deviation.

3. Results and Discussion

For the present study, a total of 14 socio-economic and psychological variables were selected and examined. Categorization of the respondents was done based on each of the characteristics and frequency along with percentage was calculated to study their distribution. In addition, mean and standard deviation was also estimated for some relevant variables.

3.1. Age

The data depicted in the Table 1 shows that majority of the respondents (48.75%) belonged to the middle age group (36-50 years), followed by 46.25 per cent of the respondents belonged to the old age group (above 51 years) and the remaining 5.00 per cent of them belonged to young age group (18-35 years). The findings were similar with Hussain (2019), [3] Mech (2020) [4] and Rabha (2020) [5]. It was observed from the data that majority of the respondents belonging to the middle age group were more engaged in muga cultivation and gathered ample experiences in muga culture over the years, considered it as one of the key sources of livelihood. These age groups were having more work efficiency and thus, they could utilize their skill for better income generation and sustain their livelihoods. It was also observed that the participation of the respondents belonging to the old age group in muga cultivation was comparatively higher than the young age group. The probable reason may be due to their higher experiences in this field and maintaining their tradition of cultivating muga silkworms over the years. It is evident from the table that the involvement of the youths *i.e.*, young age group in muga culture was very low, which might be due to work culture of present days.

3.2. Education

The data pertaining to education level of the respondents revealed that majority of the respondents (30.00%) were primary school passed, followed by 25.00 per cent were high school passed and 14.38 per cent were higher secondary passed whereas, 11.25 per cent respondents were having educational qualification up to middle school and graduate or above each. Only 8.13 per cent of the respondents were illiterate. It was found that majority of the respondents were literates but did not have higher level of education, which might be due to poor financial condition, work load of the family or lack of support from the family members. Though a farmer can earn their livelihood from muga cultivation without having higher educational level but it is the need of the hour to inspire and make them aware about scientific recommended technologies of muga rearing practices from time to time by the concerned department and other related

institutions. Thus, it may help the rearers to generate more income and in sustaining their livelihood. Vijay *et al.*, (2020) [6] revealed that most of the muga rearers (46.67%) had primary level of education.

3.3. Family size

An analysis of family size revealed that majority of the respondents (53.75%) had small family size with 2 to 4 members, followed by 35.62 per cent of the respondents had medium size family with 5 to 8 members and the remaining 10.62 per cent of them had large family size with more than 8 members. The small size family having 2-4 members was more in the study area which might be due to having difficulty in accommodation in joint family; more expenditure in extended family; less family burden; to pay extra attention towards their children or some other personal reasons. However, by maintaining the time table of rearing, the members of small size family could be engaged in different activities to augment their income. On the other hand, maximum number of medium and large size family members should be involved in various activities to earn benefits for the family. The results were in line with the findings of Rabha (2020) [5].

3.4. Primary source of income

Majority of the respondents (53.75%) revealed agriculture as their primary source of income whereas 28.75 per cent of the respondents reported sericulture as their primary source of income. A few of the respondents (9.37%) considered their business as the primary source of income and 6.25 per cent earned income from daily wages. On the other hand, only 1.87 per cent of the respondents revealed animal husbandry as their primary source of income. However, none of the respondents were involved in fishery and service. Mech *et al.* (2016) [7], Bonia (2020) [8] and Vijay *et al.* (2020) [6] also reported that majority of the respondents regarded agriculture as their primary occupation.

3.5. Average annual family income

It was revealed that majority of the respondents (70.00%) had an average annual income in the range of Rs. 1,00,000 to Rs. 2,77,000 whereas, 20.00 per cent of the respondents were having annual income above Rs 2,77,000 and only 1.00 per cent of them had an annual income below Rs. 1,00,000. It was observed from the findings that most of the respondents had an annual income in between Rs. 1,00,000 and Rs. 2,77,000. They were having average kind of annual income and it might be due to destruction of crops in their field due to occurrence of flood which lead to the loss of crops and thereby, less profit was obtained from farming. In addition, lack of effecting marketing channels to sell their produce and lack of permanent jobs might be a reason.

3.6. Size of operational land holding

The data presented in the Table 4.1.7 and Figure 4.1.7 on size of operational land holding revealed that majority of the respondents (46.25%) were small farmers having land holding between 1 ha to 2 ha. and 23.75 per cent of the respondents were semi-medium farmers having land holding between 2 ha to 4 ha. On the other hand, 16.25 per cent of the respondents belonged to marginal category of farmers having land holding below 1 ha and 13.75 per cent of them belonged to medium category of farmers having land holding between 4 ha to 10 ha. The area under muga was also included in this total land

holding of the respondents. However, none of the respondents were found to have land holding above 10 ha. It was evident from the table that almost all the categories of farmers adopted muga culture as a source of livelihood. It can be indicated that muga culture is an enterprise which can be taken by medium to semi-medium farmers along with small and marginal farmers for economic gain. Marginal and small farmers can take it as a main source of income for their livelihood. The above findings were similar to the findings of Rabha (2020) [5].

3.7. Labour availability within household

The data in the Table 1 depicted that 75.00 per cent of the respondents had 3 to 5 working members in their households, followed by 15.63 per cent of the muga rearers had above 5 working members in their households. On the other hand, only 9.37 per cent of them had a labour availability of less than 3 members in their households. Dewangan (2016) [9] reported in his study that, in Tamnar block three members were associated with the occupation from the average families.

Table 1: Socio-economic and psychological characteristic of muga rearers

Variable	Category	Frequency (N=160)	Percentage	Mean	S.D
Age	18-35 (Young)	8	5.00		
	36-50 (Middle)	78	48.75	-	-
	51 and above	74	46.25		
Education level	Illiterate	13	8.13		
	Primary school passed	48	30.00		
	Middle school passed	18	11.25	-	-
	High school passed	40	25.00		
	Higher Secondary passed	23	14.38		
	Graduate and above	18	11.25		
Family Size	Small (2-4)	86	53.75		
	Medium (5-8)	57	36.62	-	-
	Large (Above 8)	17	10.62		
Primary Source of income	Agriculture	86	53.75		
	Sericulture	46	28.75	-	-
	Animal Husbandry	3	1.87		
	Fishery	0	0		
	Service (Govt./Private)	0	0		
	Daily Wage Earner	10	6.25		
	Business	15	9.37		
Annual family income	Low	16	1.00		
	Medium	112	70.00		
	High	32	20.00		
Size of operational land Holding	Marginal (Below 1 ha)	26	16.25		
	Small (1-2 ha)	74	46.25	-	-
	Semi medium (2-4 ha)	38	23.75		
	Medium (4-10 ha)	22	13.75		
	Large (Above 10)	0	0		
Labour availability within household	Low (Below 3)	15	9.37		
	Medium (3-5)	120	75.00	3.91	1.36
	High (Above 5)	25	15.63		
Farming Experience	Low (Below 10)	18	11.25		
	Medium (10-20)	81	50.62	-	-
	High (Above 20)	61	38.13		
Source of Extension contact	Low	36	22.50		
	Medium	102	63.75	3.75	2.94
	High	22	13.75		
Knowledge level	Low	21	13.13		
	Medium	121	75.62	11.73	2.47
	High	18	11.25		
Training Exposure	Yes	36	22.50		
	No	124	77.50		
Membership in farmers' organization	Yes	40	25.00		
	No	120	75.00		
Source of credit	Family	89	55.63		
	Friends	22	13.75		
	Relatives	26	16.25	-	-
	Money lenders	14	8.75		
	Bank	9	5.62		
Marketing channel	Producer-consumer	60	37.50		
	Producer-village trader-consumer	96	60.00	-	-
	Producer-village trader-primary wholesaler-consumer	4	2.50		
	Producer-commission agent-consumer	0	0		
	Producer-Government agencies -consumer	0	0		

3.8. Farming experience

The analysis revealed that farming experience of the respondents showed that majority of the respondents (50.62%) were having medium farming experience *i.e.*, between 10 to 20 years whereas, 38.13 per cent of them were having high farming experience *i.e.*, more than 20 years and 11.25 per cent of the respondents had low farming experience *i.e.*, below 10 years. Most of the respondents were well experienced in muga cultivation practices. If they would be made aware about the various opportunities and facilities of muga culture as well as impart proper need based training on different aspects of recommended practices of muga culture then, they would be benefitted and would sustain muga production for better livelihood generation. Mech *et al.* (2016)^[7] reported in their study that majority of the farmers had farming experience of 10-20 years in muga culture. Vijay *et al.* (2020)^[6] revealed that regarding muga culture, majority of the farmers had farming experience more than 10 years and Baruah (2021)^[10] reported that the majority (53.33%) of the respondents had farming experiences between 10-20 years.

3.9. Extension contact

It was observed that majority of the respondents (63.75%) had medium level of extension contact, followed by 22.50 per cent of them had low level of extension contact and the remaining 13.75 per cent had high level of extension contact. Most of the respondents having medium level of extension contact might be due to ratio gap between the extension agents and the respondents. The above findings were similar to the findings of Hadimani *et al.* (2017)^[11], Rabha (2020)^[5] and Baruah (2021)^[10].

3.10. Knowledge level

It was evident that the majority of the respondents (75.62%) had medium knowledge level, followed by 13.13 per cent of respondents had low level of knowledge and 11.25 per cent of the respondents had a high level of knowledge regarding muga cultivation practices. The probable reason might be due to lack of training and proper awareness on improved methods of cultivation of muga. The above results were in line with the findings of Moulasab and Sudhakara (2017)^[12] and Baruah (2021)^[10].

3.11. Membership in farmers' organization

Majority of the respondents (75.00%) were not associated in any organization whereas, only 25.00 per cent of the respondents were having membership in farmers' organization. The possible reason might be that the respondents were not socially active. The above findings were similar to the findings of Sharma (2012)^[13] and Kumar *et al.* (2018)^[14].

3.12. Training exposure

Majority of the respondents (58.75%) had medium level of training on muga culture whereas, only 31.87 per cent of the respondents had low level of training on various aspects of muga culture and only 9.37 per cent had high level of training. As majority had medium level of training, the knowledge level of some of the respondents was very low regarding scientific rearing practices of muga. On the other hand, some respondents did not receive training based on their need while some respondents attended training but were unable to adopt due to lack of facilities whereas, some moderately followed the recommended practices.

3.13. Source of credit

Most of the respondents (55.63%) put in their own finance for investment in cultivating muga silkworms, followed by 16.25 per cent of the respondents borrowed credit from the relatives whereas, 13.75 per cent of the respondents borrowed credit from friends. On the other hand, 8.75 per cent of the respondents were dependent on money lenders for credit and only 5.62 per cent of the respondents had access to banks. The possible reason behind for lack of access to credit might be due low level of education, lack of awareness about financial schemes and too many lengthy procedures for getting loan in the nationalized banks. Gajendra (2019)^[15] reported in his study that for majority of the respondents (52.50%) put in their own finance for investment in paddy and other horticultural crops growing.

3.14. Marketing channel

The Table I revealed that majority of the respondents (60.00%) mainly marketed their products through village traders (producer-village trader-consumer), followed by 37.50 per cent of the respondents marketed their products directly to consumer (producer-consumer). Moreover, only 2.50 per cent of the respondents were found to have marketed their products through village trader and primary wholesaler (producer-village trader-primary wholesaler-consumer). Bonia (2020)^[8] revealed that middlemen were the key business personnel who used to supply to the traders, reelers and manufacturers by assembling the reeling cocoons.

4. Conclusion

In the study area, majority of the farmers belonged to middle age group as compared to young age group, who are dynamic and technology oriented. Therefore, emphasis should be given to the young age group by encouraging and attracting them towards this sector through various awareness programmes. Moreover, the youths may also be encouraged for entrepreneurship development in this sector by making aware of the various scopes and opportunities of muga culture in the region. It was found that the majority of the rearers depend on agriculture for their livelihood and muga rearing is being practiced by most of the rearers to maintain their long time traditions that is being followed in the study area. Therefore, it is high time that the rearers of Dhakuakhana should be made realized about the economic importance of muga and considered it as an alternate farm-based plan for their sustainable livelihood. Hence, the extension personnel should provide need-based training to the farmers to aware and encourage them to conduct muga culture for income generation. Since majority of the farmers had medium level of training hence, timely and need-based training should be provided for improving the knowledge level of farmers and also to build a favorable attitude towards muga rearing and cultivation practices. It may also develop their skills and make them confident to carry out the different activities of rearing more efficiently. As majority of the respondents had less access to credit facilities, the various financial institutes and government should come forward to provide a loan facility to encourage the muga rearers.

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