



Extent of livelihood opportunity of the sericulture farmers in Kamrup district of Assam

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| ARTICLE INFO | ABSTRACT |
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| Received : 23 February 2022 Revised : 03 June 2022 Accepted : 11 June 2021 Available online: 08.01.2023 Key Words: Decision making ability Extension contact Livelihood Risk bearing ability Sericulture | The study was conducted with a sample of 120 sericulture farmers in Kamrup district of Assam in three development blocks viz. Bongaon, Boko and Chayani Borduwa. The study revealed that majority (43.33%) of the respondents belonged to middle age group, 36.67% were illiterate, 45.83% belonged to small size family and 69.17% had pucca house. In case of operational land holding majority (34.17%) of the respondents possessed small size of land holding, 33.95% had annual income ranging from Rs.75,001-1,00,000, 75.00% had medium level of extension contact, 61.67% had moderate level of risk bearing ability, 59.17% had moderate level of decision-making ability and only 23.33% had received training. Most of the respondents (35.00%) practiced "Sericulture +paddy+plantation crops" followed by "Sericulture+paddy+piggery" (15.83%) and "Sericulture+paddy+fruits" (12.50%) as their livelihood options. Education, family size, house type, operational land holding risk bearing ability and decision-making ability have significant relationship on livelihood options. |

Introduction

Sericulture is an economically feasible and commercially viable agro-based labour-intensive industry comprised of food plant cultivation, silkworm rearing, reeling and spinning, yarn making and weaving. The economic advantages of sericulture industry lie in its high employment potential with low investment. Sustainable livelihood creation is a major role played by sericulture industry. Sericulture provides stable income to many rural agricultural families and a livelihood to scores of landless farm and non-farm women labourers giving much economic strength (Sarkar *et al.*, 2017). In the global textile parlance, India has the unique identity for production of all the four commercial types of silk viz., mulberry, muga, eri and tasar. It is the second largest producer of silk

among all the silk producing countries and contributes about 36.76 per cent to the total world raw silk production during the year 2020 (Anonymous, 2021a). Sericulture in India provides livelihood to about 9.4 million population of the country indicating a growth rate of 2.74% per cent during 2019-20 (Anonymous, 2021b). Sericulture industry plays indispensable role in the economy of Assam. With the richest tradition of silkworm rearing, the state contributes almost 82.29 per cent of muga silk and 70.09 per cent of eri silk production in India and shares about 14.17 per cent of total silk production of the country (Anonymous, 2020). The Kamrup district of Assam plays a major role in silk production and is an emerging 'Textile Hub' of Northeast India. About 477 seri-villages and 17,074

families of the district is associated with sericulture practice and area under eri, muga and mulberry food plant cultivation is 2915.16 hectare (Anonymous, 2019a). It is playing an important role in mitigating the problem of unemployment and also in uplifting the socio-economic status of sericulture farmers of Kamrup district. The present study is aimed to know how sericulture fulfils the opportunities of livelihood for the sericulture farmers, its diversification and impact in the livelihood security.

Material and Methods

The study was carried out purposively in 3(three) Development Blocks of Kamrup Sadar Sub-division under Kamrup district viz. Boko Development Block, Bongaon Development Block and Chayani Borduwar Development Block. Two villages were selected from each block viz., Nowapara village and Thangkula village from Boko development block; Batakuchi village and Makhandal village from Bongaon development block and Rani Khamar village and Baregaon village from Chayani Borduwa block. A total of 120 respondents were selected for the present study selecting 20 respondents randomly from each of the 6 villages under the 3 surveyed Blocks. The primary data was collected by following the personal interview method using standardized structured interview schedule. Data was analyzed using statistical tool viz., frequency, percentage, Karl Pearson's correlation of coefficient, Chi-Square and multiple regression (Sahu, 2010).

Results and Discussion

Profile characteristics of the sericulture farmers

A total of ten socio-personal, socio-economic and psychological variables were examined (Table 1) for the present study. Majority (43.33%) of the respondents belonged to middle age group and they could better utilize their skill as well as resources for income generation and sustaining their livelihoods. The data pertaining to education level of the farmers revealed that majority of the respondents (36.67%) were illiterate and no respondents found to have educational qualification up to graduate or post graduate level although the literacy rate of Kamrup district is 75.55% (Anonymous, 2019b). Majority (45.83%) of the respondents belonged to small size family and 69.17% of them had pucca

house. In case of operational land holding, majority (34.17%) of the respondents possessed small size of land holding. It was found that 33.95% had income ranging from Rs. 75001-100000. Rabha and Saikia (2021) reported that majority of the women (62.50%) involved in eri culture belong to the income level upto Rs. 15,000 followed by 23.33 per cent women in the range of Rs. 15,001- Rs. 25,000 and 10.83 per cent in the range of Rs. 25,001- Rs. 35,000. Sericulture can be a major booster which may be taken by the small and marginal farmers to earn extra income to their livelihood option. Present study revealed that majority (75.00%) of the farmers had medium level of extension contact, moderate level of risk bearing ability (61.67%) and moderate level of decision-making ability (59.17%). As regards to training exposure, only 23.33 % of the respondents received training. Yadav and Dahiya (2020) revealed that training of women farmers was important to overcome the constraints during marigold cultivation in Gurugram district of Haryana.

Distribution of Sericulture farmers of Kamrup district according to different types of livelihood opportunities

Almost all the respondents in the study area were involved in different types of livelihood opportunities (Table 2) in addition to sericulture such as plantation crops, paddy, piggy, dairy, goatery, poultry, fruits and others. Most of the respondents practiced paddy and plantation crops in addition to sericulture, followed by paddy and piggy, paddy and fruits, poultry and goatery. In this regard, it is to be stated that the study area was protected under tribal belt and block due to which the respondents could utilize the forest reserve land for cultivation of plantation crops which provide heavy income within short duration of time. Piggy was practiced as livelihood options due to the reason that pork has a high market demand in the locality. Hotels and restaurants of Guwahati city mainly collect pork from the study area due to its quality and affordable price. Dairy is adopted by the respondents as it provides daily income through production of milk and milk products and considered as a livelihood opportunity due to its relative advantage in terms of economic viability through production of farmyard manure to be used

Table 1: Profile characteristics of the sericulture farmers in Kamup district of Assam (N = 120)

| SN | Profile characteristics of the Sericulture Farmers | | Frequency | Percentage |
|-----|--|----------------------------|-----------|------------|
| 1. | Age | 18-35 (Young) | 18 | 15.00 |
| | | 36-50 (Middle) | 52 | 43.33 |
| | | 51 and above (Old) | 50 | 41.67 |
| 2. | Education | Illiterate | 44 | 36.67 |
| | | Primary School Passed | 29 | 24.17 |
| | | Middle School Passed | 24 | 20.00 |
| | | High School Passed | 15 | 12.50 |
| | | Higher secondary passed | 8 | 6.67 |
| | | Graduate | 0 | 0 |
| | | Post graduate and above | 0 | 0 |
| 3. | Family Size | Small Family (2-4) | 55 | 45.83 |
| | | Medium Family (5-7) | 33 | 27.50 |
| | | Large Family (More than 8) | 32 | 26.67 |
| 4. | Type of House | RCC | 10 | 8.33 |
| | | Kutcha | 27 | 22.50 |
| | | Pucca | 83 | 69.17 |
| 5. | Type of land holding | Marginal (Below 1 ha) | 29 | 24.17 |
| | | Small (1-2 ha) | 41 | 34.17 |
| | | Semi medium (2-4ha) | 36 | 30.00 |
| | | Medium (4-10 ha) | 14 | 11.67 |
| | | Large (More than 10 ha) | 0 | 0 |
| 6. | Annual Income | Up to Rs.35000 | 12 | 10.00 |
| | | Rs 35001 to 75000 | 34 | 28.33 |
| | | Rs. 75001 to 100000 | 41 | 33.95 |
| | | Rs. 100001 and above | 33 | 27.50 |
| 7. | Extension Contact | Low | 16 | 13.33 |
| | | Medium | 90 | 75.00 |
| | | High | 14 | 11.67 |
| 8. | Risk Bearing Ability | Low | 32 | 26.67 |
| | | Moderate | 74 | 61.67 |
| | | High | 14 | 11.67 |
| 9. | Decision Making Ability | Low | 28 | 23.33 |
| | | Moderate | 71 | 59.17 |
| | | High | 21 | 17.50 |
| 10. | Training Exposure | Yes | 28 | 23.33 |
| | | No | 92 | 76.67 |

in the plantation crops. Poultry was utilized for the production of eggs and meat for their household consumption and extra income earned help in their livelihood security. The respondents practiced goatery with the growing market demand of mutton amongst consumers and considered as a quick source of income and require less monitoring. Vegetables and fruits cultivation along with sericulture was also adopted as it helps in continuity of income from year-round production. The other types of livelihood opportunities such as business, agro-tourism,

handicrafts, weaving, input dealer and custom hiring were also some of the livelihood opportunities of the respondents in the studied area. Nagaraju and Raghavendra (2016) in his study reported that crop, dairy, sheep, piggery and sericulture were practiced as an important integrated farming system by the scheduled caste farm families in CB Pura district of Karnataka. Kumar *et al.* (2020) in their study reported that the integrated approaches can provide sustainable livelihood for the rural people particularly small and marginal farmers.

Table 2: Distribution of Sericulture farmers of Kamrup district according to different types of livelihood opportunities

| Livelihood Opportunities | Frequency | % |
|-------------------------------------|-----------|-------|
| Sericulture+Paddy+Plantation Crops | 42 | 35.00 |
| Sericulture+Paddy+Piggery | 19 | 15.83 |
| Sericulture+Paddy+Fruits | 15 | 12.50 |
| Sericulture+Poultry+Goatery+Others | 11 | 9.17 |
| Sericulture+Plantation Crops+Fruits | 7 | 5.83 |
| Sericulture+Dairy+Poultry | 5 | 4.17 |
| Sericulture+Vegetables+Dairy+Othe | 4 | 3.33 |
| Sericulture+Goatery+Fruits | 4 | 3.33 |
| Sericulture+Piggery+Others | 4 | 3.33 |
| Sericulture+Paddy+Dairy | 3 | 2.50 |
| Sericulture+Others | 2 | 1.67 |
| Sericulture+Plantation crops+Others | 1 | 0.83 |
| Sericulture+Poultry | 1 | 0.83 |
| Sericulture+Vegetables+Fruits | 1 | 0.83 |
| Sericulture+Dairy+Poultry+Goatery | 1 | 0.83 |

Table 3: Factors affecting the livelihood opportunities of the sericulture farmers

| Variables | 'r' value | χ^2 value |
|--------------------------|-----------|------------------------|
| Age | -0.241* | - |
| Education | - | 420.667 ^a |
| Family size | 0.218* | - |
| House type | - | 216.588 ^a |
| Operational land holding | 0.325* | - |
| Extension contact | - | 2825.688 ^{a*} |
| Risk bearing ability | 0.303* | - |
| Decision making ability | -0.159 | - |
| Training exposure | -0.129 | - |

*Significant at 5%, ^a Association

Factors affecting the livelihood opportunities of the sericulture farmers

The data on correlation coefficient values between extent of livelihood opportunity and the various independent variables presented in Table 3 revealed that age of the respondents found to have negative and significant (-0.241) relationship with the livelihood opportunities. This indicates that less is the age of the respondents more would be the chances of gaining extent of livelihood opportunities. The young and middle age respondents were more energetic and efficient in carrying out livelihood activities as compared to old aged respondents. Education (420.667^a) and house type (216.588^a) had no association with the extent of livelihood opportunities of the respondents.

Operational land holding (0.325*) had positive and significant relationship with the livelihood opportunities of the respondents. Extension contracts (2825.688^{a*}) had association with the extent of livelihood opportunities of the respondents. Family size (0.218) and risk bearing ability (0.303) of the respondents had positive and significant relationship with the extent of livelihood opportunities. Decision making ability (-0.159) and training exposure (-0.129) of the respondents had no relationship with the extent of livelihood opportunities.

Ifeanyi-obi and Matthews-Njoku (2014) in their study on socio-economic factors affecting choice of livelihood activities among rural dwellers in Southeast Nigeria reported that age was positively significant while education and monthly income correlated negatively with livelihood activity. Binkadakatti (2013) found that family size had positive and significant relationship with livelihood security of rehabilitant farmers in Upper Krishna Project (UKP) area of Bagalkot district of Karnataka state. Islam *et al.* (2015) revealed that socio-economic characteristics of the indigenous households, education, family composition, main occupation, housing status and gross annual income had positively significant correlation with the livelihood dependency on forest; age and size of land holding had non-significant association with the livelihood dependency of indigenous people of forest in Jharkhand district.

Multiple regression analysis of factors affecting the livelihood opportunities of the sericulture farmers

Data presented in table 4 revealed that education and risk bearing ability were found to have significant relationship with livelihood opportunities of the sericulture farmers at 0.01 level of significance while family size, house type, operational land holding and decision-making ability have significant relationship with livelihood opportunities of the sericulture farmers at 0.05 level of significance. Age, extension contact and training exposure did not have significant relationship with the livelihood opportunities of the sericulture farmers. This indicated that the education and risk bearing ability has high impact whereas family size, house type, operational land holding and decision-making ability were also found to have impact on the

livelihood opportunities of the sericulture farmers in Kamrup district.

Table 4: Multiple regression analysis of factors affecting the livelihood opportunities of the sericulture farmers

| Variables | 't' value | 'sig' value |
|--------------------------|-----------|-------------|
| (Constant) | 0.613 | 0.540 |
| Age | -1.700 | 0.091 |
| Education | 3.018** | 0.003 |
| Family size | 2.249* | 0.026 |
| House type | 2.726* | 0.007 |
| Operational land holding | 2.591* | 0.010 |
| Extension contact | 0.062 | 0.950 |
| Risk bearing ability | 3.174** | 0.001 |
| Decision making ability | -2.156* | 0.033 |
| Training exposure | -1.838 | 0.068 |

**Significant at 1%, *Significant at 5%

The R-square value 0.400 implies that the independent variables considered for the study are 40% responsible for the variability in the model also to determine the livelihood opportunities of sericulture farmers. Soini (2005) found that land size and age of farmers in the slopes of Mt. Kilimanjaro, Tanzania had significant influence in varying patterns of assets and strategies of livelihood. Ramya *et al.* (2017) revealed that education, land holding, annual income, extension contact, mass media exposure, social participation, economic orientation, risk orientation and level of aspiration had shown positively significant relationship and fatalism had shown negatively significant relationship with livelihood security of tribal farmers in high altitude tribal zone of Karnataka state.

Conclusion

The findings of the study concerning the livelihood of the sericulture farmers would help in drawing relevant policy decision to facilitate, upscale and secure their livelihood. In the area of study, mostly

middle age group were engaged in sericulture than the young age group. Young people are energetic and dynamic. Therefore, they may be encouraged by providing necessary facilities to take this venture as their livelihood option. Since majority of the respondents in the study area do not have any training exposure on sericulture, training on different sericulture related activities may be organized for the upliftment and encouragement of new generation towards the sector. Most of the sericulture farmers practice paddy cultivation for livelihood along with sericulture. Therefore, sericulture can be regarded as one of the most propitious avocations for the development of socio-economic condition of the rural population in Assam. Based on the results obtained regarding the livelihood options of the sericulture farmers, occupations can be categorized and depending upon their priority, developmental initiatives can be planned by the government and development organizations. Government can consider the factors like education, family size, house type, operational land holding and decision-making ability which were found to have significant effect on livelihood opportunities. Government may give more emphasis on these factors while selecting beneficiaries for projects or programmes and trainees for trainings. Thus, the findings of the present study are imperative to conclude that sericulture has immense potential in generating livelihood for every section of the society. Though sericulture has always been remained as a subsidiary cottage industry it would be a good option for livelihood opportunity in Assam.

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Conflict of interest

The authors declare that they have no conflict of interest.

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