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Involvement and contribution of women in eri culture activities in Jorhat district of Assam

Monimala Saikia and Kumud Ghosh

Abstract
A survey was carried out during 2015-16 in Jorhat district of Assam to know the involvement and contribution of women in eri culture. Data were collected purposefully from 413 household actively associated in eri culture through personal contact method by using the pre-structured interview schedule from six development block *viz*. Jorhat Development Block (Baghchung), North-West Dev. Block (Dhekorgarah), East Dev. Block (Selenghat), Kaliapani Dev. Block and Central Dev. Block (Chipahikhola). Simple statistical technique was used to know the involvement and contribution of women in eri culture activities in Jorhat district. Study revealed that average 2.1% and 1.41% women participated in annual host plant (*Castor*) and perennial host plant (*Kesseru* and *Borpat)* cultivation and their management respectively. On the other hand, average 78.95% women participated in eri silkworm egg production, rearing and post rearing activities. Most of the women involved in eri culture belong to 50 – 54 age groups. Average 31.40 % women play an active role in decision making. 71.91% women pointed out that lack of organized market is the major problem in eri culture.

Keywords: Eri culture, host plant cultivation, egg production, rearing and post rearing

Introduction
Sericulture is an agro-based cottage industry and it is the meeting point of art and science. Silk production is a livelihood opportunity for millions of people. It is one of the labour intensive and low capital intensive cottage industries with high output. India is the only country of the world which produces all the four major varieties of silks *viz*. mulberry, eri, muga and tasar. It is the second largest producer of silk in the world. Sericulture plays an important role in the upliftment of socio-economic development of a largely agrarian economy like India and gainful self employment both in pre and post cocoon sector by employing 8.51 million persons during the year 2016-17 [1].

Assam produces silk from the time immemorial. It produces eri, muga, mulberry and tasar silk. Out of four, eri occupies the first position in terms of production and generation of employment in Assam. In 2016-17 total eri silk production of Assam was 3619 MT [2] and 4,25,382 nos. of families are engaged in eri culture activities [3].

Sericulture is a women friendly economic activity in rural India. Women participate in a variety of sericulture activities and performed their tasks most skillfully. The involvement of women in different activities of sericulture is about 60% [4]. In fact, women in general are found to bear the double burden in the development process – one on the domestic front and the other on the economic front. It is found that women are engaged in work when other members of the family are enjoying rest [4]. Fairly good numbers of references regarding women's participation in sericulture in India are available [4-10]. There are total 492 nos. of sericulture villages and 34,265 nos. of farmers are engaged in the eri sector in Jorhat district of Assam [3]. Jorhat district has produced 108.31 MT eri silk during the year 2016 [3]. Jorhat district was the second largest producer of eri silk during the year 2014-15. But, till now there is little information regarding involvement and contribution of women in eri culture activities in Jorhat district of Assam. Therefore, an attempt has been made through this study to find out the involvement and contribution of women in eri culture activities in Jorhat district of Assam.

Materials and Methods
Jorhat distinct of Assam is identified purposefully for the present study because a large number of rearers are involved in eri culture from this district and they produce a huge quantity of eri silk.

For the present study 413 nos. of women eri rearers actively associated in eri culture were selected purposefully through personal contact method by using the pre-structured interview schedule from six development block *viz*. Jorhat Development Block (Baghchung), North-West Dev. Block (Dhekorgarah), East Dev. Block (Selenghat), Kaliapani Dev. Block and Central Dev. Block (Chipahikhola). Simple statistical technique was used to know the involvement and contribution of women in eri culture activities in Jorhat district.

Result and Discussions

Participation of women in annual host plant (*Castor*) cultivation and their management: Present study (Table 1) depicted that participation of women in annual host plant (Castor) cultivation and their management is very low (average 2.1%). Table 1 shows that 0.97% women involved in land preparation, 1.94% women involved in pit digging, 4.36% women involved in seed sowing, 0.97% women involved in cultural operation (watering, weeding etc.), 1.45% women involved in fertilizer application and 2.91% women involved in plant protection.

Participation of women in perennial host plant (*Kesseru* and *Borpat)* cultivation and their management: It has been found from the present study that participation of women in perennial host plant (*Kesseru* and *Borpat)* cultivation and their management is also very low (average 1.41%). Table 2 shows that 0.97% women involved in nursery development, 1.94% women involved in nursery management, 2.91% women involved in main field preparation, 1.94% women involved in pit digging, 1.45% women involved in manuring at the pit, 0.48% women involved in transplantation, 0.97% women involved in cultural operation (watering, weeding etc.), 1.45% women involved in fertilizer application and 1.94% women involved in plant protection.

Table 1 and Table 2 revealed similar trend of participation of women in host plant cultivation and their management earlier reported by Mech and Ahmed [11]. They found in their study that average 3.8% women participated in eri host plant cultivation and their management. But, it is reverse in the case of mulberry cultivation earlier reported by Raveesha *et al*. [10].

Participation of women in eri silkworm egg production, rearing and post rearing activities: Present study revealed that participation of women in eri silkworm egg production, rearing and post rearing activities is high (average 78.95%). Table 3 shows that 74.09% women involved in selection of seed cocoon, 67.31% women involved in disinfection of grainage house, 78.45% women involved in storage of seed cocoon, 56.66% women involved in procuring of dfls, 73.12% women involved in production of dfls at own level, 75.54% women involved in disinfection of rearing house, 75.54% women involved in leaf harvesting and transportation, 94.92% women involved in feeding and bed cleaning, 96.37% women involved in collection of matured worms. 100% women involved in removal of pupae, 58.11% women involved in marketing of pupae and cocoon shell, 97.34% women involved in spinning, and 74.09% women involved in marketing of spun yarn.

It revealed a similar trend of participation of women in eri silkworm egg production, rearing and post rearing activities earlier reported by Mech and Ahmed [11] and Ahmed [6]. It also revealed similar trend earlier reported by Gautam & Sarma [7] in case of mulberry silkworm cultivation. Mech and Ahmed [11] found in their study that average 75% women participated in eri silkworm egg production, rearing and post rearing activities; whereas the present study shows that average 78.95% women involved in eri silkworm egg production, rearing and post rearing activities.

Participation of women in decision making in different activities of eri culture: It has been recorded from the present study that participation of women in decision making in different activities of eri culture is very low (average 31.40%). Data presented in Table 4 indicates that participation of women in decision making varied from contact with State Sericulture Department/CSB (77%) to plant protection (1.94%). On the other hand, same Table indicates that involvement of women in taking decisions have been recorded high in preparation of layings (74.54%), in the procurement of layings (55.69%), in the marketing of pupae (67.8%); but in some other cases it was found very poor *viz*., in procuring of improved eri spinning machine (2.91%), in plant protection (1.94%), in adoption of new cultivation practices (2.91%).

Similar trend of participation of women in decision making was found in earlier reports of Barman [12]; Bose *et al*. [13]; Joshi [14]; Nathan & Kelkar [15]; Rahman & Routray [16]; Satyavathi *et al*. [17] in the agricultural sector.

Age profile of the women involved in eri culture: Table 5 shows the age profile of the women involved in eri culture. Present study shows that the highest numbers of women rearers (27.12%) belong to the age group of 50 – 54 years; but found that involvement of young women belong to the age group of 15 – 19, 20 – 24, 25 – 29 and 30 - 34 years in eri culture is very poor. It indicated that that new generation is not interested in eri culture. However, Anitha and Kanimozhi [18] found more or less equal spread of women entrepreneurs in sericulture in all the age groups while studying in Tamilnadu. Roy and Sarkar [19] reported that there is cent percent involvement in sericulture by the two age groups of 14-19 years and 19-30 years, while 98.18% are engaged in the age group of above 30 years in the Alomtola village of Malda district, West Bengal.

Major problems of eri culture pointed out by the women involved in eri culture: 71.91% women involved in eri culture pointed out that lack of organized market is the major problem of eri culture. 14.04% women involved in eri culture pointed out that lack of funding is the major problem of eri culture. 4.36% women involved in eri culture pointed out that lack of land for host plant cultivation is the major problem of eri culture. On the other hand 3.15% women involved in eri culture pointed out that lack of proper improved machine for spinning is the major problem of eri culture. 2.18%, 1.69%, 1.94% and 0.73% women respectively involved in eri culture pointed out that the leaf crisis during winter season, lack of perennial host plant seed/ seedling, lack of irrigation facility and continuous generation (multivoltinism) of eri silkworm are the major problems of eri culture.

Anitha and Kanimozhi [18] found heavy work load is the major problem faced by most (37%) of the women followed by lack of time while studying in Tamilnadu; but, Goswami and Bhattacharya [9] reported that pest and disease attack is the major problem in sericulture faced by the women of Goalpara district of Assam.

Annual income of the women through eri culture: Data

presented in Table 7 indicates that women's annual income through eri culture varied from Rs. 5,000 - 10,000 (51.33%) to Rs. 35,001 - 40,000 (3.63%). It was observed from the present study that only 17.19% women involved in eri culture earned annually more than Rs. 20,000. Most of the women (78.69%) involved in eri culture earned annually less than Rs. 20,000; whereas Bharaty [20] reported Rs. 3,300 – 13,200 per family in a year from Kamrup district of Assam.

Table 1: Participation of women in annual host plant (Castor) cultivation and their management (N = 413)

Sl. No.	Activities	Women involved (Nos.)	Women involved (%)
1	Land preparation	4	0.97
2	Pit digging	8	1.94
3	Seed sowing	18	4.36
4	Cultural operation (watering, weeding etc.)	4	0.97
5	Fertilizer application	6	1.45
6	Plant protection	12	2.91
			Average = 2.1

Table 2: Participation of women in perennial host plant (*Kesseru* and *Borpat)* cultivation and their management (N = 413)

Sl. No.	Activities	Women involved (Nos.)	Women involved (%)
1	Nursery development	4	0.97
2	Nursery management	8	1.94
3	Main field preparation	12	2.91
4	Fencing	0	0
5	Pit digging	8	1.94
6	Manuring at the pit	6	1.45
7	Transplantation	2	0.48
8	Cultural operation (watering, weeding etc.)	4	0.97
9	Fertilizer application	6	1.45
10	Plant protection	8	1.94
			Average = 1.41

Table 3: Participation of women in eri silkworm egg production, rearing and post rearing activities (N = 413)

Sl. No.	Activities	Women involved (Nos.)	Women involved (%)
1	Selection of seed cocoon	306	74.09
2	Disinfection of grainage house	278	67.31
3	Storage of seed cocoon	324	78.45
4	Procuring of dfls	234	56.66
5	Production of dfls at own level	302	73.12
6	Disinfection of rearing house	312	75.54
7	Leaf harvesting and transportation	312	75.54
8	Feeding and bed cleaning	392	94.92
9	Collection of matured worms	398	96.37
10	Removal of pupae	413	100
11	Marketing of pupae and cocoon shell	240	58.11
12	Spinning	402	97.34
13	Marketing of spun yarn	214	74.09
			Average = 78.95

Table 4: Participation of women in decision making in different activities of eri culture (N = 413)

Sl. No.	Activities	Women involved (Nos.)	Women involved (%)
1	Take up eri culture as an occupation	56	13.56
2	Selection of variety of host plant	120	29.06
3	Host plant cultivation and maintenance	46	11.14
4	Plant protection	8	1.94
5	Adoption of new cultivation practices	12	2.91
6	Procurement of layings	230	55.69
7	Preparation of layings	312	74.54
8	Adoption of rearing technology	120	29.06
9	Marketing of cocoons	46	11.13
10	Marketing of pupae	280	67.8
11	Procuring of improved eri spinning machine	12	2.91
12	Contact with State Sericulture Department/CSB	318	77
			Average = 31.40

Table 5: Age profile of the women involved in eri culture (N = 413)

Sl. No.	Age group	Women involved (Nos.)	Women involved (%)
1	15 - 19	4	0.97
2	20 - 24	8	1.94
3	25 - 29	7	1.69
4	30 - 34	12	2.91
5	35 - 39	17	4.12
6	40 - 44	84	20.34
7	45 - 49	87	21.07
8	50 - 54	112	27.12
9	55 - 59	47	11.38
10	60 - 64	14	3.39
11	65 - 69	9	2.18
12	70 - 74	7	1.69
13	75 - 79	5	1.21

Table 6: Major problem of eri culture pointed out by the women involved in eri culture (N = 138)

Sl. No.	Constraints in eri culture	Women pointed out (Nos.)	Women pointed out (%)
1	Lack of organized market	297	71.91
2	Lack of fund	58	14.04
3	Lack of land for host plant cultivation	18	4.36
4	Lack of improved machine for spinning	13	3.15
5	Leaf crisis during winter season	9	2.18
6	Lack of perennial host plant seed/ seedling	7	1.69
7	Lack of irrigation facility	8	1.94
8	Continuous generation (multivoltinism)	3	0.73

Table 7: Annual income of the women through eri culture (N = 138)

Sl. No.	Annual Income in Rs.	Women involved (Nos.)	Women involved (%)
1	5,000 - 10,000	212	51.33
2	10,001 - 15,000	60	14.53
3	15,001 - 20,000	53	12.83
4	20,001 - 25,000	43	10.41
5	25,001 - 30,000	17	4.12
6	30,001 - 35,000	13	3.15
7	35,001 - 40,000	15	3.63

Conclusion

Women are attached to sericulture from time immemorial and playing significant role in the development of sericulture industry. But their contribution is not much recognized. However, lack of training and literacy as well as social restrictions have hampered their participation in sericulture. Even then, the higher proportion of women's participation in sericulture has so far been a natural and self-regulated phenomenon [21]. Sericulture is the only one cash crop in agriculture sector that gives returns within thirty days. It can provide income throughout the year. Therefore, sericulture related policies should be made more women oriented and rural women should be encouraged by Government and Non-governmental organizations for rapid development of this agro-based cottage industry as well as rural India.

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