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### Impact of family labour participation and hired labour for different activities of sericulture industry: A critical analysis

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#### ABSTRACT

Sericulture is considered as a labour intensive cottage industry and needs appropriate care at different stages. Mulberry cultivation and silkworm rearing are two major arms of this industry. Since sericulture setup is a marginal industry, it needs the coordination and right utilization of family labour along with hired labour. The present study after a critical analysis demonstrates that, for establishing mulberry garden or different activities of mulberry cultivation, the ratio of family labour and hired labours were 2.16:1 and 2.18:1 respectively. On the other hand in case of silkworm rearing during establishment year ratio of family labour and hired labour was 3.53:1. Considering the family participation, there is a significant economic benefit. On an average during one establishment year working on one hectare of mulberry garden starting from mulberry cultivation to silkworm rearing around Rs.227000 could be saved by the participation of family labour. Similarly, in case of one hectare of mulberry garden starting from mulberry cultivation to silkworm rearing from second year onwards, in each year for the different activities of mulberry cultivation ratio of family labour and hired labour were 2.49:1 and in case of Silkworm rearing ratio of family & hired labour was 3.76:1. It was found that, participation of family labour has greatly helped in saving significant amount and has led to maximum participation of the women's in sericulture industry.

## **Introduction:**

Sericulture has been found to be a very significant way of uplifting the poorer sections of some societies due to their continuous hard work in this cottage industry. Silk and silk products are mostly consumed by the people who belong to economically well-off classes and the value to a fair percentage reaches among the farmers, reelers, twisters and weavers. The major share goes to the cocoon grower (54.6%) followed by trader (17.8%), weaver (12.3 percent), twister (8.7 percent) and reeler (6.6 percent) [Jolly, M.S, 1988]. It is an agro based intensive labour cottage where each activity requires a huge number of labours. Progressive nations like Japan are forced to stop their sericulture to a larger extent due to lack of required labour. Sericulture has a huge capacity to generate employment in various sectors i.e. mulberry cultivation, silkworm rearing, silk reeling and seed production. It can led to greater employment generation and opportunities compared to other cash crops like paddy [Jolly, M.S, 1988]. Reports have shown that this industry can provide employment of 13 persons/hectare/year, providing a good chance for women's which ultimately helps

in welfare of the family (Prakash Kumar, 1986, Sekhar and Kumar, 1988). This industry is currently providing employment opportunities for 6 million people approximately making it 1/3 of total persons employed in cottage industry in our country. Due to versatile nature of this industry economically retarded tribal people have got an opportunity to earn their bread. Earlier reports from Kohli (1981) have demonstrated that rural development as an approach aiming at the total development of an area and its people by bringing about necessary institutional and attitudinal changes and by delivering a package of services through a process of planning and a battery of extension methods. Thus, rural development is a complex phenomenon involving several factors such as economic factors, availability of information and inputs, farmers' knowledge about enterprise, constraints in the application of technology etc. Development does not depend alone on soil, water, availability of technology etc. In this context, utilization of labour assumes greater importance; however, we are aware that the cost of labour is also increasing day by day. Due to marginal nature of this industry it is difficult to hire labour for different activities. On the other hand,

utilization of family labour not only helps to reduce overall cost but also generate employment for the rural people.

### **MATERIALS AND METHODS:**

The present study was carried out in 8 identified villages of Nabagram Block of Murshidabad District, West Bengal. The names of the villages are:

1. Rosulpur, 2. Hozbidanga, 3. Panchgram, 4. Gurropashla, 5. Charnak, 6. Daspara, 7. Kiriteshari, 8. Sarbanagar. A total of 80 families who are working in sericulture industries were interviewed by choosing 10 families from each village on the prepared questionnaire and collected data. The data collection by interviewing respondents was generally the simplest and cheapest method implied to the study. Mostly the interviews were administered to one respondent at a time, usually the farmer or the head of the household.

### **RESULTS & DISCUSSION:**

The main objective of this study was to find out the participation of family labour and hired labour in irrigating mulberry gardens and to evaluate the impact of family participation on the overall savings for the household. The results were divided in two

parts i.e. participation of family labour and hired labour for one hectare of irrigated mulberry garden during the establishment year and participation of family labour and hired labour for one hectare of irrigated mulberry garden from 2<sup>nd</sup> year onwards.

*Utilization of family labour & hired labour for one hectares of irrigated mulberry garden during establishment period:*

#### **A. Establishment of Mulberry Garden**

The present study reveals that 260 man-day's are required for deep digging purpose. Out of these days, major participation was from family labour. A total of 180 man-day's were from family labour and 80 man-day's were by hired labours. For the preparation of cuttings total no. of man-day's required were 25; of them 20 days were from family labour & 5 days from hired labour. For digging pits and planting, 300 man days were required. Out of these, family labour participation was 200 man days whereas hired labour was 100 man days (Table.1). So, during the establishment of a mulberry garden for 1 hectare of land, approximately 585 man days were required. Out of these, 400 man days were from family labour and 185 man days were from

hired labour participation. Therefore, the total ratio of family labour and hired labour is = 400:185=> 2.16:1.

**Mulberry cultivation (first year of establishment, Table 1)**

S.NO	ACTIVITIES	TOTAL NUMBER OF MAN-DAY'S* REQUIRED	FAMILY LABOUR	HIRE D LABOUR
1.	Deep digging	260	180	80
2.	Preparation of mulberry cutting	25	20	5
3.	Digging pits & planting	300	200	100
<b>SUB TOTAL "A"</b>		<b>585</b>	<b>400</b>	<b>185</b>

**B. Management of Mulberry Garden**

For the management of mulberry garden, participation from family labour and hired labour was subdivided in the following manner. For the purpose of inter cultivation 50 man-day's were required. Out of these, family participation was for 38 days and 12 days by hired labours. For the purpose of

weeding a total 60 man days were required. Out of these 60 man days, 42 man days were from family labour participation and 18 man days from hired labours. For the application of chemical fertilizers total 35 no. of Man-day's were required. Of these 35 man-day's, 30 man-day's were family labour and only 5 man-day's from hired labour. For the irrigation purpose 70 man-day's were required. Among these 70 man-day's, 45 man-day's were utilized from family labour and 25 man-day's were utilized by hired labours. For the purpose of leaf harvest, a total of approximately 160 numbers of man-day's were required. Among these man-day's family labour participated in 100 man days & hired labour for 60 man days. For the purpose of pruning, total no. of man-day's are required were 20. For this family labour participated for 16 days and hired labour for 4 days. Therefore, for the management of garden during the 1<sup>st</sup> year, family labour participation was for 271 man days and hired labour for 124 days. So, the ratio of participation of family labour and hired labour = 271:124 = 2.18:1.

*Utilization of family labour & hired labour for one hectare of mulberry garden for silkworm rearing during establishment period:*

S. N O.	ACTIVITIES	TOTAL NUMBER OF MAN-DAY'S* REQUIRED	FAMILY LABOUR	HIRED LABOUR
1.	Inter cultivation	50	38	12
2.	Weeding	60	42	18
3.	Application of chemical fertilizers & FYM	35	30	05
4.	Irrigation	70	45	25
5.	Leaf harvest	160	100	60
6.	Pruning	20	16	4
<b>SUB TOTAL "B"</b>		<b>395</b>	<b>271</b>	<b>124</b>

**Table. 2****Silkworm Rearing**

During the establishment year, generally 2-3 rearings are conducted as the leaves are available to silkworm larvae from 6 months onwards (Table 2). Silkworm rearing is mainly divided in 2 parts *i.e* chawki rearing and late age rearing. Rearing of silkworm larvae upto 2<sup>nd</sup> moult is known as chawki rearing. Rearing of 4<sup>th</sup> & 5<sup>th</sup> instars larvae are known as late age rearing. For the purpose of chawki rearing, 96 man days are

required. Out of these, 86 man days were from family labour participation and 10 man days were from hired labour. For the purpose of late age rearing, a total of 144 man days were required and among these family labour contribution was 99 man days and hired labour contributed 45 man days. For the purpose of spinning & harvesting, a total of 40 man days were required and out of these man days 36 man days were contributed from family labour and 4 man days by hired labour. For the purpose of cleaning, disinfection & preparation for next rearing; 24 man days were required. Among these 16 man days were contributed from family labour and 8 man days were from hired labour. So, for different activities of silkworm rearing, a total of 304 man days were required. Out of these, 237 man days were from family labour and 67 man days were contributed by hired labour. So, the ratio of family labour to hired labour =  $237:67 \Rightarrow 3.53:1$ .

Analysing the data from **Table 1** and **Table 2**, we found that, for the establishment of mulberry garden as well as carrying out different activities of mulberry cultivation ratio of family labour and hired labour was 2.16:1 and 2.18:1 respectively. On the other hand in case of silkworm rearing ratio of

family labour and hired labour was 3.53:1. The results have demonstrated that family labour contribution is more in silkworm rearing than mulberry cultivation. It is true that utilization of family labour is considerably more than hired labour but in case of silkworm rearing it is too much higher than hired labour.

S.NO	ACTIVITIES	TOTAL NUMBER OF MAN-DAY'S* REQUIRED	FAMILY LABOUR	HIRED LABOUR
1.	Chawki rearing	96	86	10
2.	Lateage rearing	144	99	45
3.	Spinning & harvesting	40	36	04
4.	Cleaning, disinfection and preparation for next rearing	24	16	08
<b>SUB TOTAL "2"</b>		<b>304</b>	<b>237</b>	<b>67</b>

**Table. 3**

If we consider economic point of view; in one hectare of mulberry garden starting from

mulberry cultivation to silkworm rearing during establishment year a total of 908 man-day's were utilized as family labour out of total 1284 man-day's. In this way, a household can save  $908 \times 250 = 227000$  of rupees by using family labour.

*Utilization of family labour & hired labour for one hectare of irrigated mulberry garden (2<sup>nd</sup> year onwards):*

It has been found that from 2<sup>nd</sup> year onwards sericulture rearing increases significantly. Mulberry plant starts growing in number of leaves. Now that the produce starts to increase, the number of workforces required for different activities also increases proportionally (Table 3).

For the mulberry cultivation utilization of family and hired labour is subdivided in the following manner. For the inter cultivation 100 man-day's were required. Out of these 76 man days were contributed by family labour and 24 man days by hired labour. For the purpose of weeding a total of 100 man days were required. Out of these 100 man days, 70 days were from family labour and 30 from hired labours. For the irrigation purpose 75 man day's were required. Among these 75 man day's, 50 man-day's were contributed by family labour and 25

man-day's by hired labours. For the application of FYM, a total of 20 man-day's were required. Of these 20 man-day's 16 man-day's were utilized by family labour and 4 man-day's were utilized by hired labour. For the application of chemical fertilizers 30 man-day's were required. Of these 30 man-day's, 26 man-day's were contributed from family labour and 4 man-day's by hired labour.

S. N O.	ACTIVITIES	TOTAL NUMBER OF MAN-DAY'S* REQUIRED	FAMILY LABOUR	HIRED LABOUR
1.	Inter cultivation	100	76	24
2.	Weeding	100	70	30
3.	Irrigation	75	50	25
4.	Application of FYM	20	16	4
5.	Application of chemical fertilizers	30	26	4
6.	Leaf harvest	600	420	180
7.	Pruning	30	24	06
<b>SUB TOTAL "A"</b>		<b>955</b>	<b>682</b>	<b>273</b>

**Table.4**

For the purpose of leaf harvest, a total of 600 man-day's were required. Out of these man-day's family labour contributed 420 days and hired labour contributed 180 days. For the purpose of pruning, 30 man days were required and among these family labours contributed 24 days and hired labour contributed 6 man days. In total, for the mulberry cultivation from the 2<sup>nd</sup> year onwards, family labour contributed 682 man days and hired labour contributed 273 days. So, the ratio of contribution of family labour and hired labour = 682:273 => 2.49:1

*Utilization of family labour & hired labour for one hectare of irrigated mulberry garden for silkworm rearing (2<sup>nd</sup> year onwards):*

During 2<sup>nd</sup> year, generally 5 rearings are done as the leaves are now available to silkworm larvae for whole year. Silkworm rearing is mainly divided in 2 parts i.e. chawki rearing and late age rearing. Rearing of Silkworm larvae up to 2<sup>nd</sup> moult is known as chawki rearing. Rearing of 4<sup>th</sup> & 5<sup>th</sup> instars larvae are known as late age rearing. For chawki rearing 240 man days were required. Out of these 205 man days were contributed by family labour and 35 man days were contributed by hired labour. For the purpose of late age rearing, 480 man

days were required and out of these 350 man days were contributed by family labour and 130 by hired labour. For the purpose of Spinning & harvesting, a total 120 man days were required and out of these 108 man days were contributed by family labour and 12 by hired labours. For the purpose of clearing, disinfection and preparation for rearing a total of 60 man days were required. Among these 48 were contributed by family labour and 12 by hired labour. So, for different activities of Silkworm rearing, a total of 900 man days were required and out of these 711 man days were contributed by family labour and 189 by hired labour making a ratio = 711:189 => 3.76:1.

Analysing **Table 3** & **Table 4**, we have found that for different activities of mulberry cultivation ratio of family labour and hired labour was 2.49:1. On the other hand in case of Silkworm rearing ratio of family & hired labour was 3.76:1. Again if we consider economic point of view in one hectare of mulberry garden starting from mulberry cultivation to silkworm rearing from second year onwards, in each year a total of 1393 man-day's were contributed from family labour out of 1855 man-day's. In this way, a household can save

1393×250=348250 of rupees by utilizing family labour.

S.NO.	ACTIVITIES	TOTAL NUMBER OF MAN-DAY'S* REQUIRED	FAMILY LABOUR	HIRED LABOUR
1.	Chawki rearing	240	205	35
2.	Lateage rearing	480	350	130
3.	Spinning & harvesting	120	108	12
4.	Cleaning , disinfection and preparation for rearing	60	48	12
<b>SUB TOTAL "B"</b>		<b>900</b>	<b>711</b>	<b>189</b>

\*1Manday=Working 8 hours/day.

**Conclusion:**

In present study, the role of family participation in different activities seems to be significant. Family labour participation reduced the cost of labour to larger extent helping each household greatly to increase their profit as well as employment. Studies by Jolly, 1988 suggested that sericulture is successfully practiced today as viable rural



industry because of two reasons; one is that it gives remunerative employment to family labour throughout the year and the other is that it ensures periodic income even to the small land holdings. Utilization of family labour also ensures women participation in this Industry. Most rural women in India spend 16-18 hours a day working at home and outside and their importance in the development of their own family has not been fully recognized and appreciated. Considering districts like Murshidabad, which is major silk producing district in West Bengal, male folks of the family migrate to different parts of the country and overseas (particularly UAE) and the small scale industry remains largely dependent on female members of the family. If the rural households are to be made economically viable self-sustaining units, the employment and income generation by rural women may be accepted as an index of the social development and progress of the country. In this junction Government as well as other beneficiary organizations may help or provide proper training to Sericulture practicing women or may encourage rural families to take Sericulture as a profession, it may also give women a good working environment in their vicinity.

## References:

1. Chattopadhyay, S, K., Sarkar, K. and Bhattacharya, D. 2004. Key Points Behind the Success of Cocoon Crops at Farmers Level in West Bengal. *Dissertation submitted to the University of Kalyani for the partial fulfillment of Master of Science in Sericulture.*
2. Chattopadhyay, S.K, Sarkar, K, Chattopadhyay, R, Baur, G and Trivedi, S. 2008. A Study On Socio-Economic, Health And Hygiene Status Of Women Engaged In Sericulture Industry In Sujapur Of Malda District, West Bengal. *Social Environmental and Biological Association.* Vol. 5, No.1, 2008, pp.77-81.
3. Dillon, T. I., John, I. and Hardakar, J.B.1989. Farm management research for small farmer development. *FAO Bulletin*, 41:21-49.
4. Jolly, M.S. 1988. Tropical Sericulture Economics- Study. *Proceedings of the international congress on tropical sericulture practices (February 18-23, 1988).* Published by Central Silk Board.95-98.
5. Kohli, M, M. 1981. Integrated Approach to Rural Development, Paper presented in the seminar “*Concepts and Approaches to Rural Development*” Feb.24-27 at Jaipur.
6. Prakash Kumar, R. 1986. A study on the credibility and Utilization pattern of Sericulture Information Sources among farmers of Chiikaballapur Taluk, M.Sc. (Agri) Thesis, University of Agril.Scioences, Bangalore.

7. Ray, G. L. and Mondal, S. 1997. *Research Method in Social Science & Extension Education*, Naya Prakash, Calcutta.
8. Sarkar, K, Majumdar, M and Ghosh, A. 2017. Critical analysis on role of women in sericulture industry. *International journal of Social Science* 6(3):211-222.
9. Sarkar, K, Majumdar, M and Ghosh, A. 2018. Critical analysis on role of women in sericulture industry. *Economic Affairs*. vol 63, 209-221.
10. Sekhar, P and Kumar, R. 1988. Role of rural women in Indian Sericulture. *Proceeding of the international congress on tropical sericulture practices* (February 18-23, 1988). Published by Central Silk Board.65-76.



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