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Sericulture play key role to employment generation and socio-economic empowerment of tribal women

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Abstract
Sericulture is an extremely labor intensive industry and occupies a pivotal position from the point of providing employment and additional income to weaker sections. Sericulture activity brings regular income to the community without any bias of caste, creed, gender, or religion. India is the only Country in the world to produce all the four known varieties of silk including Mulberry, Eri, Tasar and Muga. In 2013-2014 the employment in sericulture sector were 7.85 million persons and it goes up to 8.51 in 2016-17.The total raw silk production was 26480 MT in 2013-14 which is recorded as 30265 MT in 2016-17. In Chhattisgarh Tropical Tasar and mulberry are reared on commercial scale. In 2016-17 the Total raw silk production in Chhattisgarh claimed as 361 MT. The sericulture industry has witnessed a quantum jump in raw silk productivity. The crucial aspect of sericulture lies in its capacity to generate more employment both on-farm and off-farm activities, especially in rural areas. The employment potential is much greater in silkworm rearing activities than mulberry cultivation. It provides profitable occupation to small and marginal farmers. Sericulture provides an excellent and unique opportunity for socio-economic progress in the context of developing country like India, being a highly labour intensive industry. Sericulture is rightly known as "Industry of the poor". More than half of the labour force used in cultivation of mulberry and silkworm rearing was contributed by women labour. Women's participation was high in rearing sector than mulberry cultivation. A great deal of variation exists in their participation across different sericulture regions and socio economic groups and also across their age, status in the household and educational levels. The study concludes with some suggestions to improve the long term feasibility of sericulture.

Keywords: sericulture, employment, socio-economic, tribal, income

1. Introduction
The establishment of rural based industries like sericulture can be very effective in creating new job opportunities and providing supplemental income. Being a rural agro-based labor intensive industry this sector can also play vibrant role to check migration from rural to urban areas (Gangopadhyay, 2009) [17]. The word "Sericulture" has been derived from the word "Su" (Si) which means silk. Sericulture, the art and science of growing silkworm, food plants, rearing silkworms and production of silk is basically an agro-industry and an economically rewarding enterprise consisting of several sets of activities and plays a predominant role in shaping the economic destiny of the rural people (Dewangan *et al.*, 2012) [13]. Sericulture, is divided in two sectors namely farm and industry. The farm sector involves growing silkworm's food plants, rearing silkworm to produce cocoons and eggs. Reeling, twisting, dyeing, printing, finishing, knitting form the industry sector (Srivastav PK *et. al.* 2005) [41]. Sericulture, the production of silk worms and thus ultimately of silk fibre (Ganga and Chetty, 1991) [16], has become a promising rural activity in India because of its minimum gestation period, minimal investment, maximum employment potential and quick turnover for investment (Kasi, 2000) [25]. Sericulture activity brings regular income to the community without any bias of caste, creed, gender, or religion. A remarkable feature of this activity is its egalitarianism—sericulture farmers, rich and poor, earn the same income from it. As women has a crucial role in the activities of sericulture, it equally creates opportunities and make them independent socially, economically, politically, and otherwise **(**Goyal, 2007; Pillai & Shanta, 2011; Thomas, Muradian, de Groot, & de Ruijter, 2010; Vijayanthi, 2002) [19, 34, 44, 46]. Sericulture is an extremely labor intensive industry and occupies a pivotal position from the point of providing employment and additional income to weaker sections (Best & Maier, 2007; Bhatta & Rao, 2003) [5, 6]. Aiyaswamy (1980) [3] observed that 607 man days of male and 827 man days of female labour were involved in sericulture per hectare per year in Coimbatore district. Rajapurohit and Govindaraju (1981) [38] It is found that, out of Rs. 9,166 household income, Rs.7638 was from sericulture accounting to about 83.33 percent under rainfed conditions. The employment of labour for mulberry cultivation and cocoon production was 166.68 man-days per acre per year. Chowdhury (1984) [9] reported that sericulture is rightly known as "Industry of the poor". It involves a number of activities like establishment of breeding stock, foundation stock egg production, mulberry cultivation and rearing of silkworm. Sericulture is mainly adopted as, subsidiary vocation alongside agriculture activities. Rearing of silkworm does not involve heavy financial investments and therefore sericulture is of considerable importance in the sector especially in a developing country like India. It is benefiting the weaker sections of the society. The most important consideration is the effective utilization of fmily labour, Particu1arly the aged, handicapped illiterate and women folk. Chandrasekar (1985) [8] found that sericulture provides two

times more employment i.e 538 man days /ac/yr than other alternate crops in Dharmapuri district of Tamil Nadu. Hanumappa (1986) [20] found that cultivation of one hectare mulberry required 371 man days per year. It was also estimated that the employment generation was about 400 man days per annum per acre (Nagaraj *et al*., 1986b) [30]. Kannan (1987) [24] showed that women have become an indispensible part of sericulture industry. Let it be weeding the mulberry garden, leaf picking, chawki rearing, bed cleaning during rearing, spinning or harvesting of cocoons, trained women always have an upper hand in all these operations. One acre of mulberry generated employment for 430 man days under rainfed and 1,168 man days under irrigated conditions. (Benchamin and Jolly, 1987) [4, 22]. Kallappa and Vijay kumar (1988) [23] reviewed that the crucial aspect of sericulture lies in its capacity to generate more employment both on-farm and off-farm activities, especially in rural areas. The employment potential is much greater in silkworm rearing activities than mulberry cultivation. It provides profitable occupation to small and marginal farmers. Swaminrthan (1988) [44] argued that activities like sericulture, which can enhance family income and generate off- farm employment at the post production phase, hold the key to a lasting solution for the contrasting challenges faced by the farmers. Acharya (1993) [1] showed that sericulture provides an excellent and unique opportunity for socio-economic progress in the context of developing country like India, being a highly labour intensive industry. Silkworm rearing alone generates employment for about 1.5 and 4.5 person/year/hectare, under rainfed and irrigated conditions respectively (Rajesh, 1995) [37]. Employment generation was inversely proportional to 57 holding size. Higher employment in small farms was due to higher leaf yield and brushing capacity per unit area. A direct relationship was observed between hired labour use and holding size (Ganapathi Rao *et al*., 1995) [15]. The pattern of labour usage and productivity of labour in sericulture with respect to various activities in different categories of farmers were studied by Jayaram *et al*. (1998) [21, 27]. The results showed that 357 man days were engaged per acre per year in irrigated sericulture as against 170 man days in rainfed sericulture. Mulberry sericulture can solve problems like unemployment, rural migration and poverty to a considerable extent not only in the irrigated belts but also in dry land areas. The use of family labour was found to be negatively related with the increase in holding size (Lakshmanan *et al*., 1998b) [27]. Pushpa and Netaji (1999) [35] conducted a study and found that maximum additional employment generated (515 man days) was in sericulture compared to poultry (160 man days) and dairy (170 man days). On studying the comparative economics of silk growers on the basis of land holding in Etawah district, Padma Tripathi (2000) [33] opined that sericulture offers maximum support in earning and employment needs to landless farmers. The landless group utilized more family labour (37.08%) when compared to marginal (27.30%) and small (20.14%) groups. Kumaresan and Vijaya Prakash (2001) [26] reported that the labour usage was more in mulberry cultivation for CSR hybrid rearing over cross breed rearing by 3.29%, but it was quite reverse in silkworm rearing as most of the sampled CSR hybrid rearers adopted labour saving shoot rearing technology instead of the conventional tray rearing methods adopted by most of the cross breed rearers (Behera, 2004). Bisen *et al.* (2005) [7] studied the economics of cocoon production in Balaghat district of Madhya Pradesh and concluded that approximately 51% of the cost was spent for human labour.

Of the total cost of one acre mulberry garden establishment the expenses for human labour accounted to 38.77% (Lakshmi Prasad, 2005) [29]. More than half of the labour force used in cultivation of mulberry and silkworm rearing was contributed by women labour (Prakash kumar, 1986). Out of the 4005 man days of employment opportunity in sericulture activities, 2116 man days were of light nature fit for women folk (Jolly, 1987) [4, 22]. Dandin (1994) [11] surveyed the involvement of women in various sericulture activities and revealed that involvement of women was 49.55% and 49.67% in mulberry production and silkworm rearing respectively. Women's involvement was found to be less in seed production (20.46%). Women's participation was high in rearing sector than mulberry cultivation. A great deal of variation exists in their participation across different sericulture regions and socio economic groups and also across their age, status in the household and educational levels (Gayathri Devi, 1994) [18]. Analysis of the Udaipur sericulture project, established by the Government of Rajasthan proved that it had a large impact on the lives, status, time use and attitudes of the large number of women who have participated in the project (Creevey, 1996) [10]. According to Naresh and Narayana Gowda (2000) [31] the sericulture industry was fairly managed because the participation of women was 61% in total work force in various operations of mulberry cultivation and silkworm rearing. Savithri and Sujathamma (2003) [40] concluded that work participation of men and women was not similar in various sericulture operations and their decision making was not commensurate with their involvement. In sericulture, women were relegated to less skilled but laborious activities like weeding and disinfecting the equipments (Siddagangamma, 2006) [42]. Training of large number of women sericulturists accelerated the promotion of bivoltine sericulture in Tamil Nadu, because women were involved in most of the sericulture activities (Qadri and Dandin, 2006) [36]. The data on female and male labour ratio showed that the ratio was 2.25 for leaf production and 1.90 for silkworm rearing (Lakshmanan and Geetha Devi, 2007b) [28].

Sericulture in India is a fairly organized activity in the cottage industry segment, largely rural based and labour intensive. Cultivation is spread Over 22 states.Covering 172000 hect. Across 54000 villages operating 258000 handlooms and 29340 power loom (Dewangan, S. K. *et. al.* 2011) [12]. Sericulture enterprise in its totality is a long chain industry from mulberry cultivation to fabric making. India stands second in silk production; next to China. Total raw silk production in India was 26480 MT, out of which mulberry raw silk production was 19476 MT (73.55%) during 2013-2014 and it goes up to 30265 MT in 2016-17 (Annual report, CSB, 2016-2017) [2]. In Chhattisgarh Tasar and mulberry are reared on commercial scale by the tribal of traditional Districts of Bastar, Raigarh, Bilaspur and Surguja. Mulberry is a non-traditional activity for Chhattisgarh which was introduced in 1980. In the year 1993 Mulberry cocoon production recorded as 1.00 lakh KG. In the time of establishment of Chhattisgarh

state i.e. 2000-01 Total number of 12269 hectare plantation (Departmental tasar+ Project+ Natural forest block) are available whereas in 2014-15 near about 20590 hectare for Tasar food plantation and 11797 hectare are identified for rearing and cocoon production. For Natural Tasar development 34737 hectare of sal and other food plants are available out of which 9844 hectare are used for Natural seed multiplication camp. In 2014-15 Total Tasar center are 381 and Mulberry center are 74 in number. 03 Mulberry grainage, 05 Reeling Units, 05 Twisting Units have been established. Total 12, 89, 44, 930 number of Tasar cocoon are produced and same year 66278 kg. Mulberry cocoon are produced. Employment generation are recorded as 481 families for Tasar and 990 families for Mulberry sector. In overall 30792 people are benefitted with Tasar sector in collection and sell of cocoon. In 2016-17 Total Tasar cocoon production are registered as 19, 84, 16,184 number and in Mulberry 60502 kg are achieved. In Tasar sector Total 55422 people and in Mulberry sector 908 families are benefitted. In the same year Total 266 natural multiplication camp are organized. 28.29 lakh numbers of Dfls are supplied to rearers. In the state Total 183 women self help group are working in Reeling sector and 2520 motorized Reeling and spinning machine are working (DOS, Sericulture, Chhattisgarh). Raigarh district stand first in area under plantation of host plant for silkworm rearing. Raigarh district has total area of 2022.6 ha Daba tasar farming under with production of 15,93,7,216 lakh cocoons 63, 6375 beneficiaries (Anonymous, 2012).

2. Material and Methods

The present investigation was carried out in 2 Blocks namely Tamnar and Lailunga of Raigarh district, Chhattisgarh state, based on potentiality and production of tasar/mulberry cocoons, where both types of sericulture – mulberry and tasar are being practiced. Raigarh district is major tasar growing area where tribal are engaged in sericulture activity. Tasar silkworm rearing has been going on since 1956-57 and rearing of mulberry silkworm started in the year 1982-83. Tamnar and Lailunga are rural populous blocks. Initially the list of Seri cultural villages and the names of beneficiaries were obtained from local Sericulture department of above 2 Blocks, The primary data was collected from the sampled respondents following the personal interview method using structured interview schedule standardized by Nagaraja (1989). In the above mention blocks four villages were selected with 25 beneficiaries in each village at random for collection of data. Thus, 100 beneficiaries were selected from each block. The farmers were post classified into main and additional based on the engagement of employment. The information sought from the respondents/beneficiaries consisted of three types. The first type pertained to general information. The second type sought was related to Occupational Status, Employment days in a year, Total Monthly Income, Occupation before the Sericulture, Duration of Sericulture Work, Average Annual Income from the Old Occupation, Crops taken in a year, Cocoon produced in each crop, Profit from each crop. The third type of information pertained to the Losses in Sericulture, Compensation by Government, and Loan according to requirement, Traditional Business is affected or not, total labour period, Change in economic status, Change in Annual Income through Sericulture, Displacement by Sericulture, Impact of Sericulture in Life Style and economics of silk production. Primary and secondary data was analyzed using various statistical tools viz., mean, mode and median where the situation is the basis of vertically received.

M = (1/N) fx, where N= Number of observation
F= Frequency (collected data)
x= Variable (as per situation)

3. Result and Discussion

On the basis of study, the analysis pertaining to employment, income, occupation, risks factor and social impact, Domestic Expenditure, Type of live stocks, Cocoon production, Duration of rearing of silkworm, Basic preparation for sericulture, Occupation before sericulture, Displacement for sericulture, Suggestion for change.

3.1 Status of house

In Tamnar & Lailunga block analysis of the first type of information related that the Kachha houses are 99% for Tamnar block and 97% for Lailunga On the other hand Pakka house are 1% for Tamnar and 3% for Lailunga block. Regarding ownership of house in study area, 99% respondents have their own house in Lailunga block whereas in Tamnar block it covered 94% respondents.

3.2 Status of working member in family

It is observed that in Tamnar block that the number of working members in 62 families two, in 31 families three, in 3 families four and in 4 families' five members is working. whereas in Lailunga block the number of working members in 18 families is only one and the same way in 31 families two, in 38 families is three, in 10 families four and in 03 families five members are working. It is clear through the analysis that 3 members are involved in the occupation from the average families. It means there is a positive attitude of the members from each family. Sericulture was adopted as Secondary occupation by 98 beneficiaries from Tamnar and 82 from Lailunga block, rest respondents adopted it as primary occupation.

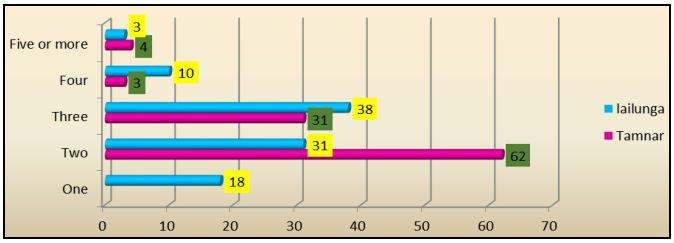

Fig 1: Status of working member in family

3.3 Employment Days from Sericulture

In Tamnar block 73 respondents received employment for 100-150 days and 25 received 151-200 days. 201-300 days' employment received by 1 and 301-365 days employment receiver's respondents are 1. In Lailunga 32 respondents received employment for 100-150 days and 65 received 151-200 days. 201-300 days' employment received by 3 and 301-365 days employment receiver's respondents are nil. The

employment site is situated their own village for all respondents of Lailunga block where they got employment from sericulture activity, whereas 89 from Tamnar block got employment from sericulture activity, site is situated their own village level.

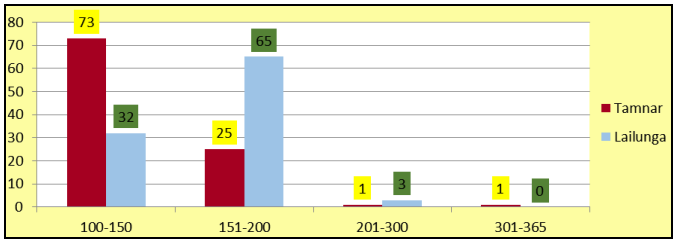

Fig 2: Employment Days (Man Days) from Sericulture

3.4 Income from Sericulture

The data indicate that total average monthly income in Tamnar is only Rs. 3540/- and in Lailunga Rs. 3840/- at their village itself. Whereas from the forest minor produce collection and disposal (once in a year) the average income of the respondents has been estimated for Tamnar Rs. 6550/-, and Lailunga It is Rs. 5950/-. The economic status in old occupation is normal for 88 and bad for 11 and very poor for 01 respondent of Tamnar block whereas it is measured as normal for 72 respondents, bad for 08 and very poor for 20 respondents of Lailunga block. The total monthly expenditure of the family from all sources are Rs. 2410/- for Respondents of Tamnar Block whereas it measures Rs. 2380/- for respondents of Lailunga block.

3.5 Cocoon Production and Profit

It is observed in the study area that 06 respondents from Tamnar and 15 from Lailunga take only one crop in a year while 87 from Tamnar and 12 respondents from Lailunga take two crops in a year. In Same manner 04 respondents from Tamnar block and 73 from Lailunga block take 3 crops in a year. Only 03 respondents from Tamnar block take five crops in a year. The numbers of cocoon produced are 7750/crop/beneficieries in Tamnar and in Lailunga it is 5900. The economic gain by the respondent of Tamnar is Rs.5760/- and in Lailunga it is Rs.5720/-. The yearly production of cocoons by the respondent of Tamnar block has been registered 19800 nos. and in Lailunga 18300 number. Average annual income estimated about Rs 18000/- for Tamnar and Rs 18200/- for respondents of Lailunga block.

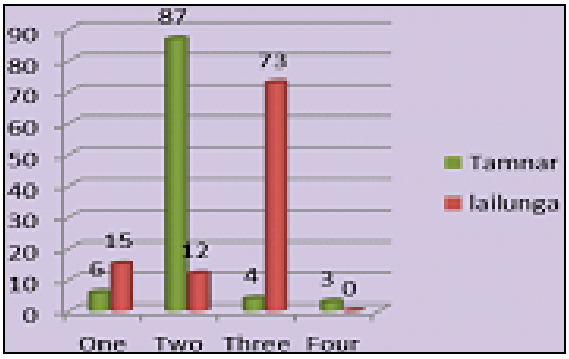

Fig 3: Cocoon Crop

3.6 Domestic expenditure

In the category of Liquor and Narcotics, 35 respondents from Tamnar block and 72 from Lailunga block consume there expenditure in liquor. On Tobacco maximum expenditure is incurred by the respondents of Tamnar block i.e. 83, followed by Lailunga block 69. Same as on Gudakhu 65 from Tamnar nar nd 67 respondents from Lailunga domestic expenditure has been incurred. In both the block no respondents incurred expenditure on Gaanja.

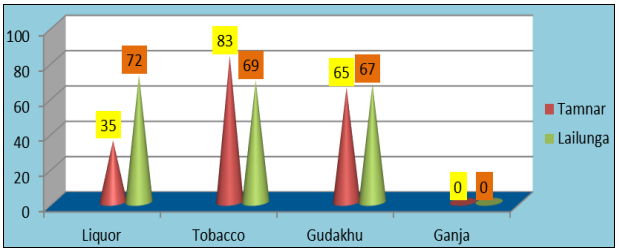

Fig 4: Domestic Expenditure

3.7 Types of livestock (Milching)

In the study area 25 respondents have cow in Tamnar block and 25 rspondents in Lailunga whereas 02 respondents have Buffalos in Tamnar and 05 respondent in Lailunga block, 06 respondents have shegoats in Tamnar and 32 respondents in Lailunga block, As a live stock engaged in household burden in Tamnar block, Ox- by 50 respondents and in Lailunga 88 respondents. In Tamnar block 13 respondents have poultry whereas in Lailunga block it covers 37 respondents.

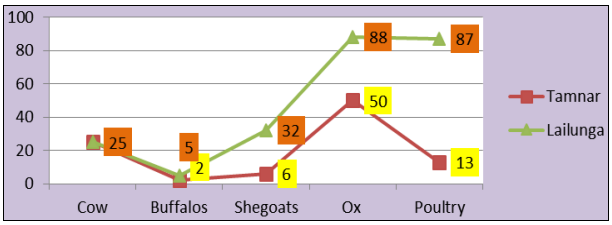

Fig 5: Types of Livestock (Milching)

3.8 Basic preparation for sericulture

It is observed in the study area that 90 respondents from Tamnar block and 85 respondents from Lailunga emphasized that they preferably do the Maintenance work on priority basis followed by collection of leaf by 25 respondents from Tamnar and 20 from Lailunga block. Preparation of hygienic conditions of rearing room by 45 respondents from Tamnar and 13 from Lailunga block. Arrangement of equipment 51 respondents from Tamnar and 04 respondents from Lailunga block, prefer the work for basic preparation.

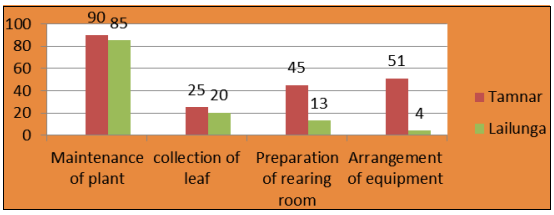

Fig 6: Basic preparation for Sericulture

3.9 Duration Year of rearing of silkworm

In the study area it comes under observation that 04 respondents from Tamnar block and 03 from Lailunga block, duration of rearing is only two years whereas 01 respondent from Tamnar and 03 from Lailunga block do that since three years. Again for four years work as silkworm rearing 36 respondents from Tamnar and 12 from Lailunga block covered. For 5 or more than five years it's counted as 59 respondents from Tamnar and 82 from Lailunga.

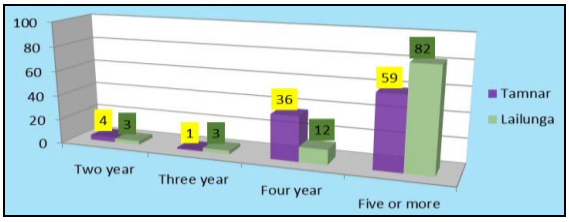

Fig 7: Duration year of rearing of silkworm

3.10 Occupation before adopting sericulture

Out of 200 respondents from study area, 62 from Tamnar and 58 from Lailunga block the main occupation before adoption of sericulture was Agriculture, whereas 26 respondents from Tamnar and 35 from Lailunga do as agriculture labour. Only 02 respondent from Tamnar block and 02 from Lailunga are busy with sericulture, in agriculture with sericulture work are done by 10 respondents from Tamnar block and 03 from Lailunga.

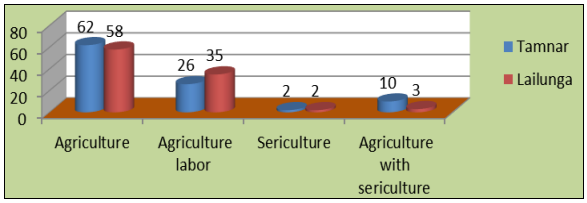

Fig 8: Occupation before adopting Sericulture

3.11 Movable and Immovable Property

It is observed in the study that in the status of movable property point of view the 72, 33 and 16 respondent from Tamnar block have livestock, Agriculture equipments and vehicles whereas in Lailunga block 66, 42 and 23 respondents have same property. In the mode of immovable property from the Tamnar block 45 respondent have cattle house, 39 have agricultural land, 68 have house and 01 have well or biogas plant. In Lailunga block the same manner 57, 68, 62 and 02 respondents have immovable property. The fixed assets earned from old occupation were estimated as Land and Building by 64 and 32 respondents from Tamnar block whereas it is 53 and 46 respondent from Lailunga block.

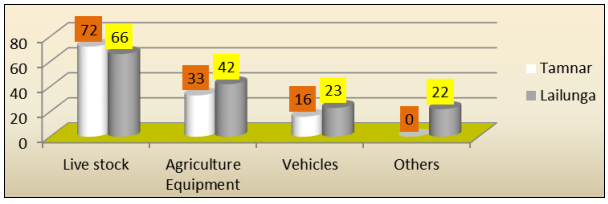

Fig 9: Status of Movable property

3.12 Disease of host plants

It is found in the study area that host plants are affected by Matamari disease replied by 76 respondents from Tamnar and 78 from Lailunga block. Plants are also affected by stem borer according to 92 respondents from Tamnar and 62 from Lailunga block. Disease like leaf spot says by 86 respondents from Tamnar and 54 from Lailunga block. Root rot infection by 09 respondents from Tamnar and 03 from Lailunga block.

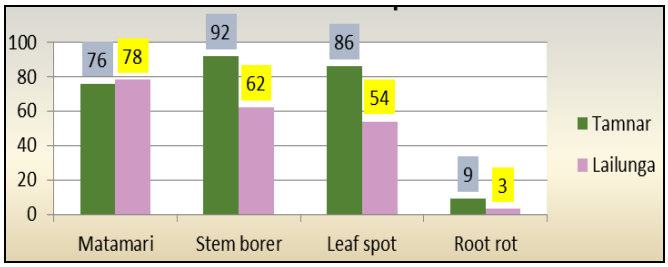

Fig 10: Disease of host plant

3.13 Main occupation related to sericulture

It is analysed in the study area that the main occupation related to sericulture are Rearing of Silkworm done by 78 respondents from Tamnar and 72 from Lailunga block. It is noted that the Agriculture is followed by 02 respondents from Tamnar and 12 from Lailunga block. Seed formation are do only by 04 respondents from Tamnar block and Rearing alongwith Field formation are done by 01 respondent from Tamnar and 07 respondents from Lailunga block.

3.14 Displacement for sericulture as livelihood

It is observed that in the both the block not any respondents have been displaced or migrated for livelihood. 01 respondent from Tamnar feel that sericulture has affected their traditional business/occupation. It is observed in study area that 08 respondents from Tamnar and 71 from Lailunga say that their ancestors are engaged with this work. Learning method of this work is Training for 22 respondents from Tamnar and 11 from Lailunga block, whereas it is just seeing for 78 respondents from Tamnar and 89 from Lailunga block.

3.15 Sericulture and Risk Factor

197 respondents had been bore a loss from Sericulture and only 03 respondents from both the block had not suffered. It indicates that the hardship and risk involved in it. Almost all attributed the loss to fluctuation of atmospheric and adverse weather conditions viz heavy rains-89 respondents from Tamnar and 88 from Lailunga block; high temperature- 83 respondents from Tamnar and 40 from Lailunga block, Storm- 75 respondents from Tamnar and only 08 from Lailunga block, Pollution- 45 respondents from Tamnar and only 06 from Lailunga block cause disease- 93 respondents from Tamnar and 89 from Lailunga block which leads to a complete failure of their crops. Out of 200 respondents only 05 respondents from Tamnar block get compensation from government. All respondents are accorded full cooperation by the officers of sericulture department. Only 33 respondents get loan from Tamnar and 05 from Lailunga block as per their requirement and 162 not get.

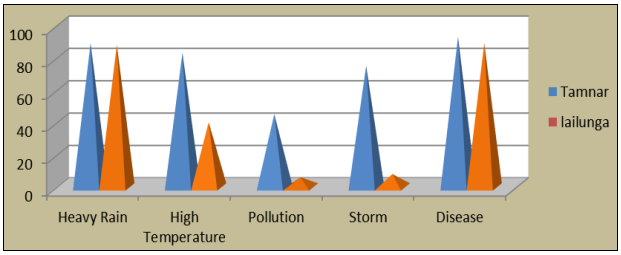

Fig 11: Sericulture and Risk Factor

3.16 Sericulture and Social Impact

It is observed that all the respondents attributed the following impact by Sericulture –Conservation of environment, No cutting and felling of trees, Interstate migration is checked, Local employment is generated. It served as additional income generating source, Regular savings habit has been developed, want to attach continue with the sericulture. It is suited to their lifestyle. The work is simple and can be done without any cost. Can serve better for the additional income generation and pave the way for the local employment generation. The total labour period has been estimated In Tamnar 8.09 hrs and in Lailunga.7.53 hrs. 97 respondents from Tamnar and all respondents from Lailunga block agreed that their economic status has changed. It has been estimated that the annual income rose up to an average of Rs 23650/- respondent of Tamnar and in Lailunga block Rs. 19800/-.

3.17 Suggestion for change

It is observed that 91 respondents from Tamnar block and 55 from Lailunga suggest for change in field work. 11 respondents from Tamnar and 25 from Lailunga block suggest for change in rearing. 09 respondents from Tamnar block and 45 from Lailunga suggest for change in training. 01 respondent from Tamnar block and 37 from Lailunga suggest for change in facilitation. Suggestion for change is also observed from the respondents of Tamnar block for Technical Assistance 07 respondents, for collection of cocoon 01 respondent and for Marketing 09 respondents. It is observed that 85 respondents from Tamnar block and 49 from Lailunga replied about the consultation with them before enforcing sericulture, whereas 15 from Tamnar and 51 from Lailunga opined that not consulting with them.

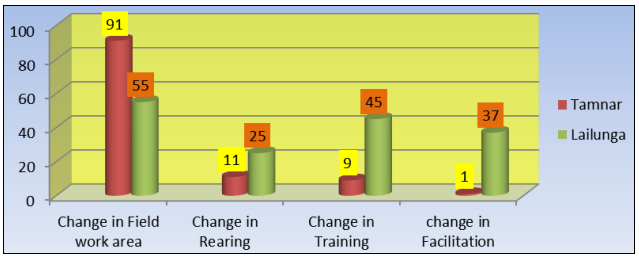

Fig 12: Suggestion for Change

4. Conclusion

Sericulture in India is a fairly organized activity in the cottage industry segment, largely rural based and labour intensive. Work participation of men and women was not similar in various sericulture operations and their decision making was not commensurate with their complete involvement. In sericulture, women were relegated to less skilled but laborious activities like weeding and disinfecting the equipments. It is found in the study area that Kachha houses are 99% for Tamnar and 97% for Lailunga. It is clear through the analysis that 3 members are involved in the occupation from the average families. In Tamnar block 73 respondents received employment for 100-150 days and in Lailunga 32 respondents received. The data indicate that total average monthly income in Tamnar is only Rs. 3540/- and in Lailunga Rs. 3840/- at their village level itself. The total monthly expenditure of the family from all sources are Rs. 2410/- for Respondents of Tamnar and Rs. 2380/- for Lailunga block. The numbers of cocoon produced are 7750/crop/beneficieries in Tamnar and in Lailunga it is 5900. Average annual income estimated about Rs 18000/- for Tamnar and Rs 18200/- for respondents of Lailunga block from sail of cocoon. 35 respondents from Tamnar block and 72 from Lailunga block consume there expenditure in liquor. In the study area 25-25 respondents have cow in both block as live stock. 90 respondents from Tamnar block and 85 respondents from Lailunga emphasized that they preferably do the Maintenance work. In the study area it comes under observation that duration of rearing in 5 or more than five years it's counted as 59 respondents from Tamnar and 82 from Lailunga. Out of 200 respondents from study area, 62 from Tamnar and 58 from Lailunga block the main occupation before adoption of sericulture was Agriculture. Host plants are affected by Matamari disease replied by 76 respondents from Tamnar and 78 from Lailunga block. Main occupations related to sericulture are Rearing of Silkworm done by 78 respondents from Tamnar and 72 from Lailunga block. It is analysed that 08 respondents from Tamnar and 71 from Lailunga say that their ancestors are engaged with this work. 197 respondents had been bore a loss from Sericulture and only 03 respondents from both the block had not suffered. All respondents are accorded full cooperation by the officers of sericulture department. It is observed that 91 respondents from Tamnar and 55 from Lailunga block suggest for change in field work. It is concluded that all the respondents attributed the following impact by Sericulture –Conservation of environment, No cutting and felling of trees, Interstate migration is checked, Local employment is generated. It served as additional income generating source, Regular savings habit has been developed, want to attach continue with the sericulture. It is suited to their lifestyle. The work is simple and can be done without any cost.

5. Suggestion

1. Research focus of women friendly technologies. Design market infrastructure to favour women's participation. Training cum study visits to women.
2. Convergence approach with forest, Rural Development, Women and Child Welfare, Industries, Tribal Welfare, Marketing, Finance, Insurance sectors, Energy Departments to bring in coordinated approach and action plans to maximize the benefits in favour of beneficiaries.
3. Externally aided projects integrating Water Shed Development, Agriculture Department (ATMA), Joint Forest Management, Waste Land Development, Tribal

Development, Vanya Silks Projects etc.,
4. Promote direct linkages between rearer, reeler, twister, and weaver.
5. Demonstrate appropriate technologies among the rural artisans.

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