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Case Study

SERICULTURE- A VIABLE OPTION FOR SUSTAINABLE LIVELIHOOD AND EMPLOYMENT GENERATION FOR RURAL POPULATION OF J & K

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ABSTRACT
The reduction of rural poverty continues to be a paramount goal of the developing countries like India. So far various strategies have been pursued to address this concern and rural employment creation is one of the initiatives towards this endeavor. Sericulture is the most appropriate avocation that has the potential for livelihood generation. It has emerged as one of the most important cash crops with minimum investment, low gestation period, high employment potential and highly remunerative returns. Sericulture has provided downstream employment and income generation in rural and semi-urban areas, high participation for low income and socially underprivileged groups. It is well suited to the agrarian economy of the tribals as well

KEY WORDS: Sericulture, Rural, Employment, Avocation, Income.

INTRODUCTION

In India, agriculture and agro-based industries play a vital role in the improvement of the rural economy. The Livelihood of the majority of the population of the Jammu & Kashmir state also revolves around the agriculture and allied sectors. These sectors constitute the mainstay of the state's economy and contribute nearly 50% to GSDP. Over 80% of the population of this state depends, directly or indirectly, on agriculture. But fact of the matter is that limited availability of land, limited cash returns and agriculture being confined to one or two seasons in the year have made villages to look for supporting rural industries such as Sericulture (Rai, 2006). Also agriculture in the hills and mountains of the state suffers from inherent constraints of remoteness and inaccessibility, marginality and fragility in terms of moisture stress and poor soil conditions and a short growing season. Hilly and inaccessible terrain in the state constrains the introduction of mechanized farming and hassle free transportation of inputs and products. Besides, being prone to soil erosion due to fragile soil, the hilly areas are also not amenable to multiple cropping, thus, impeding the uptake in the production and productivity in these areas. Under such circumstances mulberry sericulture has the potential to provide a source of sustainable livelihood to the poor and disadvantaged sections of the society.

The word "Sericulture" has been derived from the word "Su" (Si) which means silk. It is an agro based, labour intensive, export oriented and employment creating cottage industry (Shrivastav, 2005). Sericulture broadly comprises of activities such as host plant production, silkworm rearing to produce the silk cocoons, reeling the cocoons for unwinding the silk filament, yarn making, weaving and processing of fabric (Ahmed and Rajan, 2011). There are 10 million silkworm rearers and 0.5 million related industrial workers in the world (Dewangan, 2013). Asia is the top producer of silk in the world contributing 95% of the total global output. There are 58 countries on the world map of silk; bulk of it is produced in China and India, followed by Japan, Brazil and Korea (Nagaraju, 2008). Sericulture plays a very effective role in the utilization of the natural resources in a most effective manner for socio-economic upliftment with livelihood, employment and income generation (Malik *et al*., 2008). It is the potential sector of the agriculture to raise economic status of the farming community and also earning foreign revenue (Thapa and Shrestha, 1999). Sirajudeen (2011) in the study "Sericulture industry: An overview" revealed that sericulture is essentially a village based industry providing employment to a sizeable section of the population. Although sericulture is considered as a subsidiary occupation, technological innovation has made it possible to take it up on an intensive scale capable of generating adequate income. Anitha (2011) in the study "Status of Silk Industry in India" revealed that sericulture is ideally suited for improving the rural economy of the country, this sector has been identified as a sector of the Indian economy with strong potential to create jobs. Parimala (2009) in the study "Role of women in Sericulture" revealed that the role of women in sericulture is remarkable and it helps to eradicate the unemployment problem among the rural women. In developing countries like India, agriculture and agro based industries play a vital role in the improvement of rural economy. Rajeswari and Victoria Devi (2008) in their study "Multifaces of Sericulture: The cocooned Gem" explained that the sericulture is an agro based industry, involving different types of operation, sericulture acts an interface in transferring wealth from richer section to poorer sections of the society. Silk is consumed mostly by the affluent and the money so spend by them on purchase of silk is distributed among the sericulturists, reelers, weavers, and traders. Sarala, and Aravinda (2008) in the study "Problems and Prospectus of Sericulture in Shivamogga

District, Karnataka" explained Sericulture is one of the labour intensive cottage industries involving mulberry cultivation, silkworm rearing and egg production, reeling and weaving of the loom and other post cocoon processes like twisting, dyeing, painting, finishing, etc. along with the utilization of by products, offering a most promising alternative agricultural activity.

Nature has bestowed the state of Jammu and Kashmir with enormous potential for the growth and development of bivoltine sericulture in view of its salubrious climatic conditions. During the reigns of Maharajas this industry used to be the backbone of the state's economy and about 16 lakh kgs of cocoons were being produced annually. However with the passage of time, this industry started showing signs of decline resulting in low production and productivity of cocoons.

An Overview of present status of Sericulture in the state:

- Presently 30,894 silkworm rearers are practicing Sericulture in the state
- 2500 sericulture villages are actively involved in the profession of Sericulture
- Annual cocoon production has been reported to be around 1032 MT with an average productivity of 37Kg/Oz of silkworm seed.
- Annual income generation is 1908 lac.

Production Figures during the last few years

	Cocoon Production (MT)	Income Generation (Lac Rs.)	Average Price of cocoons/Kg	Productivity Per Oz (Kg)	Silkworm Rearers
2008-09	738	455.67	192.00	32.00	19700
2009-10	810	800.00	300.00	35.00	22800
2010-11	860	1100.00	410.00	35.00	25500
2011-12	917	963.00	350.00	37.00	27000
2012-13	901	1193.00	397.00	37.00	28000
2013-14	1022	2026.00	630.00	39.00	29390
2014-15	1032	1907.50	625.00	37.00	30894
2015-16	1032	2020.00	625	37.00	30894

(Source: (Farooq, M. 2016)

Main Constraints in Cocoon Production

- Shortage of mulberry leaves is the main hurdle towards achieving higher production in sericulture. Mostly farmers don't possess their own mulberry plantation and rely on unmaintained and unorganised mulberry trees on the road sides and bunds which is of inferior quality.
- Knowledge deficit among the farmers regarding the improved methods of silkworm. rearing and mulberry cultivation is another impeding factor.
- Shortage of rearing houses in general and chawkie rearing centres in particular.
- Poor extension support as most of the farmers lack basic training of rearing silkworms and are unaware about latest technologies.
- Silkworm rearing a part time occupation- only a single crop is raised when at least two rearings could be conveniently conducted.
- Irrational distribution of silkworm seed.
- Low returns from the primary produce.
- Inefficient cocoon markets.
- Lack of sound post cocoon sector.

Strategies to be pursued for attaining sustainability

A complete and comprehensive approach is needed so that all the critical issues are addressed simultaneously. A viable support system with technology intervention for each sector of sericulture has to be created and executed to meet the projected targets and transform sericulture and silk industry into a viable and sustainable enterprise.

1. **To enrich the mulberry wealth in the state by carrying out massive plantation drives:** Non-availability of quality mulberry leaf is a big hurdle in the progress of sericulture in our state. Therefore, silkworm rearers must be encouraged and supported to raise their own mulberry plantations by following the set production recommendations laid down for the purpose. Plants of popular mulberry cultivars have to be provided to the farmers free of cost along with the recommended production technology for raising these plants. This will ensure that farmers get quality mulberry leaf at their doorsteps and the rearers in general and women rearers in particular will not have to go to far off places to collect leaf for silkworm rearing.
2. **Strengthening the rearing Infrastructure:** The rearing infrastructure, space and appliances available with the farmers need to be upgraded especially for those rearing families who don't have adequate rearing space and accommodation. Tested low cost technologies like rearing huts, mountages and cocoon dryers need popularization amog the masses for sustainability.
3. **Transfer of Technology for silkworm rearing and cocoon production**: The farmers have to be trained with respect to improved methods of silkworm rearing. A proper support system and basic rearing infrastructure should be created among the target beneficiaries. The farmers need to be trained and demonstrated about the latest methods of silkworm rearing and consequently they will adopt the avocation of sericulture as an income augmenting and employment creating venture by selling their produce (cocoons). This will result in improvement in their socio-economic status by way of increased employment generation and better remuneration.
4. **Capacity building and enhancement of rearing skills of rearers and field functionaries through effective training programmes**. Regular training

programmes should form a regular feature of this programme. This will help the farmers to go for silkworm rearing and mulberry cultivation as per the scientific protocol, besides creating awareness among the cross sections of the society about the income augmenting and employment generating potential of sericulture. Awareness programmes and organization of kissan melas etc and special training programmes should be conducted to maximize the participation of women in these programmes for improving their status. Awareness programmes in schools and colleges of these remote and far-flung areas will help to acquaint the students and unemployed youth and school dropouts regarding the employment generating potential of Sericulture.

5. **Women participation in sericultural activities**: Women participation in sericulture is generally equal or even more than men. They take part in mulberry cultivation, silkworm rearing, seed production, silk reeling, weaving and marketing besides attending their multifarious family responsibilities. It has been estimated that 29 to 30 percent of work involved in mulberry cultivation like planting, manuring, weeding, hoeing, leaf plucking, storage etc is done by women (Anitha and Kanimouzhi, 2013). Owing to their patience, delicacy, hardwork, sincerity and interest in the welfare of the community, women edge out men in various rearing operations like chopping, feeding, bed cleaning, cooking, mounting, maintenance of hygrothermic conditions etc. While men remain busy with other agricultural activities, women take full care of this indoor activity. Efforts have to be made to maximize the participation of women in various sericultural operations. Regular training should be provided to the women in respect of all the above operations of mulberry cultivation and silkworm rearing so that they become technically sound and trained.
6. **Sound post cocoon Sector:** Improved cocoon drying and reeling equipments has to be installed in private sector. A comprehensive package for post cocoon sector need to be evolved.
7. **Introduction of Sericulture in unrepresented areas:** Under the changing global climate scenario expansion of mulberry sericulture to the new and unexplored rural and border areas assumes a greater significance as it would prove to be a source of sustainable livelihood for the poor and disadvantaged inhabitants. Since the scope of growing other horticultural and agricultural crops in these areas is limited and the roads also remain closed for more than six months in view of heavy snowfall and other climatic vagaries, sericulture alone has the scope to improve the livelihood security and socio-economic status of the people living in these areas. Besides the frequent border area disturbances in these areas does not allow the farmers to venture out in the open fields for longer durations. Sericulture has very less gestation period and being mostly indoor activity can be taken up easily there.
8. **Intercropping of various crops with mulberry:** Intercropping of various legumes and cruciferous plants with mulberry not only helps in increasing the productivity of these crops without affecting the quality and quantity of mulberry leaf yield but also helps in enriching the soil by fixing nitrogen as well as attract bees for collecting nectar which in turn provided natures highly nutritious food, the honey, having immense uses and above all helps in increasing the production of various crops through cross pollination.
9. **Inclusion of Sericulture in the self employment schemes of Government:** Inclusion of sericulture in the self employment schemes of Government like MGNREGA etc is going to help in creating job opportunities for the unemployed youth thus ensuring their economic stability and prosperity.
10. **Sericulture as a component in integrated Farming:** Use of seri-wastes as a source of protein for animal feed can help in fetching good returns to the farmer. Mulberry silkworm pupae, one of the major byproducts of silk industry have been used as a feed for poultry and trout fish with highly satisfactory results. Usually this is considered as a waste in silk reeling units and silk producers after reeling out silk used to throw the dead pupae at the out skirts of their reeling units, creating nuisance and health hazards. By utilizing these pupae as a feed for poultry and fish, the farmer can surely augment his income from this approach of integrated farming.

CONCLUSION

Sericulture occupies a place of pride in the rural economy by being only cash crop that guarantees attractive returns in a short period of time. It has an important place in the economy of Jammu and Kashmir and more than 30000 families are drawing their sustenance through this avocation. However like other industries sericulture too has been languishing owing to multifarious reasons. With large number of village population in the hilly and farflung areas deriving the greater part of their income from small and cottage industries like sericulture and not having other identified areas to absorb and employ huge chunk of population in the state, faster growth in sericulture is necessary to provide the boost to their incomes. By following the above strategies, the income from sericulture is surely going to increase which in turn will help address the rural-urban imbalance. Besides, the above approach will help to expand sericulture to the remote and far-flung border areas where the scope of growing other agricultural and horticultural crops is least in view of hilly terrain and climatic constraints. Besides the frequent border area disturbances in these areas does not allow the farmers to venture out in the open fields for longer durations. Sericulture has very less gestation period and being mostly indoor activity can, therefore, help in the sustenance of disadvantaged sections of the society while improving their socio-economic status by way of increased employment generation, better remuneration and women empowerment besides enriching the environment for peace and prosperity of the country.

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