

# Market Potential of *Muga* Industry with special reference to Sualkuchi

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## Abstract

India is the only country of the world which produces all varieties of silk i.e. Mulberry, Tasar, Eri and Muga. Out of these varieties, Muga, also known as golden silk is the exclusive product of Assam. The climate of Assam is conducive for Muga culture and it is an important agro based industry of the state. But due to various reasons this agro industry has lost its glory. Though traditionally Muga is reared all over the state, the role of Muga industry is not up to the mark to uplift the rural economy of Assam. Rather the production of Muga cocoon has been diminishing since years. As a result number of people earlier engaged with Muga rearing, weaving has also been decreased. However the demand for Muga yarn and fabric is still very high. Unscrupulous producer has lured people by using artificial or other wild silk as Muga to cater the demand. Muga fabric can be used in different diversified product also. With this background, we have proposed a study with the theme “Take- Off of Muga Industry: Steps Needed to Turn Fantasy into Fact” to see the prospect of Muga culture. In this paper we will study the causes of inefficiency of Muga industry and the steps needed to overcome the problems, would be discussed thoroughly. Role of different Government institutions and other stake holder of this unique agro industry also would be highlighted. The study is based on both primary and secondary resources. Primary data are collected in the special places where Muga rearing takes place and these data later on are blended with various reports, publication, books etc to get the results.



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## 1.I Introduction:

Sericulture is an agro-based industry. It involves rearing of silkworms for the production of raw silk, which is the yarn obtained out of cocoons spun by certain species of insects. The major activities of sericulture comprises of food-plant cultivation to feed the silkworms which spin silk cocoons and reeling the cocoons for unwinding the silk filament for value added benefits such as processing and weaving. Silk, the glorious gift of nature is an inimitable natural fiber synonymous with splendor, sibilant with luster and spectacular in vision. Ever since its discovery in 2500B.C, silk is surrounded by mystery and has had an adventurous course of evolution. At the end of the journey traversing through the intricate “Silk route” for the past 4000 years, silk stands proudly today braving well the onslaught from the mighty art-silk sector, keeping high the flag of naturalism and proclaiming herself to be the queen of textiles.(Koshy:2011). Silk was known and produced in India from pre-vedic times. India was on the fabled silk route, which stretched 6000 miles across the heartland of Asia from China to the Mediterranean. Indian caravans laden with luxury goods like spices and indigo traded for silk from China. India continues to be the second largest producer of silk in the World. India has the unique distinction of being the only country producing all four kinds of silk – Mulberry, Eri, Muga and Tasar. Sericulture is an important labour-intensive and agro-based cottage industry, providing gainful occupation to around 7.25 million persons in rural and semi-urban areas in India.

Raw silk is of two kinds, viz., mulberry and non-mulberry. The distinction arises from the rearing of silk worms either upon mulberry leaves or on other plants. Mulberry silk is produced mainly in Karnataka, West Bengal, Jammu & Kashmir, Tamil Nadu and Andhra Pradesh although some other states

have made some progress in this direction under their development plans. *Vanya* (Non-mulberry) silk comprising Tasar, Eri and Muga are produced in Jharkhand, Chattishgarh, Madhya Pradesh, Orissa, Bihar, West Bengal, Assam, Meghalaya, Manipur and Nagaland. The different types of *Vanya* silk are further defined as follows:

**Tasar Silk** – It is silk reeled from cocoons of silkworms belonging to saturniidae family, which are fed on leaves of Oak, Asan and Arjuna trees. Tasar silk is mainly produced in Jharkhand, Bihar, Chhattisgarh, Madhya Pradesh, Orissa and West Bengal & Andhra Pradesh.

**Eri Silk** – It is spun from cocoons of silkworms belonging to saturniidae family, which are fed on castor leaves. Eri yarn is produced in Assam, Bihar, Manipur, Meghalaya, Nagaland and West Bengal. Unlike other kind of silk, this cannot be reeled and hence it is only spun. It has natural copperish colour.

**Muga Silk** - This silk is produced only in Assam from cocoons of silk worms belonging to saturniidae family, which are fed on Som and Soalu leaves. It has a rich golden colour.

India is the second largest producer of silk in the world next to China, with a 15 percent share in the global raw silk production. During 2012-13 India produced around 23679 MT of silk and major contribution is from mulberry silk. As our study is confined to Muga silk we would focus only on the Muga production of the country. Muga production is geographically isolated to a single pocket of the world, i.e., Northeast India especially in Assam. The golden silk, Muga culture is practiced traditionally in the Brahmaputra valley of Assam. (Singh et al.: 2013). Assam alone produces around 99 percent of raw Muga. In Arunachal Pradesh also Muga culture has been newly introduced. Meghalaya is a good source of basic seed cocoons especially from areas bordering Assam. Other states like Mizoram, Manipur and Tripura also have introduced Muga culture. It is estimated 11037 ha of existing Muga plantation is available in NER of which 9300 ha are in Assam. About 30,000 families are directly or indirectly engaged in Muga culture and can be treated as agro-based small-scale industry of northeast India. The present situation of Muga culture has been shown in the Table-1. Muga silk production over the years has been fluctuating due to several inherent problems associated with the culture and non availability of the required quantity of quality seeds during the commercial rearing seasons. The Central Silk Board(CSB), the state government and the North Eastern Council(NEC) are trying hard to sustain and develop this heritage by improving the host plants, building the seed organizations, setting up co-operatives and providing marketing facilities. Unfortunately the condition of Muga culture is not picking up much though efforts were taken. Considering the geographical advantage and involvement of the people in the rural areas of Assam, Muga culture has the highest potential to solve the problem of poverty and disguised unemployment in the region. For that we have done a study to analyze the causes of low production of Muga though naturally the region has the absolute advantage in the Muga cultivation. However the main objective of the study is to find out the solution of the problems and to prescribe the necessary steps to overcome the obstacles.

### 1.II Data Source and Methodology:

The study is based on both primary and secondary sources. For primary data, extensive field survey with proper questionnaire, personal interviews are carried out in places known for Muga culture. The secondary data are mainly collected from different government organization. Central Silk Board, Guwahati, Regional Muga Research Station, Boko, Directorate of Sericulture, Assam etc are visited to collect reports published by them time to time. Reports of various publication, journals and periodicals including related books are blended with the primary information to analyze the accurate scenario of Muga culture and problems. Efforts were made to make the study comprehensive and accurate. The study is delimited to Muga sector only.

Table1: Muga Silk Production in NER & Assam

YEAR	MUGA SILK (MT)	ASSAM'S SHARE(MT)
2001-02	100	93
2002-03	102	96
2003-04	105	99
2004-05	110	104
2005-06	110	104

2006-07	115	107
2007-08	117	105
2008-09	119	105
2009-10	105	93
2010-11	124	117
2011-12	126	118
<b>CAGR</b>	<b>2.12%</b>	<b>2.19%</b>

Source: Various Issues of Sericulture & Silk Industry Statistics, CSB

## II. The Take-off Stage:

In the plan period, both the Central and State government have given importance to enhance the economic condition of rural areas. Being an agro based economy, the poverty of masses can't be erased without given due attention to the agriculture in India. Sericulture, on the other hand entails various quality for upliftment of rural society. It is estimated that almost 72 lakhs persons are engaged in various sericulture activities in the country and sericulture can generate employment at the rate of 11 man days per kg of raw silk production (in on-farm and off-farm activities) throughout the year. This potential is par-excellence and no other industry generates this kind of employment, especially in rural areas, hence, sericulture is used as a tool for rural reconstruction. Mulberry cultivation and rearing cocoons also provide high returns with a low gestation period. By adopting stipulated package of practices, a farmer can attain net income levels up to rupees thirty thousand per acre per annum. Sericulture can be practiced even with very low land holding. Acre of mulberry garden and silkworm rearing can support a family of three without hiring labour. So it is ideal for weaker sections of the society. It addresses the equity concern of the society too. Because of so many advantages, planners always have given focused importance in the sericulture sector.

In the plan period, Central Silk Board, a statutory body constituted in 1948 for the development of sericulture and silk industry in the country has taken various schemes to increase the raw silk production of the country. In the year 1989, CSB in its National Sericulture Project, two districts of Assam namely Jorhat and Sibgarh were also included for the development of non-mulberry sericulture. In the Eight five year plan, CSB has taken "Other Development Programme" (ODP) in the non-mulberry sector. It includes steps like setting up of Muga Silkworm seed Production Centre in the state, implementing Augmentation of Muga food Plant Scheme, Product Development and Diversification Scheme etc. Some specialized organization is also set up in the region for the development of sericulture. Central Muga Eri Research & Training Institute is a R&D institute in the field of Muga and Eri culture. It is under the control of Central Silk Board, Ministry of Textiles, Govt. of India. The institute has the responsibility of R&D activities to cater the needs of the on-farm and post-cocoon sector of Muga and Eri sericulture of NER. Project Golden Thread, an initiative of Ministry of Textile, Govt of India is also carried out for the BPL category of Muga rearer in the Kamrup, Goalpara, Lakhimpur and Dhemaji district of Assam where traditional Muga rearing is still in vogue. With a view to provide research and development support to the industry, the CSB established the Regional Muga Research Station at Boko in 1981. The station has now three another extension office located in Upper Assam, Coach Behar and Tura. The station has so far developed improved technologies in the fields of Muga host plants management, silkworm rearing and seed technology, pest management and host cocoon technology. CSB has also been collaborating with both international and national agencies and universities involved in sericulture research etc, to harness their technical expertise in highly specialized fields and also pool resources for the development of new technologies in frontier areas of sericulture research. Because of these R& D work leaf productivity of Muga food plant has increased from 10 to 11 kg per plant per year and cocoon productivity has increased from 40 to 60 cocoons per dfls( Singh et al,: 2013). Out of various scheme Catalytic Development Programme (CDP) is the flagship scheme of the Central Silk Board (CSB), Ministry of Textiles for sustaining all round development of sericulture and silk industry in the country, and has been an important tool for effective transfer and adoption of improved technology packages developed by the research institutes of CSB at the field level through five year plans. The CDP programme has also been widely implemented in Assam. During XII Plan, the CDP has been redesigned to meet the sectoral requirements and to ensure that the sector grows at a healthy pace. In order to boost the textile sector in the NE region, the

Govt of India has approved a project- based strategy for the NER under an umbrella scheme by name “North East Region Textile Promotion Scheme”. This umbrella scheme will be implemented in the North East Region in addition to the regular schemes of the Ministry. The broad objective of the North East Textile Promotion Scheme is to develop and modernize the textile sector in the North East Region by providing the required Government support in terms of raw material, seed banks, machinery, common facility centers, skill development, design and marketing support etc. The specific objectives of the scheme include increase in the value of textile production, technology up gradation, improvement in design capability, diversification of product lines and value addition, better access to domestic and export markets, cauterization and improvement in labour productivity, market access and market promotion.

Apart from Central agencies, state government has also taken various initiatives to increase Muga cocoon production in Assam. Various training programmes are imparted time to time to the seed grower, cocoon rearer and reeler to enhance Muga production in the state. Involvements of NGO, SHGs are stressed in the process to strengthen co operative movement in the root level of rural society under different programme taken by the Sericulture Department of the state. Under social forestry and initiation of Sericulture Department of Assam , initiative was taken to plant Muga silkworm host plant for more production of Muga silk and upliftment of the local rearers. In Assam there are 67 VGRs with total area covering 1440 ha and plantation area covers 1069 ha of Som and Soalu plants. The VGRs are maintained by the *Panchayats* and allotted the land to rearers on rotation basis to do the Muga silkworm rearing. State Government had also set up a training institute in Titabor, Jorhat for R & D of sericulture sector. Linking MNREGA with Catalytic Development Programme of CSB has also given impetus to the rearer to stick to their traditional occupation with a guaranteed minimum earning. But comparing to the initiative the growth rate of the Muga cocoon and raw Muga silk are still very low. The Table -1 shows that in the last eleven years the compound annual growth rate (CAGR) is only 2.19 percent in Assam and in NER the CAGR is only 2.12 percent. There is a huge gap between the demand and supply of Muga silk in the market and it has taken toll in the purity of the golden fabric. Filling the gap with the non- Muga fiber in the traditional dress material has become a common feature in the state. It has duped the naive consumer as well as deteriorated the reputation of our heritage product.

### III. Problems of Muga Culture:

Northeast region of India is naturally an ideal place for Muga culture. It has climatic advantage over rest of the world in the production. Muga has vast demand both in the national and international market due to its unique quality. It is the second costliest fabric in the world after *Pashmina*. However though much initiative have been taken to strengthen this money-spinning industry, outcome is not satisfactory at all. Being a very laborious work, migration of traditional rearer to other job is a major hindrance at this point of time. In fact the present climatic condition is also not very suitable for Muga culture. Along with these other factors have also created bottleneck to the expansion of this age old cultivation. In our study we have found following factors are responsible for the shrinkage of raw Muga silk production.

1. Diseases: *Vanya* (wild) silk are always exposed to outdoor. Due to its outdoor nature of rearing, Muga silkworms are exposed to various environments and thus prone to number of diseases, pests and predators. The concerned silkworm is susceptible to different protozon, bacterial, viral and fungal diseases. Apart from that Muga culture is a risky operation and the rearing process is done in the open air. Various natural enemies attack the egg, larva and pupa and it badly hampers the effectiveness of rearing. These have reduced the productivity of the farming.

2. Illiteracy: In the study it is revealed that most of the rearers are either not equipped with modern knowledge of harvesting or reluctant to implement the knowledge in the farming process because of the lack of motivation. Scientific knowledge of Muga rearing, pre-cocoon& pos-cocoon harvesting management, pest control method, commercial rearing of silkworm are very imperative for success of the culture. Unfortunately our Muga rearer, reeler are deprived of latest scientific knowledge. It often led them to the losses.

3. **Social Attitude:** If society do not add value to the work no entrant of Next generation come forward to be associated with a laborious work like Muga cocoon rearing. Like other cottage based industry, Muga related work has also met the same treatment from the new generation. Traditional silkworm rearer has shifted their business to other field as there is non availability of laborer in the area. Though few of them are doing the traditional harvesting with hired labour, high cost of production compelled them to gradually shifting to other field.

4. **Non availability of seeds:** It is very ironical that though both the Central and State government agencies have taken various measures to improve the Muga sector, availability of quality oriented and healthy seeds are still very low. Depriving of Muga rearer with quality seeds at proper time has demotivated Muga rearer in recent time. Exorbitant price of the seed has also cause a major hindrance to the prospective farmer.

5. **Financial constraint:** In the recent time it has been noticed that those people who are still engaging in Muga culture are getting good price from the output but at the same time the cost of production has also shoot up accordingly. This phenomenon necessitated high investment in the pre rearing period. Our rearer are often deprived of necessary capital and formal source of capital is not as much handy as it seems to be. It has automatically sidelined some interested and knowledgeable farmer from the silkworm rearing process. Though Government has taken various schemes to assist the needy farmer, they have failed to attract the needy people because of the intricacies of credit advancement process.

6. **Faulty marketing process:** Lack of organized market of Muga cocoon and yarn has also acted as hindrance to the growth of the much envisaged field. Though traditionally cocoon and yarn market are characterized with middleman there was less exploitation of actual farmer by the middleman. Practical difficulties of Muga rearer, reeler to directly trading with the fabric producer has created some natural space for exploitation in the value addition procedure. Though different agencies both at govt. and private field are working to minimize the intensity of exploitation, it has not been stopped so far.

7. **Lack of Robustness:** In the field survey, we have noticed that though there are so many agencies working with the different stake holder of Muga culture, there are much scope to enhance the entrepreneurial ability or attitude among the concerned people. Though it is widely known fact that Muga silk can yield lots of income to all people involving in the process, lack of motivation failed to enthral them to put more effort to the business. In fact we have seen that trainer who got training in the silkworm rearing, reeling, and harvest management etc lack vision.

From these explanations we can come to the conclusion that basic problems associated in the agricultural production of the country are also attached with the traditional Muga culture of Assam. This traditional farming has lost its ground because of the uncertainty involved in the farming as well as problem of capital, technology, market etc. So to improve the situation and for upliftment of the industry much steps need to be taken. The initiative so far taken by the respective Govt. has failed to bring momentum in the Muga silk sector. Different policies and initiatives are the need of the time to improve the present status.

#### **IV. Suggestion for remedy:**

As has been stated earlier, rearing cocoons, reeling, spinning of Muga yarn and weaving Muga cloth are integral part of Assam's culture. Number of village people involved in the whole process has clearly shows the importance of the Muga culture in the state. However several problems of the agro based industry have reduced the prospective earning competence. Few decades ago though the state had been produced surplus Muga silk, the situation has turned into worse with burgeoning obstructions. Some obstructions are of economic and some are of non economic in nature. Removing these obstructions is the call of the day to bring the industry in the right track. Every initiative to expand the industry may become futile until basic problems are rooted out completely. No doubt steps already taken in this regard have saved the age old tradition to become extinct, much arrangement still in need for complete revival of the sector. In the following, some suggestions are forwarded for the betterment of the Muga silk sector.

i) Silkworm rearing and related work are very labour intensive. In the present days even villages are also having nuclear family with less number of family members. In this situation rearing and other works needs to be done in co operative basis. It has been noticed that Muga rearing doing at community participation basis has become more successful than individual rearer. In fact channelizing the required capital is also smooth in co operative pattern than the individual front. But unfortunately due to the failure of so called co operative movement actual farmer are reluctant to come forward for collective participation. So the Government through its *Panchayat* should take initiative to participate people in collective manner to overcome the intricacies of rearing, reeling, spinning and weaving of Muga.

ii) To attract new blood into the Muga culture Progressive Farmers' body has to be constituted and flow of knowledge from this body to be done in such a way that mechanized training does not take place in any point of time. Though training for proper way of procedure of rearing, reeling, weaving should be imparted; those training must be carried out locally for its success. Formation of progressive farmer body will be more beneficial in the locality for transformation of traditional knowledge from one generation to another. It would add value to the knowledgeable person as well as social acclamation could be achieved.

iii) The way the demand of Muga fabric has been increasing in both domestic and international market, it would not be exaggerated to mention that our rural poverty can be totally eradicated if raw silk production of the state improves. We are lucky enough to have the production expertise both in Muga yarn and fabric production. Adding little knowledge of product diversification and commercialization of business can turn the whole scenario into a blooming one. Unfortunately even state government has also failed to grab the pending opportunity. Lack of foresight prevented the bureaucrats to formulate policies that attract village community to come forward for Muga cultivation. So there is much scope for NGOs and other voluntary organization to aware people about the importance of Muga culture in present situation. To realize the money spinning capacity of Muga culture even school curriculum can also be used as a tool of information.

iv) To solve the problem of financial constraint both State and central government come forward with schemes that serve needy one. It has been seen that to get credit a farmer still need to mortgage immovable property which is a major hindrance of poor farmer to comply. Advancing working capital at cheap interest rate without any mortgage must be facilitated with fewer formalities. It has also been noticed that as silkworm seedling, rearing are very season sensitive, bankers should also be prompt to advance loan before hand. In fact crop insurance facility also be incorporated along with to save the farmer from uncertainties.

v) For enhancement of production of cocoon and Muga yarn, a project laying emphasis on SWOT analysis must be carried out as soon as possible. Being the only region of the world to have absolute production advantage of one of most precious fabric of world, had given enough reason to cover up the textile market. But in reality, our producers are deprived of the necessary help to save their crop. It signifies that enormous project, schemes of the plan period are yet to give fruitful results. SWOT analysis of the project will help us to sort out what to be done or what need to be rectified in the new market scenario.

vi) Clearing the bottleneck of market in seed, cocoon and yarn are another task which needs urgent attention. Till these markets are filled with middleman/ unscrupulous broker, actual profit cannot flow to the hand of real laborer. Though the state has few cocoon bank, they are not either sufficient to cater the demand or in the state of dysfunctional. So operative cocoon bank in the production center must be made functional. Apart from that a cocoon and a yarn auction market in the line of Ram Nagaram Auction market, Bangalore (largest auction market for mulberry cocoon of world) should be operational. Auctioning of cocoon and yarn would help the grower, reeler, spinner to get proper price of their hard work. It would also help to eliminate the middlemen in the all form of Muga market.

vii) Without penetration of technology no industry can thrive in the modern world. Technological upgradation through R& D is an integral part of any flourishing industry. In Muga culture also, much research need to be done in seedling, disease control, pest control, post cocoon management, spinning process weaving etc. Though CSB is playing a vital role, respective state of NER can contribute a lot for proper implementation of projects. Scientist, researcher can come forward in this regard. In fact Govt. should take proper measure to attract these people to the R&D field. Some issues can easily be solved locally than the hiring HR from outside. In that case new research institute with modern facilities in remote areas of the reason is highly needed.

viii) In the recent past, construction of cluster for development of agro based industry has proved its effectiveness. Though various scheme specific cluster has been formed time to time to achieve something specific in the state, still the Muga sector lacks well balanced self-reliant cluster to face the competitive world. Cluster area consisting scientist to help a grower, a technician to help artisan, a designer to help fabric producer to diversify product, a researcher to do product/market analysis a promoter to promote business inside and outside the country can do a lot in the Muga market. This kind of cluster can address various issues at a time which is otherwise impossible. So Govt. should take necessary step to formulate such structure to increase the competitiveness of the sericulture sector.

ix) Social attitude to attract future generation for various activities of Muga culture is very instrumental. For that awareness camp to inform people about the benefits of Muga rearing, spinning in the Muga culture hamlet of the state must be hold time to time. Electronic media is a effective medium for dissemination of information at present time. Government can strengthen the Muga revolution by proper utilization of this mode.

## **V. Conclusion:**

Village economy of NER and more particularly of Assam can get tremendous help both in terms of employment and income from the sericulture activity. Muga culture along with ericulture has immense scope in the region. Since time immemorial exporting of silk has been done from this region to cater the need of the people. In fact though other cottage industry is facing hardship to survive among the big players Muga silk of Assam has curved a niche itself in the competitive globalised market. Of course, other cheap material having resemblance with Muga fabric has taken place of Muga but the unique characteristics of durability would never allow other material to sweep the place of Muga silk. Implementation of above suggestions can help the stake holder of Muga culture to overcome the problems in a realistic way. For that revision of ongoing schemes, rectification of some strategies needs to be done. A synchronized model of development of Muga culture is the need of the time and formulating and implementing that model is the main task to save the cultural heritage of the state,

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