



Muga silk in Sualkuchi revenue village: the pride of Assam under threat

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Abstract

Muga Silk, originating from Assam on Northeastern India, a textile of incomparable beauty and cultural significance in the state. This Muga golden Fiber Muga silk is produced in the North east of India for 90% of the world's production. There is no exact account of the origin of this Muga silk in the North east. The industry grows in Assam during the rule of the Ahom's in the 12th century AD and became part of the economic lifestyle of our society. This period of prosperity of Muga silk of the Ahom's is called the golden age. This rich Muga silk declined greatly under the British however, the demand for it now days has made this silk of greatest importance due to the textile of the artifice of the North east. In case of Assam the Muga Silk industry is one of the vital economic part and pride. In Assam few regions are rich in terms of Muga and Silk industry namely Sualkuchi in Kamrup district, Dhemaji etc. But due to various socio-economic problems the industry is under threat. In this paper an attempt has been made to find out the present status of the industry along with constraints.

Keywords: Silk, Muga, Silkworm, Sericulture, Eri Muga

1. Introduction

Assam is the gateway of North-East India situated in the foothills of the Himalayas and on the banks of the mighty Brahmaputra. Assam is also renowned for its wild silk production along with the quintessential tea garden. Muga silk, often referred to as the 'Golden Fiber' holds a special place in the cultural heritage and economic landscape of Assam (Goswami, 2014). Muga silk is considered as one of the finest varieties of silk in the world.

Silk is a natural fiber protein composed of fibroin that can be woven into textiles. This fibroin protein component is produced by silkworm larvae to form cocoons. The best-known silk is obtained from the cocoons of the mulberry silkworm *Bombyx mori* larvae by sericulture (Ganga and Chetty 2013).

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Muga is one of the rarest silks in the world. Due to its golden nature it has now come to be known as the golden silk of Assam. The silkworms are very delicate and cannot withstand the minimum pollution level, thus making it very rare. The silk fiber is a very strong organic natural fiber and is derived from semi cultivated silkworms named *Antheraea Assamenis*.

Muga silk is widely popular for its unique yellowish color, which is a significant feature of the traditional Assamese attire. These sarees are highly sought after for their natural sheen and exquisite beauty. Moreover, Muga silk is considered a symbol of the Assamese culture heritage and tradition, making it a source of immense pride for the people of Assam.

The process of producing Muga silk is a labor-intensive one and involves several steps, starting with rearing the silkworms on the leaves of the Som tree, which is also known as the Muga tree. Once the silkworms spin their cocoons, these are carefully harvested, and the silk threads are extracted. These threads are then spun into yarn and woven into stunning Muga silk fabric.

The production of Muga silk has been a part of Assamese culture for centuries, and it is deeply intertwined with the state's most important festival, Bihu, a harvest festival celebrated three times a year in January, April, and October- and is one of the most important cultural events in Assam (Das and Kumar, 2014).

1.1 Objectives

In order to follow the investigation, the following objectives are taken in to consideration:

1. To study about the processes of making of Muga silk.
2. To study about muga silk industry in Sualkuchi village.
3. To identify the economic importance of the Muga silk industry.
4. To identify the problems muga silk industry.

1.2 Study Area

Sualkuchi is a small town located in the kamrup district of the Indian state of Assam. It is known as the "Manchester of Assam" or "silk town". Sualkuchi located 26 °10'5''N and 91°34'15''E. Sualkuchi renowned for its traditional silk weaving industry and cultural heritage.

In the context of silk industry in Assam, Sualkuchi is the name that stands apart. In 4th century BC, on the basis of Kautilya's reference to Suvarnakudya of ancient kamrupa the best quality of Patrona (pat) was produced. This suvarnakudya of Arthasastra was probably known later on as Swarnakuchi. At Agiathuri the river takes a bend and again straightens toward Hatimura and the name Sualkuchi is guessed to be derived from Swarnakuchi which in turn might have been derived from suvarnakudya mentioned by Kautilya.

The village Sualkuchi on the north bank of the Brahmaputra river approximately 35 kms from Guwahati the largest city of Assam. It is block of kamrup district with a population around 13,898 as per 2011 census.

As per the census 2011, the literacy rate of Sualkuchi is 93%. Thus, Sualkuchi has higher rate compared to 75.5% of kamrup district. The male literacy rate is 96.71% and the female literacy rate is 89.43% in Sualkuchi.

The sex ratio of Sualkuchi is 1,041. Thus, per every 1000 men there were 1041 females in Sualkuchi as per 2011 census.

In Sualkuchi town out of total population 7230 were engaged in work activities 73.3% workers describe their work as main work while 26.7% were involved in marginal activity providing livelihood for less than 6 months. 7,230 workers engaged in main work, 15 were cultivators while 59 were agricultural labourer. By that way nowadays all the Sualkuchi villagers have taken up as a source of income.

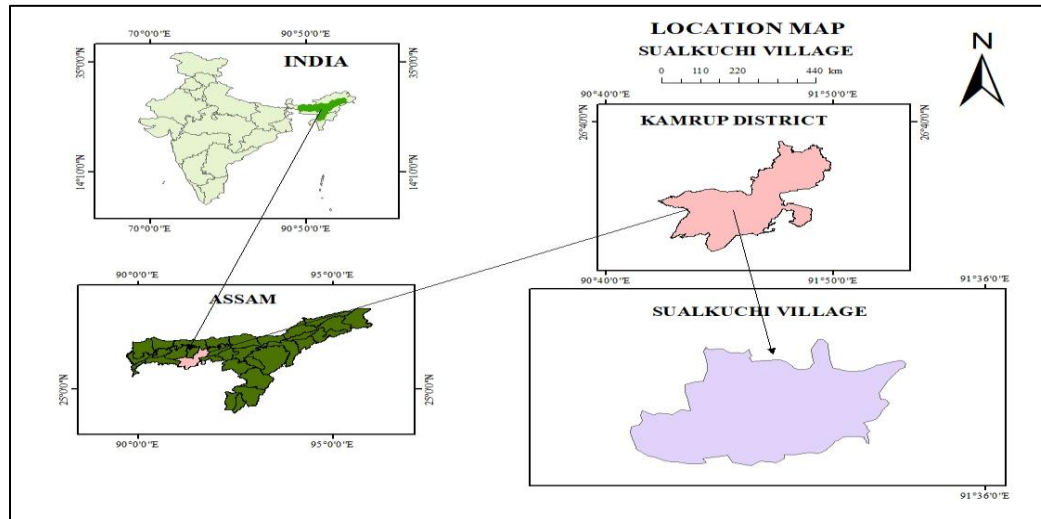


Fig.- 1: Location of Sualkuchi Village

1.3 Methodology

The present study is based on both the primary and secondary data. Primary data based on intensive field study including household survey and also from the end of researchers own experience and perception. Information was collected through personal interviews and discuss with family members. The secondary data collected from the different books, journals and periodical volumes.

2. Muga Industry in Assam: An Overview

Muga silk is a variety of wild silk geographically tagged to the state of Assam in India. Among the various types of silks produced in the state, Muga silk holds a special place.

The name ‘Muga’ is derived from the Assamese language which refers to the natural amber of cocoon of the silkworm used to produce this silk. Muga silk is also commonly known as “Golden Silk from Assam” owing to its beautiful and natural sheen (Das and Goswami 2020).

There are three major primitive varieties of silks that originated from Assam. The Golden Muga silk, Pat silk, and Eri silk rules the handloom industries in Assam and now emerges as a soaring export material. Muga and Eri are non-mulberry silks and Pat is mulberry silk. These silks are categorized according to the kind of silkworms from which they are derived (Central Silk Board 2023).

Muga silk is produced by the muga silk worms, scientifically known as *Antheraea Assamenis*, which are fed on Som (*Machilus bombycina*) and Sualu (*Litsaea polyantha*) leaves. Golden yellow silk thread is derived which is rare with its texture, luster and durability.

Pat silk is produced by the *Bombyx textor* or *Bombyx mori*, a mulberry silkworm that feeds only on mulberry leaves. Brilliant white or off-white coloured silk thread is derived and is mostly used for its very bright texture.

Eri silk, also known as Errand or Endi, is derived from the silkworm *Philosamia Ricini* and *Salma Ricini*. *Philosamia Ricini* feeds on castor oil plant leaves and hence known as castor silk. It is believed that the name “Eri” derived from the word “Era”, which means castor plants in assamese. It is known as ‘Peace silk’ or ‘Nonviolent silk’ as the moths are not destroyed in the cocoon but are allowed to emerge and the pierced cocoons are spun rather than the reeled to produce the Eri silk yarn (Central Silk Board 2023).

2.1 Production of Silk from Silkworm

The silkworm larvae are cultured and then fed with leaves (mulberry/som/castor plant). After the moulting processes, the worm builds its silken cocoon by secreting and surrounding itself with a dense salivary fluid from the structural glands which forms long continuous fiber. These large glands, located in the head of these worms, produce gum-like dense substances called sericin and fluid emerges from the tube-like exit, near the mouth called spinneret. This fluid hardens on exposure to air, forming thread like structures composed of fibroin, a type of protein. These are the silken strands that form the silken cocoon (Ganga and Chetty 2013).

Process of Silk Production

1. Thousands of eggs are laid by the silk moth and larvae or silkworms from after hatching of these eggs.
2. The larvae are fed on mulberry, som leaves etc.
3. Further growth occurs and after several moulting, these worms start forming the cocoon.
4. Firstly, it weaves a net to hold itself and then spreads are salivary fluid that solidifies with contact to air forming the silken cocoon.
5. The silkworm spins a filament of about 900 m or one mile to the maximum and it encases itself within two to three days.
6. The worm intact cocoons are then boiled.
7. The outside end of the filament of silk is retrieved by brushing the undamaged cocoon.
8. Silk threads are the wound to a reel and silk at this stage is called raw silk.
9. Later degumming process is done by boiling the silk in soap and water, resulting in soft and lustrous silken threads.

As the quantity of good silk obtained from each cocoon is very less, so to produce one pound (0.453kg) of raw silk, around 2500 silkworms are needed. Each cocoon may contain approximately 1000yards (914m) of silk filament. Each thread may be comprised of 48 silk filaments.

Unlike all the other silk production, the Eri silk is produced without killing the larvae. The filaments of the cocoons produced by these particular worms are neither continuous nor thick and hence cannot be reeled. Thus, the pierced cocoons are spun into Eri silk after the moth emerges out of it. This process is also known as Ericulture.



Source: https://www.researchgate.net/figure/The-life-cycle-of-the-silkworm_fig1_367468256

Fig.- 2: Life cycle of Silkworm



Source: <https://www.alamy.com/stock-photo-yellow-silkworm-cocoon-in-nest-on-threshing-basket-95473651.html>

Fig.-3: Yellow Silkworm Cocoons

Sericulture has been practiced in the state from time immemorial, and the State is proud of traditionally producing.

2.2 Muga Silk industry in Sualkuchi

Sualkuchi is a multi-caste town of Kamrup (rural) district of Assam, situated on the North bank of the mighty Brahmaputra at a distance of 30 km west of Guwahati. The main centre of Silk handloom and textile industry in Sualkuchi, many people in Sualkuchi are weavers. Almost every household has a hand-loom to manufacture traditional Assamese Silk; it was famous as a craft village, practicing pottery, weaving, goldsmith, oil processing etc. But with time the artisans have taken up silk production and weaving as main profession. Sualkuchi is often known as the Manchester of East of Assam.



Fig.- 4: Weaving wonders on the traditional hand-loom

Women play a significant role in these kinds of textile industries as such silk producing activities are mostly home-based. These practices originated from rural families where weaving and silk production was a tradition. More than 53% of women are involved in various activities of sericulture. They along with men have been actively participating in all the sectors of sericulture from on-farm activities to fabric creation, marketing and consumption (Ahmed and Ranjan,2017).



Fig.-5: Traditional Hand-loom

3. Current status of Muga Silk in Sualkuchi

Sualkuchi is a multi-caste village of kamrup (rural) district of Assam, situated on the north bank of the mighty river Brahmaputra. Many people in Sualkuchi are weavers. Sualkuchi in Assam, India is renowned for its production of Muga Silk, a unique variety known for its golden sheen and durability. The status may vary, but typically Muga Silk continues to be an important part of Sualkuchi's economy and cultural

heritage, with efforts ongoing to preserve and promote its production. Assam is only one place which is environmentally suitable for producing all the types of indigenous silk like Eri, Muga, Pat and Tussar. Assam has many silk weaving centers but the reputation Sualkuchi has earned over the years.



Fig.-6: Sualkuchi Silk Testing Laboratory

Despite all these advantages, today Assam's Muga silk is struggling to survive. The popularity of Assam silk is gradually diminishing day by day. The silk in Assam are mainly limited to making traditional dresses, though slight diversification can be seen nowadays. Assam Silk is falling due to high price in comparison to the other silk from outside the State. The worst impact of the duplicity is fall on the weavers. The Sualkuchi Silk industry has been severely impacted by the increase in silk yarn prices and the overwhelming availability of less expensive polyester clothing.



Fig.-7: Handmade Muga Sador-Mekhela

3.1 Economic importance of Muga Silk industry

Muga silk is pride of Assam. Assam is the hub of silk production and it is the largest producer of the golden Muga silk all over the world. Assam produces four types of silk. Muga silk is also referred as the “Queen of Textile Fibers”. Assam contributes 95% and 65% of country’s total Muga and Eri production. In Assam silk are produced traditionally, Muga culture is mainly distributed in the district of Kamrup (Sualkuchi), Kokrajhar, Goalpara, Udalguri, Tinsukia, Dibrugarh, Jorhat, Golaghat, Lakhimpur and Dhemaji. India is also a traditional silk producing country and it is also the 2nd largest silk production hub in the world.

The Muga silk industry plays an important role in economic development. It is also providing employment and opportunity to the large number of people and also to the rural people. Moreover, Muga silk industry also attracts tourists to the Sualkuchi Village, contributing to the additional economic opportunities. Visitors often prefer to purchase handwoven textiles contributing to the financial stability of the artisans, contributing to the overall economy. The price of Muga silk is very high and it has a strong market demand domestically and internationally. At present almost 74% of the households are at work in the commercial weaving industry. Muga silk production helps in trade generation and also helps in growth of revenue for the state through export. This revenue helps to the overall economic growth of Assam. Mainly the Muga silk industry located in Sualkuchi. At present the business of Muga silk is worth rupees 200 crore (Central Silk Board 2023).

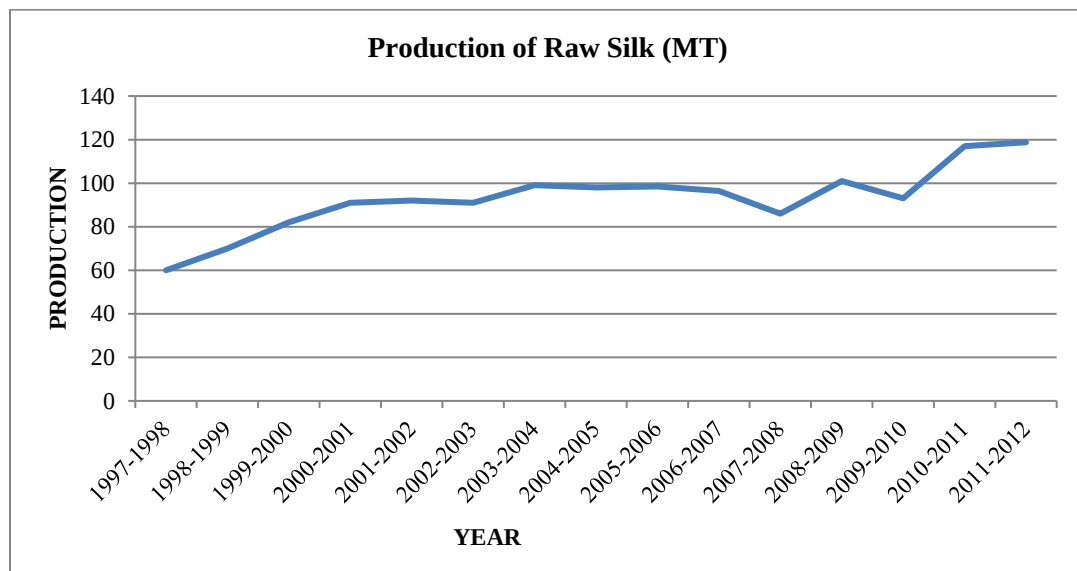


Fig.-8: Handmade Muga Silk Sador-Mekhela with Authenticity Verification Tag

Table-1: Muga raw silk production in Assam and India (in MT)

Year	Muga Silk Production in Assam	Muga Silk Production in India
2000-2001	94	99
2001-2002	91	100
2002-2003	91	102
2003-2004	94	105
2004-2005	98	110
2005-2006	98	110
2006-2007	107	115
2007-2008	105	117
2008-2009	105	119
2009-2010	93	105
2010-2011	117	124
2011-2012	119	126

Source: Central Silk Board of India



Source: Central Silk Board of India

Fig-9: Line Chart (graph) of Raw Silk Production

4. Threats of Muga Silk

Silk is an expensive textile fiber. India is the second largest silk producer and the largest consumer in the world. India is also the biggest importer of silk goods. But at present Muga silk faces several challenges in its production.

Labor intensity is one of the most important challenges faced by the Muga silk industry. Rearing Muga silkworms requires significant labor, as the process involves tending to the silkworms, feeding them and harvesting the silk cocoons (Das and Deka 2021).

Environment is another important factor that makes challenge to this industry. Muga silk production relies on the health of the natural habitat and mulberry trees, which can be affected by climate change, deforestation and other environmental pressure. Muga silkworms are susceptible to various diseases and pests, which can be lead to significant losses if not managed effectively.

Another challenge faced by the silk industry is market competition. Muga silk competes with other types of silk as well as synthetic fibers, which may offer lower costs or different properties. Muga silk is primarily produced in Assam, India which limits its global reach and can make it vulnerable to local economic and political factors (Deka and Goswami 2019).

Maintaining consistent quality standards in Muga silk production can be challenging, especially given the natural variability in the silk fibers. Investment in research and development is essential for improving Muga silk production techniques, addressing challenges and developing new products to meet changing market demands (Central Silk Board 2023).

The weavers faced acute shortage of sufficient fund to run their looms by bearing all the expenses. Because basically the weavers are belonging from very poor family and some are hired from the other places. As a result, the local bank and other financial organizations are not keen to provide any fund to the loom holders.

There are many minor problems causing serious harm to the muga silk industry of the Sualkuchi village. Among them the most irregular power supply for lighting the workshops, another notable one is unavailability of accessories. Because the accessories are basically supplied from the outside of the state and it required big amount, not a single industry are found in the state to supply the accessories like reeds, shuttle, bobbins, doobby's, nylon cords, ropes etc. (Dutta 2018, Saikia 2017).

5. Findings

1. The study reveals that Muga silk production in Sualkuchi follows a traditional and labour-intensive process involving silkworm rearing, cocoon harvesting, reeling, spinning, and weaving, which has been preserved as an important cultural practice for generations.
2. The Muga silk industry contributes significantly to the local and regional economy by generating employment opportunities, particularly for women, supporting household income, and promoting tourism and traditional handicrafts.
3. The industry is facing several challenges, including rising prices of raw silk yarn, shortage of quality cocoons, labour-intensive production processes, inadequate financial support, irregular power supply, and lack of locally available weaving accessories.
4. Environmental changes, increasing competition from synthetic and cheaper textile products, declining interest among younger generations in traditional weaving, and market uncertainties have emerged as major threats to the sustainability of the Muga silk industry in Sualkuchi.
5. Sualkuchi Revenue Village is one of the most prominent centres of Muga silk weaving in Assam, where a large section of the population depends directly or indirectly on the silk industry for their livelihood.

6. Conclusion

The Muga Silk Industry in Sualkuchi faces a precarious situation, with potential threats to its revenue and sustainability. Factors such as changing market dynamics, environmental challenges, or economic shifts may be contributing to this risk. Further analysis and strategic measures are necessary to safeguard the future of the Muga Silk Industry in the Sualkuchi Revenue Village. This may involve investing in research and development to enhance the quality of Muga Silk and create innovative products, staying competitive in the market; investing in training programs for workers to enhance their skills and ensure the availability of skilled labor in the industry; involving the local community in decision-making processes, fostering a sense of ownership and pride in the Muga Silk Industry, which can contribute to its protection and growth.

Conflict of Interest: The author declares no conflict of interest.

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