

## Muga Silk Value Chain in Assam

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### SUMMARY

Muga silk value chain is a set of economic activities which add value along the chain. Muga silk is one of the costliest silk of the world and Assam has the monopoly of muga silk production. The state alone contributes 82.29 per cent of the total muga raw silk in India. Pre-cocoon and post-cocoon activities of muga silk production process need proper handling and strict supervision for quality products. Fabric is the final product in the chain of activities. Challenges are present across each stage of the muga silk value chain. Proper intervention in the value chain will help the golden silk of Assam to acquire its rightful place in the national and international market.

### INTRODUCTION

Assam 'The land of blue hills and red rivers' is famous for the golden silk 'muga'. '*Atikoi senehor mugare mahura, tatukoi senehor maku*' is a line of well known Assamese bihu song that reveals the relationship between Assamese people and the golden muga silk. Assam holds the Geographical Indication for muga silk due to its unorthodox look, eco-friendly behaviour, wide range of utility etc. Craze for the muga silk has been increasing in the recent years. Commercialization of the muga culture has started from the Ahom days and Ahom reign (1228-1828) was regarded as the gilded age for the muga silk industry. Ahom kings created different titles like *Rihdongia Phukon, Khongia Phukon, Tipomia Phukon, Charingia Phukon* etc. for engaging people in different value chain process of the muga silk. Muga silk industry of Assam is an important cottage industry where thousands of families earn their bread and butter. Former President of India, Sri APJ Kalam during his visit to Suwalkuchi had remarked that if Assam could produce another 20 (twenty) Suwalkuchi's, then the scenario of Assam to the National and International arena would have been different (Dutta, 2015).

Value chain is the overall group of economic activities which contribute directly to the determination of a final product. The 'Silk Value Chain' is the concept in which value is added along the chain, both to the product/service and the actors involved. Muga silkworm (*Antheraea assamensis* Helfer) feeds on different species of food plants, among which two laurels *Persea bombycina* (King ex Hook. fil.) Kosterm and *Litsea monopetala* (Roxb.) Pers. are the primary host plants. Both the host plants can be utilized for rearing muga silkworm almost four years of planting. Assam has the entire value chain of muga silk from dfls (disease free layings) production in grainage to weaving of fabric products and selling in retail outlets. Assam including Bodoland produced about 197.90 metric tons of muga silk (Anon., 2020). There are 30,710 numbers of families engaged in muga culture and the total muga host plant area is 10762.49 hectare (private + government) in the state (Anon., 2021). In the government sector there are 13 nos. muga seed farm, 70 nos. muga village grazing reserve and 14 nos. of muga reeling unit in the state (Anon., 2022). A project 'Assam Silk Outreach Mission (Muga)' was also undertaken by the Government of Assam through Sericulture Department in the year 2017-18 for augmentation of muga silk production by 10 times in 10 years. It is funded under the State-Owned Priority Development (SOPD-ODS) scheme through a society called the ASOM Society.

### Different stages of muga silk value chain in existing plantations are listed below:

#### Rearing:

Muga silkworm is multivoltine in nature and has five to six overlapping generations in a year. The generations are locally known as *Katia, Jarua, Chotua, Bohogua, Jethua, Aherua, Saonia, Bhadia, Ahinia* and *Aghonia*. Among the generations *Katia* (autumn season) and *Jethua* (spring season) are the commercial crops and others are seed crop. Commercial crops are mainly used to obtain raw silk (grege) and seed cocoons are used for further breeding. Rearing of muga silkworm is an outdoor activity. Rearing being outdoor, the success of crops is always bestowed on the mercy of environmental conditions and pest and predators. Therefore, it is very much essential to protect the larvae with great care and farmers also need to ensure the correct environmental condition like high temperature, humidity and rainfall etc. before rearing.

**Grainage:**

Grainage is an establishment, where silkworm eggs are produced by following scientific procedures. It involves a chain of interdependent activities from preservation of seed cocoons to packing and distribution of eggs. It is the most important sector that steers the entire muga silk value chain. Disease free healthy seeds particularly pebrine free eggs are required for successful completion of the entire muga silk value chain. Utmost care must be taken at this stage. The success of muga silkworm rearing mainly depends on proper functioning of grainage and production of high quality seeds.

Muga Silkworm Seed Organisation, Guwahati Assam with two P4 units, five P3 units are actively involved in the production of commercial muga silkworm seed. Newly established three muga P3 Basic Seed Stations and 2 Silkworm Seed Production Centres under North Eastern Region Textile Promotion Scheme (NERTPS) are also involved in muga seed production. Besides these farmers are also producing muga seeds in the private sector. Muga seed production is a good economic activity of the farmers as the price of seed (egg or seed cocoon) is more compared to the cut or reeling cocoons.

**Reeling:**

It is a process by which long and continuous filament is mechanically drawn and wound on a spindle in filature. Muga silk reeling involves cocoon sorting, stifling, cooking, deflossing and reeling. Various contrivances like bhir, CSTR pedal cum motorized reeling cum twisting machine, multi-end reeling machines etc. are used for reeling. Reeling is a very complicated process and is done by experts under strict supervision. It takes years to acquire the perfect skill of drawing out yarn without breakage. Cocoon banks were established by the government to help the reelers/ reeling units of the states and make available the raw material throughout the year. The Muga Raw Material Bank (presently merged with CMER&TI, Lahdoigarh) fixes the floor price of the muga cocoon in order to stabilize the market price of cocoons so that the primary producers get remunerative price.

**Weaving:**

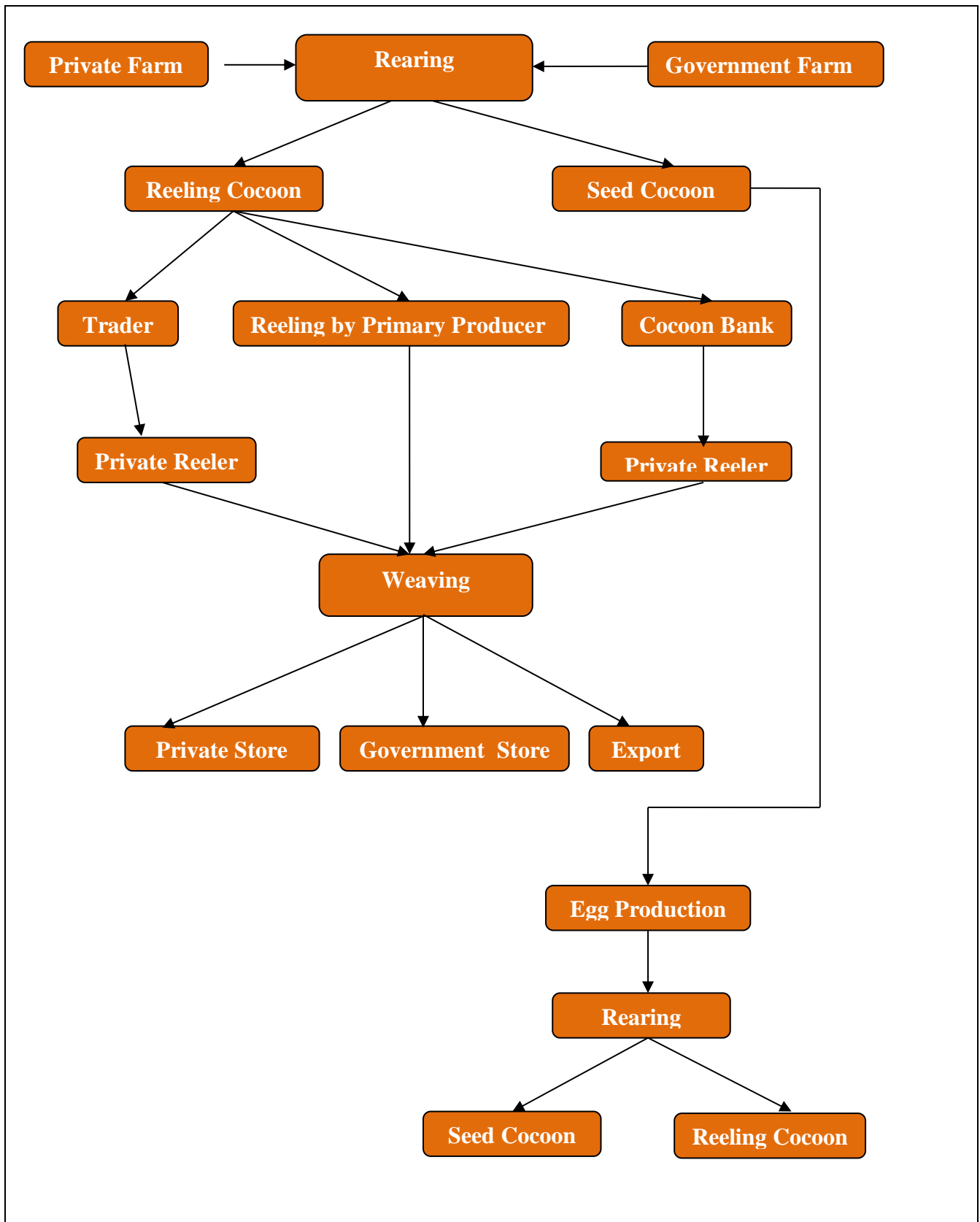
It is the combination of warp and weft silk yarn for production of a fabric. Silk yarns used for lengthwise are warp and crosswise is the weft. Weaving is inexorably linked with Assamese culture and heritage (Dutta, 2015). In Assamese culture the primary qualification of a girl in her wedding was her “skill to weave”. Because of this reason perhaps, Assam has the largest concentration of handloom and weavers in India (Anon., 2019). As the silk yarn is very delicate therefore the entire weaving processes is done by hands. Use of power loom is not preferred because the yarn is generally not suitable to run at high speed and also due to the traditional believes of locals to use only the age-old techniques in order to keep the product as culture. Once the fabric is manufactured it is then sold in private stores or in stores managed by the government. The weavers of Sualkuchi – the silk village of Assam is mainly engaged in silk weaving and weavers from nearby areas also come to Sualkuchi to earn their livelihood through silk weaving.

**Key Challenges:**

Some of the key challenges for each of the stages are listed below:

**Rearing and seed production**

- Inadequate supply and shortage of quality dfls/seed cocoons
- High mortality rate of silkworms due to chemicals used in the surrounding tea gardens, paddy fields, banana crops etc.
- Lack of skilled manpower required during the whole rearing cycle
- Lack of infrastructure and skilled manpower required during dfls production
- Extreme weather condition during rearing of seed crop
- Lack of working capital to conduct rearing and maintenance of farm
- Limited awareness of the advantages of muga silk production among the young generation



**Figure:** Flow chart of muga silk value chain

**Reeling**

- Lack of modern equipments
- High price of cocoons
- Involvement of middle men
- Lack of marketing information

**Weaving**

- Migration of young generation towards other industrial sector
- Lack of working capital to buy muga yarn for weaving
- Lack of modern equipments and machineries

**Marketing**

- Most of the muga silk value chain stakeholders have no direct marketing links
- Large involvement of middle men
- Limited branding and promotion activities to create awareness about the muga silk products

**CONCLUSION**

Muga culture is the most pre-dominant sericulture industry that occupies an eminent place in preserving Assam's heritage and culture. Muga culture plays a vital role in the economy of rural people of Assam. It has been able to provide livelihood to small and marginal farmers either directly or indirectly. Although, the muga silk industry of Assam has been on a firmer footing ever since the Geographical Indication (GI) tag came its way, but even then, the golden silk of Assam has not been able to acquire its rightful place in the national and international market because of the various challenges present across each stage of the value chain.

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