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## Women's Empowerment through the Silk Industry of Assam, India, and its underlying Economy

By Ranjit Singha<sup>1</sup> and Surjit Singha<sup>2</sup>

### Abstract

In the medieval era, the Royal families of Assam, India produced *Muga silk* fabrics. During the time of the Koch Dynasty (Historical Koch Country), Muga silk from ancient Pragjyotishpur and Koch Behar became an integral part of the trade with Bengal, Bhutan, Tibet, and the Mughals. Most households in Assam weave cloth and every girl child in the household acquires weaving skills at a very young age from her mother. In Sualkuchi, a town in Assam, there are approximately 6,872 female weavers. These weavers are very concerned about the preservation of traditional handloom weaving as they feel that over time the skills required for this could disappear. They feel that they are unable to work as efficiently in their old age as they had in their youth. The automated machine seems to be a sign of hope for them, but at the same time, they have a strong attachment to the traditional handlooms. Quite recently, the traders have started procuring traditional garments manufactured from cloth made by automated machines. This is a threat to the local weavers since these garments are sold at a lower price, and this poses a challenge to the traditional handloom fabrics of Assam. A sustainable model needs to be incorporated to improve the conditions of the local weavers. The introduction of modern techniques and business strategies will help to empower the weavers. Muga is a nonflammable, anti-bacterial, natural, lustrous gold fabric which absorbs UV rays from sunlight. Pat silk is hypoallergenic, and it contains sericin, which reduces allergic reactions in the skin. Eri is antifungal, and this makes it a unique fabric for face masks, baby clothes, undergarments, blankets, quilts, medical uses, mosquito nets or special attire to protect one from UV rays, fungus, bacteria, and insects. The full range of the unique qualities of the fabrics of Assam should be widely publicized to increase the consumer demand for these handlooms. The area also has the potential to make castor oil out of the castor plant (*Ricinus Communis* Linn), which is a feed to the Eri Silkworm.

**Keywords:** Women's Empowerment, Muga, Eri, Pat, Assam, Handloom, Handmade, Kamrup, Koch Dynasty, Anti-bacterial, Uninflammable, Anti-fungal, Hypoallergenic, Sericin, castor oil

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## Introduction

Muga Silk of Assam<sup>3</sup> was mainly produced by the "*Rajagharia looms*", and these silk weavers were patronized by the Ahom<sup>4</sup> queen. In the early days, *Muga*<sup>5</sup> silk weavers wove fabrics for the members of the Royal family.

The Ahom Kingdom (1228-1826) had a unique administrative system to oversee silkworm rearing, reeling of silk yarn and weaving of silk fabrics. Momai Tamuli Barbaruah, the Commander in Chief of the army in the Ahom Kingdom, made it an obligatory duty for every household to spin and weave. Again, during the period of the Koch Dynasty (Koch Country), Biswa Singha<sup>6</sup> appointed his son as a supervisor of the handloom weaving industries. (Dutta, D. 2015). Koch King, Naranarayan presented *Vrindavani Vastra* to *Shukladhwaja (Chilaray)*. This king also commissioned weavers to weave, the *Vrindavani vastra*, a drape woven in Assam during the 16<sup>th</sup> century, led by *Mathuradas Burha Aata*, under the supervision of *Sri Srimanta Sankardeva*, a Vaishnavite saint and scholar of Assam. *Mathuradas Burha Aata*, the devotee of *Sri Madhabdev*, was the initial *Satradhikar*<sup>7</sup> of the Barpeta<sup>8</sup> Satra. *Mathuradas* with the support of 12 assistant weavers wove the *Vrindavani Vastra*. The drape had illustrations of Lord Krishna's childhood days and is held in reserve at Victoria and Albert Museum in London and Musee Guimet (the Guimet Museum) in Paris. The *Vrindavani Vastra* validates the skilled weaving techniques that existed in Koch Dynasty during the medieval era.

It also depicts the skills of intricate weaving and availability of the advanced skilled people in the early days. However, over time, such high-end skilled weaving began to decline. With the new state formation in Koch Dynasty with the peaceful political condition, and admixture of the tribal and non-tribal techniques of handloom and other crafts during the reign of Koch King Naranarayan and his successors, handloom and crafts industry made considerable progress. During the period of the Koch Dynasty, among all industries, weaving, dyeing, silk (*pat, Muga, and endi*) and textile industry were flourishing. In the Koch Dynasty, the professional silk spinners and weavers were called *Katanis*, and in most parts of Assam, especially in those parts which were an integral part Koch Dynasty, even today they are known with the same name *Katanis* and *Bowati*.

There is a reliable reference for the richness of the textile industries engaged in silk, *Muga*, and clothes made of cotton. During the time of Koch Dynasty, *Muga* silk from the ancient Pragjyotishpur and from ancient Koch Behar, was an important article of trade with Bengal, Bhutan, Tibet, and Mughal. Koch Behar (Cooch Behar) was a State Under 'C' Category in the first Constitution of India.

Koch King Jagaddipendra Narayan Bhup Bahadur signed a treaty on August 28, 1949, with Governor-General of India, that Cooch Behar Princely State will be merged with the Dominion of India, popularly known as Cooch Behar Merger Agreement. In the treaty, it mentions that from September 12, 1949, the Government of India would be capable of governing the Cooch Behar Kingdom in such a style and through such an agency as it might reason to fit.

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<sup>3</sup> Assam is a state located in North East India.

<sup>4</sup> Ahom is an indigenous tribe of Assam.

<sup>5</sup> Muga silk is a variety of silk geographically tagged to the state of Assam in India. It is known for its extreme durability and has a natural yellowish-golden tint. It was previously reserved for the use of royalty.

<sup>6</sup> Biswa Singha was the progenitor king of the Koch dynasty of the Kamata kingdom. His ethnicity was Koch Rajbongshi (Koch Tribe)

<sup>7</sup> Satradhikar is a head of the socio-religious institutions.

<sup>8</sup> Barpeta is a district in the state of Assam in India.

The Koch Behar Kingdom turned to a Koch Behar State. Later, the States Reorganisation Commission of India categorized states based on language for the efficient functionality of the state and thus, Koch Behar (Cooch Behar)<sup>9</sup> became a district. Accordingly, the eastern part of the Kamatapur was merged with the present state of Assam, and the Western part of the Kamatapur with the present modern state of West Bengal. The Handloom industry of the Koch Dynasty crumbled with the division of Kamatapur because some of the areas became a part of Meghalaya, Bihar, and Nepal.

Assam, the area, taken up for this study, is a multi-lingual and multi-cultural state and is ideally known for its versatile fabrics - *Muga*, *Eri*, and *Pat* silk.<sup>10</sup> There are over 50,000 handlooms in lower Assam (Bongaigaon, Dibrugarh, Golaghat, Karbianglong, Barpeta, Jorhat, Kokrajhar, Kamrup, Lakhimpur, Nalbari, Nagaon, Sibsagar, Morigaon). In the places like Karimganj, Dhemaji, Goalpara, Tinsukia, Sonitpur, there are almost 25000-50,000 handlooms and in N C Hill, Cachar, Dhubri, Hailakandi there are around 25000 handlooms, which represent potential scope for further intervention. (Refer to Annexure Table 1.7A). During monsoon [from June to August] owing to humidity, weavers find it challenging to weave. The shorter days, during winter, [December-January] reduces the work hours for the weavers. On average, weavers will not be able to work for 30-60 days during a year. Silk products such as *Angsha*, *Patani*, *Agran*, *Dhoti*, *Riha*, *Mekhela*, *Chador*, *Gamocha*, and *Mosari*,<sup>11</sup> etc., are woven. During the early 20<sup>th</sup> century, the requirement of cloth of every family of Assam was taken care of by the family handloom weavers.

There are many tribes in Assam including the *Koch Rajbongshi (Koch)*, *Koch*, *Rabha*, *Hajong*, *Tai Ahom*, *Chutia*, *Moran*, *Matak*, *Tea Tribes (Group of Tribe)*, *Boro Cachari*, *Karbi*, *Dimasa*, *Kuki*, *Mising (Miris)*, *Mech*, *Ho*, *Jingpo*, *Nyishi*, *Barman Kacharis*, *Sonowal Kacharis*, *Bodo (a group of around 16 tribes as per Edward Gait)* and many others. Each tribe follows specific patterns of traditional attire.

The Koch Rajbongshi (Koch) tribe wears Patani, Agran, Angsha, Yellow Ancha (Singha, S., & Singha, R. 2019). The Original Language of Koch Rajbongshi (Koch) is Koch, but Koch Rajbongshi's of Assam speak Kamatapuri language more frequently; however, the Koch of Meghalaya still speak the Koch Language.<sup>12</sup>

## Methodology

Systematic Literature Review, Primary Observation, Field visit, Primary Data Analyses, Market Survey, SWOT analyses.

## Limitation of the Research

Within the Kamrup handloom cluster, the Saulkuchi block has been chosen for the study; exploration and preservation of eco-friendly dyeing processes are to be studied (Refer to Annexure Table 1.14).

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<sup>9</sup> Koch Behar also termed as Cooch Behar

<sup>10</sup> Pat silk or Mulberry silk is a variety of domestic silk of Assam, India.

<sup>11</sup> Angsha, Patani, Agran, Dhoti, Riha, Mekhela, Chador, Gamocha, are the traditional attires, and Mosquito bed net is termed as Mosari in regional language.

<sup>12</sup> Koch Language: Spoken by Koch Tribe of Southeast Asia.

## **Objective 1: To understand the handloom industry in Kamrup**

Kamrup is one of the oldest districts of Assam, which was established in the year 1934 by the British Government (Act II of 1835). The Kamrup district bifurcated into several smaller administrative units, like Barpeta in 1983 and Nalbari in 1985. The latest fragmentation of Kamrup district was implemented in 2003, by which it was further sub-divided into rural Kamrup and urban Kamrup. *Poiranga*<sup>13</sup> one of the handloom clusters of Kamrup, which is around 90 km away from Guwahati, is known for *eri* and cotton weaving. Around 8500 families are rearing *eri* silkworm on 357 hectares of land within the Kamrup cluster. 4000 Muga rearers in the Kamrup cluster rear *Muga* silkworms on 660 hectares of land, around 400 *Pat* rearers in the Kamrup cluster rear *Pat* silkworms on 22 hectares of land.

Sualkuchi is one of the towns of Kamrup district in the state of Assam. The legacy of Sualkuchi's weaving can be traced back to the fourth century BC. *Karpsik* (Cotton), *dukula* (Muga silk), *Khauma*(*eri/endi*) and *patroma* (mulberry or *pat*) were manufactured in several units of Kamrup. From *Tantikuchi*, 26 families were brought to Sualkuchi during the *Pala* dynasty to encourage weaving. The residents of Sualkuchi thoroughly imbibed the knowledge and skills of weaving and produced impressive products. This is a matter of pride for the weavers of Sualkuchi, who maintain their traditional skills in weaving by holding off the competition from the automated machine.

## **The Production Process**

### *Raw materials*

Golden *Muga*, White *Pat*, *Eri*, Cotton.

The golden *Muga* silk that absorbs 85.05 % of the ultraviolet rays of the sun is an exceptional cloth since it protects from insects bites such as mosquitoes and horseflies, etc. (Gogoi, M., Gogoi, A., & Baruah, B. 2017, January 28). *Pat* silk is odourless; therefore, it is a superior material for pillows. It is hypoallergenic and has sericin, which protects against allergic skin reactions and offers this unique quality for garments to address skin allergy-related issues or medical conditions because of cloth. *Eri* silk is antifungal, and it has the same capacity for thermal insulation as wool, so it is the most suitable material for baby clothes, undergarments, blankets, quilts, and face masks.

### *Golden Muga*

It is known as the king of all silk. Products like cushion covers, plain *pat* sheets, bed sheets, bed covers, curtains, fabrics, designer sarees and umbrellas can be made out of this fabric. (Refer to Annexure Table 1.12B for more details).

### *Pat silk (Mulberry silk of Assam)*

*Pat* silk is from *Bombyx Textor* silkworms. (Refer to Annexure Table 1.10, 1.12B). Some of the value-added products from this are pillows, cushion covers, plain *pat* sheets, bed sheets, bed covers, curtains, fabrics, designer sarees and umbrellas.

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<sup>13</sup> *Poiranga* is located in South Kamrup District of Assam State.

### *Eri silk*

Eri silk is from Eri silkworms. The larva of these worms feeds on the castor plant. It is known as *endi* or *errand* silk. It is soft and warm and is popularly used for shawls and quilts. The face mask of unique properties is also possible (Refer to Table No 1.11, Table 1.12A, and Table 1.12B).

### *Cotton*

Cotton is a smooth, feathery staple fibre that develops in a form called boll or a shielding case. (Refer to Annexure Table 1.12, 1.12A. and 1.12B).

### *Some of the Organic material used for dyeing*

To dye cotton, Muga silk and Eri in Assam, some of the plants like *Acacia catechu* Willd (Mimosaceae), *Adina cordifolia* Benth. & Hook.f. (Rubiaceae), *Aegle marmelos* Correa ex Roxb. (Rutaceae), *Albizia odoratissima* Benth. (Mimosaceae), *Ervatamia divaricata* (Linn.) Alston (Apocynaceae), are used (Kar, A., & Borthakur, S. K. 2007). Refer Annexure Table 1.14

### **Objective 2: To observe the current price range of Assam's handloom products**

The price of a *Muga silk mekhela sador*<sup>14</sup> is around 5000 to 50,000 INR, and for a *Muga sari* the price starts from 8250 to 75,000 INR. (Refer Annexure Table 1.13)

### **Objective 3: To analyze the human resource problems within the weaving industry of Kamrup Cluster**

In the Kamrup cluster of Assam, most of the houses have *Sal* looms, and all the family members work as a team in weaving activities. The children acquire the skills of weaving at a very young age, and skills are transferred from mother to daughters/sons. The entire family gets involved in the value chain of weaving (Baishya, M. , 2016). About 80 per cent of the women weavers from the Sualkuchi block receive their wages monthly, and 20 per cent of the women weavers accept their payments weekly; no women weavers receive their payments daily or annually.

In Sualkuchi there are approximately 13,752 handlooms and approximately 12,056 weavers, out of which 6,872 are female weavers; 90 per cent of households have looms; 79 per cent of families have traditional looms, and 17 per cent have modern looms for commercial silk weaving. Most of the looms are traditional looms.

Small size firms consist of 1-3 handlooms along with the involvement of 18 women, and they earn around 8000 INR per month, medium-size firms consists of 4 to 6 handlooms with the participation of 19 women, and they make about 9000 INR per month. Bigger firms include more than seven handlooms with the involvement of 23 women, and they earn around 9500 INR per month, per person. It is the master weavers, and the retail business outlets, who make significant money. Most of the master weavers are women, and about 80% of the weavers of Sualkuchi block are women. Weavers of the Sualkuchi earn between 8000 to 9500 INR or in rare cases slightly more.

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<sup>14</sup> Mekhela Sador: Is an indigenous traditional attire worn by women. It is two pieces of cloth draped around the body. The bottom portion, draped from the waist called mekhala. Sador is a long length cloth, one of the ends is tucked into upper portion of the mekhala and the rest is draped over and around the body.

**Objective 4: To analyze the Condition of the Work Premises of the Kamrup Cluster within the Weaving Sector**

For the Kamrup cluster, most of the houses possess *Sal* (Traditional Weaving Machine), and it is attached to the house where weaving is done collaboratively along with the family members (Baishya M, 2016). Around 16% of women weavers face problems in the workplace: 20% of women weavers suffer from uncongenial accommodations; 36% of women weavers from the Sualkuchi block face problems regarding payment; 16% of women weavers of the Sualkuchi block have issues with the required work periods and time; 6% of the women weavers from the Sualkuchi block had problems with lavatory facilities and the weavers do not get enough leisure time.

**Objective 5: To understand gender diversity within the weaving industry of the Kamrup cluster**

Around 54.75 per cent of women are involved in weaving in the Kamrup cluster; 96% of the women weavers of the Sualkuchi block (Baishya M, 2016) spin from morning till late evening. The weavers of Sualkuchi earn between INR 8000 to 9500.

**Objective 6: To understand the working conditions of women weavers of the Sualkuchi block**

Around 16 per cent of women, weavers face problems in the workplace; 20 per cent of women weavers suffer from crowded accommodations; 36% of women weavers from the Sualkuchi block and from the Kamrup cluster have problems regarding payment; 16 % of the women weavers of the Sualkuchi block had issues with the working period and time; 6 % of the women weavers from the Sualkuchi block had problems with lavatory facilities and the weavers do not get enough leisure time. 10% of women weavers from Sualkuchi block, Kamrup cluster work more than 12 hours per day (Baishya M, 2016).

In a day, ninety-six per cent of the women weavers in the Sualkuchi block, Kamrup cluster are weaving out of compulsion, and just 2 per cent of the women weavers are involved in weaving to keep the tradition alive. The other 2 per cent of the women weavers are weaving out of interest.

Based on the above data, the researchers discovered that the working condition for women weavers are not conducive to well-being. Health-related issues exist for the weavers of the Kamrup cluster, and the Boko block weavers earn less than INR 2500 per month. The process of making designs in the traditional style is very intricate and time-consuming. As a result, the weavers of the Kamrup cluster, from the Boko block suffer from many eye-sight problems. There is no proper workshed for the weavers to keep looms and fabrics safe from rain and sun damage.

**Objective 7: To Analyze the Artisan welfare schemes of the Kamrup Cluster**

The weavers of the Kamrup cluster are demanding various welfare schemes from the Government of India and the Government of Assam. Some of the benefits which the weavers of Sualkuchi are demanding include free medical aid, weavers' loans, and home loans. Soft loans are also on the list of demands of the Sualkuchi silk industry. The Government of Assam

conducted an Entrepreneurship Development Programme in which training was provided for two weeks.

Some of the schemes that are facilitated by the Khadi and Village Industries Commission (KVIC), the Government of India and the Ministry of Micro, Small and Medium Enterprises are:

- Wages: As per the cost chart of the Khadi and Village Industries Commission (KVIC), Govt. of India.
  - Incentives: Incentives are given to the Spinners and Weavers @10% to their wages.
  - Artisans' Welfare Fund: This is provided to deserving artisans @12% to their wages.
- Some of the Schemes that have been facilitated by Government of India for Handloom Weavers and the Handloom and Khadi Weavers include:
- Aam Aadmi Bima Yojana<sup>15</sup>
  - The National Handloom Development Programme (NHDP) (Refer to annexure for details)
  - The Mahatma Gandhi Bunkar Bima Yojana (MGBBY)<sup>16</sup>
  - Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)<sup>17</sup>

**Objective 8: To perform a “Strengths, Weaknesses, Opportunities, and Threats” (SWOT) analysis of the Kamrup cluster.**

#### *Strengths*

- Sualkuchi weaving is unique and rare, and it has been awarded a GI tag.
- Good networking with yarn suppliers.

#### *Weaknesses*

- Lack of market insight.
- Access only to the local market.
- Low or minimum profit margin.
- Weavers are socially, financially weak, and susceptible.
- The industry is not well connected to worldwide marketplaces and style dynamics.
- 96% of the women weavers from Sualkuchi are weaving out of compulsion.
- Most of the weavers are unaware of the latest designs.
- Lack of seasonal forecast.
- Looms are hardly changed, leading to low productivity and overpriced fabric.

#### *Opportunity*

- Muga silk should be encouraged for exports.
- There is a demand for Muga silk
- Muga silk can be adapted to the latest fashion trends
- Expansion of an export bazaar for apparel textiles
- Ethnic designs can complement contemporary fashions.
- Get a global positioning for its unique woven fabrics.

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<sup>15</sup> Aam Aadmi Bima Yojana is a social security scheme designed for rural landless household in India. It covers life insurance coverage, partial and permanent disability.

<sup>16</sup> Mahatma Gandhi Bunkar Bima Yojana is an enhanced insurance scheme provided to the handloom weavers in case of natural as well as accidental death, partial or total disability.

<sup>17</sup> Pradhan Mantri Jeevan Jyoti Bima Yojana is a Govt. Sponsored Life Insurance Scheme in India.



- Eri, Muga and Pat silk can be used to make face masks because of their unique properties. It can be a value-added product

#### *Threats*

- Limited rearing of Eri/ Muga silkworm and competing demand from outside the states for Eri/Muga cocoons
- Production of Pat Silk is very low
- Politically and culturally sensitive
- Powerloom production
- Sale of low priced imitations in the market
- Limited scale and poor visibility in the market
- 2% of women weavers from Sualkuchi are interested in weaving, and the other 2% are only weaving to keep the tradition alive; the interest in weaving and preserving the tradition is dying. If this trend continues in the future, there will be few weaving professionals.
- Lack of good quality raw material available for the weavers
- Weavers are dependent on the master weavers
- No change of product profile
- Low-value addition resulting in subsistence wages
- Fabricated and fake products are available in the market using the Sualkuchi brand
- Dyeing methods are ancient
- Looms are old and traditional.

#### **Objective 9: To do the gap analysis of the Kamrup Cluster**

The Government has launched various schemes for Assam (Refer to Annexure Table 1.22, 1.23, 1.26). However, women weavers of Sualkuchi earn only around 10,000 INR per month. This also reveals that weavers need the training to increase their skills related to entrepreneurship, technology, legal rights, and innovation. An article published in *The Hindu* newspaper dated November 17, 2015, says that India imports approximately 6,000 to 8,000 tonnes of raw silk and textiles from China for local textile requirements of around 34,000 tonnes of silk. Silk imports to India increased to 144.22 USD million in 2019 from 98.71 USD million in 2018<sup>18</sup>. Silk exports and their byproducts from India were US\$ 291.36 million in 2018-19 and US\$ 243.52 million in FY20 (till December 2019)<sup>19</sup>.

#### **Objective 10: To comprehend the strategic issues**

Most of the weavers in the Kamrup cluster are financially weak and are not in a position to wait for a longer duration of time to sell their finished products. The majority of the weavers are women, and they are either unpaid or poorly paid. Though the younger generation has formal education. There is no social security, specifically for the poor weavers, which results in the weavers getting indebted to the upper-income group such as the master weavers and the traders.

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<sup>18</sup> India Imports of Silk. (2020). In *Trading Economics*. Retrieved July 20, 2020, from <https://tradingeconomics.com/india/imports-of-silk>

<sup>19</sup> Silk Industry and Export In India. (2020, June). In *India Brand Equity Foundation*. Retrieved July 20, 2020, from <https://www.ibef.org/exports/indian-silk-industry.aspx>

### **Objective 11: To formulate Sustainable Development in order to generate more income**

- Value-added products like Pat pillows, Muga umbrellas, Eri silk children clothes, Eri Jeans fabric, Muga curtains, Pat curtains, Muga and Pat Ties, Muga plain fabric and Pat plain fabric are possible
- Direct sales from the production unit to the buyer need to be facilitated through online platforms (Refer to Annexure Table 1.6). Most of the weavers of the Kamrup cluster are from the financially weaker section and need immediate cash.
- In Sualkuchi, the weaving unit<sup>20</sup> for Muga silk is 19 units, Mulberry (Pat) is 18 units, cotton is 18 units. At Kamrup, the weaving unit for cotton is around 143 units, and silk is 23 units. The weaving units for cotton and silk need to be explored further (Refer to Annexure Table 1.7)
- There are more than 50,000 weavers in lower Assam. About 25000-50,000 handlooms are present in Karimganj, Dhemaji, Goalpara, Tinsukia, Sonitpur Location and 25000 handlooms for N C Hill, Cachar, Dhubri, Hailakandi which represent potential scope for further intervention.
- There is a need to explore the data in detail (Refer to Annexure Table 1.7A)
- Possible average net income of Assam weavers is around 2461 INR per month in ideal circumstances; the weavers are not able to work for 30-60 days during the year. During monsoons and winter, weavers get less work (Refer to Annexure Table 1.8)
- The price range for Assam handloom products is significant (Refer to Annexure Table 1.13), the average net income of Assam's Baksa district weavers is around 2461 INR per month.
- Some of the Weavers of Sualkuchi are making around INR10,000, but it is not proportional to their skills.
- There is a need for intervention to increase the earnings of weavers.
- Marketing and export promotion are needed (Refer to Annexure Table 1.20).  
There is a need to understand the impact of the marketing and export promotion specific to the Kamrup cluster.
- The amount released for marketing and export promotion in 2015-2016 is only 105 Lakh, whereas the amount released in the year 2014-2015 was 252 Lakh, (Refer to Annexure Table 1.20). There is a need to understand why the marketing and export promotion budgets are declining.
- There is a need for awareness programs and vigilance regarding child labor as there is a shortage and demand for labor increases during festival seasons.
- Traditional attire of various tribes such as *Patani, Angsha, Agran, Dokhona, Yellow Gamocha, Aronai, Rigdo, Mibu Galuk, Yakan Age-Gasar, Koum Kontong, and Sgaopha* need to be promoted. The promotion of traditional attire from Assam is essential to preserve the cultural heritage so that it increases the livelihood of the weavers.

#### *Other Sustainable Ideas*

- Single Facility Centre for all processes associated with weaving
- Product design and innovation of the existing product
- Should impart training to the Weavers/dyers
- Design of silk-based jewellery and value-added products

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<sup>20</sup> A weaving unit consists of looms in a closed room or in an open space with or without shed.

### *Market Interventions*

- Cocoon Marketing Centres at the district level for the marketing of cocoons
- Explore the export potentiality for the Handloom products
- National and International market exposure for weavers

### *Financial Intervention*

- Awareness is necessary regarding financial support available for weavers/dyers for the adoption of the latest technological interventions, production of quality and diversified products, different incentives and schemes of Government and private organizations
- Training support for Individual / SHGs (Self Help Groups) / Societies / Entrepreneurs for various post cocoon activities under CDP (Catalytic Development Programme)
- There is a need to explore the possibility of supplying garments and fabric to other States

### *Other Interventions*

- There is a need to support weavers to become entrepreneurs.

## **Objective 12: To develop Strategies for Intervention**

Kamrup Cluster is a vibrant spinning sector in India. People are actively engaged in weaving golden threads. To ensure the confidence of the local population of the Kamrup cluster and to make them aware that the training will improve their productivity and earnings may be a challenging task. A study of cultural sensitivity of the location before any intervention is necessary. The local population may not like any alteration of the Muga fabric or value addition in Muga silk, or other fashion material out of Muga. Such intervention needs some due diligence.

### **Strategies for intervention:What can NGOs do?**

- Strengthen the existing Self-Help Groups (SHGs) by giving the weavers training to upgrade their skills and become entrepreneurs.
- Awareness must be given to weavers about the potential scope of online sales; they can be provided training to open online sellers' accounts with various online sales platforms.
- Integrate the best methods of the dyeing process, linkages with corporate and buying houses, and other micro-skills among weavers, so that they can diversify their income for sustainable income generation.
- Develop a Sustainable Development Strategy for the welfare of all stakeholders.

### **Analysis of Business Operations**

- There is no Union/Association/political bodies of weavers or master weavers.
- There is a lack of market awareness, market analysis, and studies of the weavers' challenges.
- There are hardly any national-level market initiatives to popularise the products of this cluster.
- Impact studies of the previous schemes are not done or not available.
- The requirements of design intervention and up-gradation of looms.

- Training and Development is essential to use modern methods of weaving. The semi-automated or fully automated machine will help the weavers to produce bulk products at an affordable cost. Further, it will decrease their physical workload.

### **Action Plan Needed to Boost the Weaving Sector of Assam**

Collaboration with the private sector and other departments for the development of the Kamrup Cluster could be productive. The table given below depicts some proposed actions, which can be implemented by any organization, individual, government or NGOs. This model will complement the activities of the private sector.

<b>No.</b>	<b>Plan</b>
1	Training in Skilled Weaving
2	Training in Dyeing
3	Training in Marketing
4	Training in online sales and marketing
5	Entrepreneur Development Programme
6	Other micro-skills (other than weaving)
7	Other micro-skills (within the weaving sector)
8	Design Intervention
9	Exposure Visit, Knowledge exchange program
10	Other location weaving training (Like Zari Work)
11	Networking event

### **Conclusion**

The majority of the weavers in India are from Assam, and it has great potential as many skilled workers are available in the state. The present income from weaving ranges from 2461 to 10,000 INR per month. Weavers focus on a single design and produce in bulk. In contrast, in showrooms, the buyers have multiple options to choose from. The earnings of the weavers are very low. There is a high possibility that automated machines will replace the traditional handloom weaving skills in the future, which may have a negative impact with reference to conventional methods of weaving. Over time people may forget the conventional skills of weaving; however, with the demands of the time require that modern methods of weaving need to be incorporated to sustain and survive in competitive markets. On the other hand, traditional clothes manufactured in the advanced looms outside the state of Assam have become a threat to the local markets and local weavers as the products produced using the automated machines are available at a lower price.

## Annexure I

**Table 1.1: The Kamrup District Profile.**

Parameters	Figures
Geographic area (4345 Sq. Km)	4,111 sq. Km
Sub-divisions	Rangia and Guwahati
No of blocks	16
Gaon panchayats	162
Revenue villages	991
Agricultural sub-divisions	Guwahati, Rangia, and Boko
Population (census 2011)	27,77,621
Male	14,35,238
Female	13,42,383
Average literacy Male	84.45 per cent
Average literacy Female	76.76 per cent
Sex Ratio	946 per 1000 male compared to 2001 census figure of 934.

**Table:1.1A: Handloom Census Report**

Sl No.	Details	Census of 2009-10 In	Census of 1995-96 in Lakhs	Census of 1987-88 in Lakhs
1	No of weavers	22.6 lakhs	25.3 lakhs	
1	No of weavers and allied workers	43.32 lakhs	65.51 lakhs	
2	No of weavers and allied workers for NER	15.1 lakhs	14.5 lakhs	
3	No of weavers and allied workers for Assam	14.01 lakhs	11.96 lakhs	17.16 lakhs
4	No of looms	23.77 lakhs	33.87 lakhs	
5	No of looms NER	15.50 lakhs	18.23 lakhs	
6	No of looms Assam	11.12 lakhs	13.22	14.09 lakhs
7	Women Weaver (%)	77.90 percent	60.60 percent	
8	Women Weaver (%) in Assam	99.07 percent	89.71 percent	91.89 percent
9	Man, days per weaver/annum	234 days	197 days	
10	Total days worked by weaver's household during the census year	5,313 lakhs	4977 lakhs	

**Table 1.2: Srihati is in Kamrup District, Taluk Soalkuchi Block.**

Parameters	Status	Year	Women	Men
Active commercial Handloom	13752	2002	54.75 percent	----
Semi-automated fly shuttle handloom	73.78%	2002	X	X
Total Number of weavers.	24500	2010	X	X

Areas of Activity	Muga reeling & Mulberry twisting, Muga & Tasar yarn trading, Mulberry, Muga & Tasar weaving, Mulberry, Muga & Tasar Trading, Design and support service	2010	X	X
Population	14,129	2001	50 percent	50 percent
Literacy rate	82%	2001	X	X
Aged under 6yrs	6%	2001	X	X
District	Kamrup	X	X	X
Taluk	Soalkuchi	X	X	X
Division	Guwahati	X	X	X
Nearest Airport	Lokpriya Gopinath Bordoloi International (35.5 km from LGBI to Sualkuchi)	X	X	X
Nearest Railway Station	Kamakhya Railway Station (30 km. from KRS to Sualkuchi)	X	X	X

**Table 1.3: Special Properties of Muga, Pat, and Eri.**

<b>Muga</b>	It has various unique qualities such as strength, sheen, high resilience, drap ability, anti- flammable, anti-bacterial. Longevity is one of the significant features of Muga Silk. It has got a natural golden luster, and the intensity of the Muga silk increases with age; most importantly, it does not require any dyeing and is compatible with most of the dyes. The Golden Muga Silk can absorb 85.05 per cent Ultra Violet rays of the sun. It is an exceptional as attire and protects from insects bites such as mosquitoes and horseflies, etc. (Gogoi, M., Gogoi, A., & Baruah, B, 2017, January 28).
<b>Pat</b>	Pat silk is odourless, so it becomes a superior material for pillows, and it is hypoallergenic and has natural protein called sericin that reduces allergic reaction in the skin. Pat silk unique fabric can produce garments that do not cause any allergic reaction to the skin surface; special garments can be made for people who have skin allergies due to cloth and face masks.
<b>Eri</b>	Eri silk is antifungal, and it has thermal insulation capacity as wool. So it becomes the most favorable material for baby clothes, undergarments, blankets, quilts and face masks.

**Table 1.4: Srihati is in Kamrup District**

Parameters	Name of the place	Distance
<b>District</b>	Kamrup	X
<b>Taluk</b>	Soalkuchi	X
<b>Division</b>	Guwahati	X
<b>Nearest Airport</b>	Lokpriya Gopinath Bordoloi International	35.5 km from LGBIA to Sualkuchi
<b>Nearest Railway Station</b>	Kamakhya Railway Station	30 km. from KRS to Sualkuchi

**Table 1.5: Distributions of Weavers in Different Blocks Kamrup**

Name of the Block	No. of Clusters	Total Weavers (Approx)
Dimori	12	9594
Rampur	10	26,468
Chayani Barduar	11	14,050
Chaygaon	7	8,764
Boko	10	9772
Kamalpur	12	2175
Hajo	15	13,350
Sualkuchi	8	24500
Rani	8	9535
Bejera	7	5719
Rangia	19	15,440
Chandrapur	4	2195
Garoimari	8	5140
Bongaon	4	4282
Chamaria	15	6523
Bihdia Jajkona	13	7185
Goreswar	12	11,621
<b>Total</b>	<b>175</b>	<b>1,76,313</b>

**Table 1.6: Clusters - Wise Silk Activities in Kamrup District**

Cluster	Areas of Activities
<b>Saukuchi &amp; Hajo</b>	Muga reeling & Mulberry twisting, Muga & Tasar yarn trading, Mulberry, Muga & Tasar weaving, Mulberry, Muga & Tasar Trading, Design and support service
<b>Palashbari, Bijonagar, Rampur, Borduar &amp; Rani</b>	Muga, Eri Cocoon & waste trading, Muga silk reeling & Eri Muga silk spinning, Muga, Eri silk yarn trading, weaving of eri Muga spun silk fabric, trading –eri Muga spun silk fabric
<b>Chaygoan, Bongaon, and Boko</b>	Muga Eri Rearing, trading, Eri Spinning weaving
<b>Guwahati (Kamrup Metro)</b>	Muga Eri seed supply, Mulberry & Tasar Yarn trading, Muga, Eri, Tasar & Mulberry fabric trading, Market Promotion, and Expo Promotion
<b>Rangia Sub Division</b>	Eri Spinning & Weaving

**Table 1.7: Presents the weaving unit classification based on yarn consumption pattern in the Kamrup district**

Block	Cotton & Others	Silk & Cotton	Mainly Eri	Mainly Muga	Mainly Mulberry	Total
Rani	30	10	X	X	X	40
Rampur	16	13	11	X	X	40
Hajo	11	19	X	X	30	60

Kamalpur	38	X	2	X	X	40
Bezera	10	X	X	X	1	11
Bongaon	19	1	X	X	X	20
Saulkuchi	19	4	X	19	18	60
Chayani Bardur	X	40	X	X	X	40
Guwahati	X	2	2	4	8	16
<b>Total</b>	143	89	15	23	57	327

**Table 1.7A: Distribution of Handlooms in Assam State.**

Name of the Dist.	Number of Handlooms
N C Hill , Cachar , Dhubri , Hailakandi	10,000-25,000
Karimganj, Dhemaji, Goalpara, Tinsukia, Sonitpur	25000-50,000
Bongaigaon, Dibrugarh, Golaghat, Karbianglong, Barpeta, Jorhat, Kokrajhar, Kamrup, Lakhimpur, Nalbari, Nagaon, Sibsagar, Morigaon	<b>Above 50,000</b>

**Table 1.8: Number of Handlooms/Weavers (India and Assam): As per Handloom Census 2009-2010**

Parameters	All India	Assam
Number of Handlooms	2377331	1111577
Number of Handloom Weavers	4331876	1643453

**Table 1.9: Golden Muga silk.**

Raw Material	Silkworm	Food needed for the Silkworm	The texture of the silk
Golden Muga Silk	Antheraea assamensis endemic	Som (Machilus bombycina) and Sualu (Litsaea polyantha) leaves	Yellowish-golden tint with a shimmering, glossy texture

**Table 1.10: Pat Silk.**

Raw Material	Silkworm	Food for the Silkworm	The texture of the silk
Pat silk is also known as Mulberry Silk	Bombyx Textor silkworms	Morus alba is also known as Nuni (white Mulberry plant)	Brilliant white or half white.

**Table 1.11: Eri Silk.**

Raw Material	Silkworm	Food needed for the Silkworm	The texture of the silk
Eri silk in the local area known as Endi, errandi silk, "Ahimsa Silk" or "Fabric of peace".	Samia cynthia ricini is also known as endi poka or endi polu.	Castor oil ( <i>Ricinus communis</i> )	Woollen white natural color.



**Table 1.12: Cotton.**

Raw Material	Plant Name	Texture of the
Cotton	Cotton plants genus Gossypium in the mallow family Malvaceae.	Yellowish half white.

**Table 1.12A: Source/ Availability/Cost.**

Raw Material	Source	Availability	Cost
Muga Silk	Saulkuchi & Hajo, Palashbari, Bijonagar, Rampur, Borduar & Rani, Kamrup Metro	Available but limited	Rs. 10,400-50,000 INR/kg
Pat Silk	Saulkuchi & Hajo, Palashbari, Bijonagar, Rampur, Borduar & Rani, Kamrup Metro	Available but limited	2000-4000 INR / kg
Eri Silk	Palashbari, Bijonagar, Rampur, Borduar & Rani, Saulkuchi & Hajo, Kamrup Metro	Available but limited	2300-3500 INR/kg
Cotton	Kamrup Metro, Rampur, Chaygaon, Sualkuchi, Hajo, Bamundi, Baihata Chariali, Goreswar.	Available	70-470 INR/kg

**Table 1.12B: The average consumption of raw materials in percentage for production of Handloom fabric in the State of Assam.**

Approximate Percentage of Use							
Muga Silk	Eri Silk	Mulberry Silk	Cotton	Wool	Acrylic	Polyester	Others
6.27	12.20	7.33	53.00	5.07	9.20	4.87	2-07

**Table 1.13: Price Range of Assam's Handloom Product.**

Material	Mekhela Sador	Saris	Patani	Dokhona	Gamucha( for Neck)	Gamucha (To Wear)	Stole
Muga Silk	5000-50,000	8250-75000	7000-75000	9000-75000	1150-3500	NA	NA
Pat Silk	3800-50,000	5990-50,000	5000-50000	6500-75000	1150-2500	NA	NA
Eri	N/A	N/A	N/A	N/A	N/A	N/A	1500-7000
Cotton	250-2100	650-2300	700-1200	700-1200	50-250	75-350	500-2300

**Table 1.14: Dyeing (Some of the Organic color which is used for dyeing are)**

Plant name (Family)	Colour produced	Kind of garments
Acacia catechu Willd. (Mimosaceae)	Blackish brown	Cotton
Adina cordifolia Benth. & Hook.f. (Rubiaceae)	Yellow	Cotton, Silk
Aegle marmelos Correa ex Roxb. (Rutaceae)	Yellow	Cotton
Albizia odoratissima Benth. (Mimosaceae)	Brick red	Cotton

Ervatamia divaricata (Linn.) Alston (Apocynaceae)	Yellow	Silk
Rubia cordifolia L. (Rubiaceae)	Red	Silk, Cotton, Woollen
Symplocos oxyphylla Wall. (Symplocaceae)	Yellow	Silk
Woodfordia fruticosa Kurz (Lythraceae)	Reddish yellow	Silk

**Table 1.15: Quality Management.**

i. Testing of material	ii. Analysis of result	iii Corrective action according to results from the analysis
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**Table 1.16 Primary Weavers Cooperative Society**

Name of the District	Number of Cooperative Society
Kamrup (Metro)	69 Nos.
Kamrup (Rural)	200 Nos.

**Kiron, M. I. has designed a flow chart on the process.**

**FLOW CHART OF WEAVING**

YARN FROM SPINNING

↓

DOUBLING AND TWISTING

↓

**WINDING**

↓

CREELING

↓

WARPING

↓

SIZING

↓

DRAWING-IN AND DENTING

↓

LOOMING

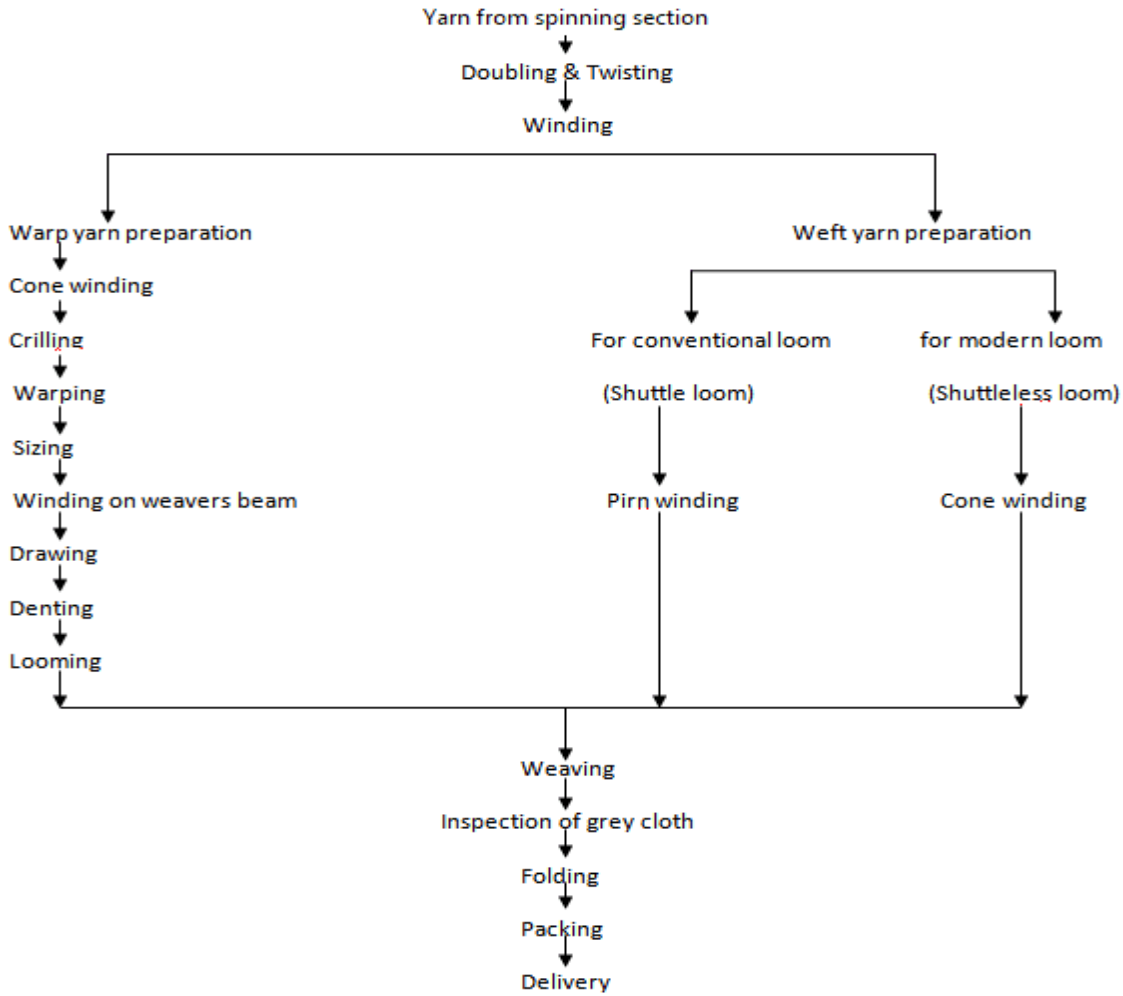
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**WEAVING**

**Complete flowchart of weaving:**



**Fig:** Flowchart of Weaving

**Table 1.17: Fund released for Clusters.**

Year of Sanction	No of Benf. Covered	No of Clusters	Total Project Cost	Central Share	State (IA) share	Fund released
2014-15	19444	92	4307.036	4139.24 lakh INR	402.40 lakh INR	1173.68 lakh INR

**Table 1.18: Fund released for Marketing.**

Year	No. of events sanctioned/organized	Amount released (Rs. In lakh)
2013-14	3 National Level Handloom Expo	58.00
2014-15	11 National Level Handloom Expo	211.50
2015-16	4NHES, 7SHEs, 31 DLEs	320.11

**Table 1.19: Marketing Incentives.**

Year	Amount released (Rs. In lakh)	Weavers covered
2007-08	68.07	1190
2008-09	177.69	200455
2009-10	394.69	266320
2010-11	457.00	301945
2011-12	516.46	304727
2012-13	739.88	361903
2013-14	849.68	354002
<b>Total</b>	<b>3203.47</b>	<b>1790542</b>

**Table 1.20: Marketing and export promotion scheme. (as of June 2017)**

Several events sanctioned/organized under Marketing and Export Promotion Scheme are as under:

Year	No. of events sanctioned/organized	Amount released (Rs. In lakh)
2007-08	36	143.00
2008-09	45	210.00
2009-10	76	411.00
2010-11	82	573.00
2011-12	89	460.00
2012-13	65	348.00
2013-14	32	498.53
2014-15	36	252.00
2015-16	46	105.00
2016-17	14	1.97
<b>Total</b>	<b>541</b>	<b>3002.41</b>

**Table 1.21: Handloom Weavers' Comprehensive Welfare Scheme.**

Year	Weavers covered under Health Insurance Scheme	Weavers covered under Mahatma Gandhi Bunkar Bima Yojana
2007-08	464635	16490
2008-09	445947	64664
2009-10	352124	55291
2010-11	355322	34322
2011-12	387563	54811
2012-13	-	58607
2013-14	387563	58323
2014-15	(30.09.2014) 387563	54627
2015-16	-	61021
2016-17	-	(As of Date 10th July 2017) 67572
<b>Total</b>	<b>2780717</b>	<b>460146</b>

**Table 1.22: Yarn Supply Scheme.**

Year	Quantity (in lakh kg)	Value (Rs. in lakh)
2007-08	0.498	124.01
2008-09	0.506	196.13
2009-10	1.103	351.45
2010-11	0.633	491.68
2011-12	0.658	284.16
2012-13	0.546	315.43
2013-14	1.756	644.47
2014-15	1.405	835.82
2015-16 (up to March, 2016)	1.17	888.105
2016-17 (Upto Feb, 2017)	0.55	741.20
<b>Total</b>	<b>8.575</b>	<b>5202.955</b>

**Table 1.23: Weavers Credit Cards (WCC) –Rupay Card.**

Year	WCC issued	Loan Sanctioned (Rs. in crore) via WCC	Loan Sanctioned (Rs. in crore)
2012-13	960	4.08	2.40
2013-14	4097	12.80	8.83
2014-15	558	1.80	1.80

**Table 1.24: North Eastern Handicrafts and Handlooms Development Corporation Limited funds flow (Rs. in crore)**

Heads of Accounts	Actual 2016-17	BE 2017-18	RE 2017-18	BE 2018-19
Revenue	--	--	--	--
Capital	2.00	2.00	2.00	2.00
<b>Total</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>

**Table 1.25: The losses of the Corporation (North Eastern Handicrafts and Handlooms Development Corporation Limited) reduced over the past years. The details of the Losses are in the table**

Year	2015 -16	2016- 17	2017-18 (Estimated)
Sales (Net)	12.15	14.74	above 19.00
Operating Loss	1.92	1.13	--

**Table 1.26: Training provided by NIFT**

Training Institute	Number of Weavers trained	Budget
NIFT, Kolkatta	300 weavers	Rs. 60 lakhs

**Table 1.27: Schemes**

<b>Name of the Scheme</b>	<b>Features</b>
<b>Aam Aadmi Bima Yojana</b>	Ministry of Finance, Government of India has permitted the merger of Social Security Schemes viz., Aam Admi Bima Yojana (AABY) and Janashree Bima Yojana (JBY).  Now it's known as "Aam Admi Bima Yojana," and it is in effect from 01.01.2013
<b>National Handloom Development Programme (NHDP)</b>	Weavers Package: National Handloom Development Programme (NHDP) to be executed during the XII Plan, as a centrally-sponsored proposal endorsed by the Planning commission merging, with or without modifications.

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