CHAPTER – VII
SUMMARY, FINDINGS AND SUGGESTIONS
7.01. INTRODUCTION

The northeast India, exclusively Assam has been deliberated as the homeland of sericulture. The region prospered with large diversity of flora & fauna, is conducive for the breeding of many silk producing worms. Because of favorable environment and climate conditions, Assam, only state in India, which produces all four commercial varieties of silk, viz. mulberry, muga, eri and tassar. (Choudhury, 1984)\(^1\). Sericulture is practiced mostly by the rural families belongs to Tai Ahom communities, as a part of their life & culture, a primary as well subsidiary income source that requires smallest investment but give a high and swift return and provide employment opportunities, as the trade is highly labour intensive (Sharma, 1989)\(^2\).

As definite and reliable contemporary historical accounts are not present, different views and inferences regarding the origin of muga culture in Assam have been drawn by different archaeologists and historians. Some of the scholars’ assertion is that the Indians learn the art of silk culture from the Chinese migrants. As the silk industry in Assam was largely confined to the Tibeto-Burman elements in the past, it is not very sure that the Chinese migration to Assam had introduced silk art & craft. The inhabitants of North East India, particularly belonging to Tibeto-Burman and Indo-Mongoldoid Tribe, are well versed with the art of producing silk. They have successfully rearing muga worms to get dazzling and expensive silk fabrics in one hand and proteinous dishes from the larvae and pupae in the other. The silk industry of Assam has flourished and grown lips and bound during the Ahom regime (1228-1828) due to the royal patronage and keen interest by the ruling kings. Ahom kings also encouraged the trades of silk thread & fabrics at foreign markets. Muga silk was the principal articles exported to Bengal, Bhutan and neighboring hill districts of 'Khasi' & 'Garo'. Captain Welsh Report on Assam in 1794 described that the British Govt. had signed a treaty for trade and commerce between Assam and Bengal with King Gaurinath Singha (1780-1795) in 1793, which included the export of muga silk (Baruah, 1969\(^3\), Bhuyan, 1964\(^4\), Borpujari, 1990\(^5\)).

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\(^3\) Barua, B.K., (1969), *Cultural History of Assam (Early period)*, Guwahati, 1969.
\(^4\) Bhuyan, S.K., (1964), *Satsari Assam Buranji*, (ed), Guwahati, 1964
Ahom period is considered as the ‘golden period for muga culture’. The culture had flourished and prospered to become a part of social and economic life of the Assamese people. Due to massive collaboration and initiative from Ahom kings, the rearers, reelers & weavers became skillful and the silk industry grew swiftly. Sibsagar, which was the capital of Ahom kingdom and its neighboring areas, became the centre of production of all varieties of silk and there was hardly a house without looms in Sibsagar District (Gogoi, 1994).

The silk industry under British regime was disconsolate. During the British rule, there was no substantial progress in silk industries due to their colonial interest to market the Lancashire and Manchester products. To quote W.W. Hunter, “the decrease of silk production during British period owing to the attraction of labour to Tea Gardens, increase supply of European cotton and woolen fabrics in the market”. Even ‘soam’ plantation areas were taxed during the English regime. Onus on the expansion of Tea Gardens had reduced the Muga feed-plants plantation areas substantially and population of wild-muga silkworms. The Assamese silk industry had faced cut throat competition from the English and Chinese mills making artificial cheap silk and cotton cloths during the British period and afterwards, respectively (Allen et.al, 1984; Martin, 1976; Robinson, 1975; Watt, 1907). In such adversarial situation, Assam's silk industry had not lost its past splendid, exclusive and inimitable position in respect of indigenous silk, muga. Till today, the muga Silk industry had a place of pride in the socio-economic and cultural life of rural Assam (Rajguru, 1988).

The indigenous knowledge and skill of muga culture was put to the test of commercialisation; and innovative designs and tools make a hybridization of the efforts to make the silk culture a livelihood option for the rural muga rearers, farmers and weavers in the state of Assam, especially in the district of Lakhimpur. At present, the business of muga, the golden silk, is worth of Rs 200 crore. With proper organization, the industry could grow up to 10 times of its current size. There are around 9500 sericulture villages

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8 Martin, M. (1976), Eastern India, Delhi, 1976
9 Robinson, W. (1975), Descriptive Account of Assam, Delhi, 1975
10 Watt, G. (1907), Economic products in India, Calcutta, 1907.
producing *muga, eri* and mulberry silk in the state of Assam and Sualkuchi and the upper Assam regions being the hub of the industry (Dasgupta, 1982\(^{12}\); Devsharma, 1977\(^{13}\)). There is a bright prospect of *muga* silk industry of Assam as the demand for natural fiber has grown considerably in the global market. The durability and elegant lustrous natural colour is the strength of *muga* silk fiber. Therefore, there is every possibility to explore the national and international market by developing the production base of *muga* raw silk.

While tapping the full potential of commercialisation of the *muga* culture is a challenge in itself, the entailing problems of developing entrepreneurship among the rural population of Assam, providing all means to achieve the fully marketization of the indigenous knowledge and skill etc. are major stumbling blocks for the state. To be in a position to analyse and understand the system, its pros and cons, there is a need for a holistic approach which gathers a wholesome understanding of the current scenario, the factors which instrumentalised such a setting, their long term intentions and their de facto outcomes. This then paves way for strategically positioning the situation and analysing the way forward for addressing the unwanted by-products of full-scale commercialisation. The rapid rise of poverty in the recent past has made it imperative to make concerted efforts to enhance the livelihood options for the poor masses, by enabling them to the contemporary technology and education, which are very much align to them. The multidimensional nature of poverty in Assam calls for a paradigm shift in the approach to its reduction e.g., from ‘transformational’ approach to ‘hybridization’ approach, which calls for a different strategy and that should be appropriately targeted. That involves indigenous knowledge, innovation in design and process, dissemination of developed knowledge, and community participation while providing an alternative livelihood option for the poor, especially when the agrarian livelihood failed in the State of Assam.

Last but not the least, complete rejection of modernists' knowledge paradigm in the situation where outside suggestions are essential without which the promotion or coordination for sustainable development of the livelihood of indigenous communities will be difficult task. Hence, the idea of modernity can be useful in a non-dominant manner to earn positive results in the process of development.

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\(^{12}\) Dasgupta, R., (1982), *Art of Mediavel Assam*, New Delhi, 1982  
\(^{13}\) Devasarma, R.K., et.al. (1977), *Kautilyar Arthasastra*, Guwahati, 1977
With above backdrop, through the present research, an attempt has been made to analyze the process of commercialisation of the indigenous knowledge and skill among the *muga* weaving communities for the development of livelihood in the state of Assam and to suggest policy recommendations to make these commercialisation process more sustainable for livelihood development; and to make the empowerment of the indigenous communities a success. The underlying objectives behind the study are as follows:

1) To appraise the process of the acquisition, development and dissemination of indigenous knowledge among the *muga* farmers in the state of Assam.

2) To study the socio-economic conditions and livelihood patterns of the respondents drawn from North Lakhimpur district of Assam along with tracing out the indigenous knowledge system present in the study area.

3) To study the prospect and potentiality of commercialization process of indigenous knowledge with respect to the *muga* Silk.

4) To study the impact of commercialization of the indigenous knowledge in empowering of *muga* silk weavers in the study area.

5) To suggest some policy measures for a sustainable development of present scenario of commercialization process of indigenous knowledge in Assam.

The present study is based on the following null hypothesis:

1) $H_0$: *In the adverse market and environmental conditions, indigenous system of knowledge and economy have no significant potentiality and viability in providing a self-sustained livelihood for the respondents.*

2) $H_0$: *Commercialization of indigenous knowledge has no significant impact on the empowerment of indigenous people in Lakhimpur district of Assam.*

The research work was analytical and descriptive in nature devoted in tracing out the present state of affairs of commercialization of indigenous knowledge and its impact on the development of livelihood of the indigenous people living in upper Assam. The Lakhimpur District of Upper Assam was selected as the areas of study for the reason that till recent times, *muga* silk production was quite common rural cottage industry in the Lakhimpur district. Majority of the *muga* silk activities are carried by the *Tai-Ahom*
communities which are mostly found in the Lakhimpur district of Assam. The following research methodology was adopted for the study:

1. Area of study: Lakhimpur District of Assam
3. Target group: *Muga* silk farmers and weavers, Middlemen in the distribution channel, Officials of the Silk and Sericulture Board, Local people and customers.
4. Sources of Data
   a. Secondary sources: Reports, books, journals and internet sources.
   b. Primary Sources: Data had been collected through a schedule. The schedule was administered over the target groups after it was pilot tested in the study area. Data were also collected through focus group discussion, interviews and personal observations.
5. Samples and Sampling: For the present study the data were be mainly collected through primary survey by interviewing the respondents and also through observation and schedule method. A sample of 200 respondents selected randomly and as per convenience, was drawn from Lakhimpur district. Out of 200 sample *muga* silkworm rearers (*Muga sungia*) of Lakhimpur, 75 % of household (150) are from Tai-Ahom communities and the remaining is from Kachari, Chutia, Koch, Kalita, Jogi and other communities of Assam. It was also found that Tai-Ahom rearers are well acquainted in reeling, weaving of *muga* fabrics. 95% of the rearers are found as commercial reeler and weaver, 5% of the rearers reel and weave for domestic purposes and all most all the rearers sale their cocoons soon after the harvesting. All the rearers use traditional appliances made of bamboo and biological method to control pest and predators during rearing period. Cocoonage (*Jali*) made of dry leaves, *Khorika* (a stick-like bundle of straw or culms), bamboo tray of different size and design called *chandali, chalani*, bamboo *pera* (cocoon cage) for collection & storage of cocoons, bow (*dhenu*), clay pellets (*batalu guti*), *Khurung* (basket for keeping clay pellets), etc. are different types of traditional appliances used by traditional rearers in rearing.
6. Tools used for Analysis: The collected data were analysed through various statistical tools as well common accounting procedures were undertaken for calculation of cost and benefits. Triangulation analysis was also undertaken to derive various conclusions, scientifically.
7.02. SUMMARY OF THE STUDY

The present study, being an interdisciplinary analysis, has concerted on a wide range of issues in addition to different perspectives with conceptual and theoretical foundations. The contemporary research concerns being examined in the context of sustainable livelihood through commercialization of indigenous knowledge and skill. To be specific and precise, a wide range of literature has been reviewed pertaining to indigenous knowledge system, resource management, protection of indigenous knowledge literature related to government policies, and development and dissemination of indigenous knowledge. Further the literatures which were found relevant to the research issues from different perspectives having direct or referral significance on our understanding of topical and thematic dimension of the present study. But we have reviewed relevant literatures only thematically either as passing reference or in some details depending on the certainty of the issues addressed in the literature while reviewing edited volume of an individual papers have been discussed in details in the second chapter and the following inferences were drawn:

1. Although the studies cited in the Chapter – II are informative and insightful, they are not free from research gaps. The facets covers in their studies are exclusive. They are not systematically interlinking from multi-dimensional perspectives to every aspects of indigenous societies for the study of their livelihood. To study the livelihood of indigenous communities many scholars have concentrated on economic or material aspects exclusively by ignoring the role of non-material or psycho-cultural aspects. The uniqueness of indigenous societies in contrast to the mainstream societies is that all the aspects of their life are controlled and guided by the supernatural agencies, hence functions interactively; therefore, while studying and assessing the livelihood of indigenous population the integrative analysis of supernatural or non-technical aspects of the community must be taken into consideration.

2. Second, many scholars is in favor of that indigenous knowledge system as the most viable substitute for the development of indigenous people. But they disregard to evaluate the present position of indigenous knowledge and its significance in present socio-political and ecological conditions which needs to be given emphasis in this study. Many of them overemphasis the relationship between people and forests based
on the historical facts by ignoring the. Present conditions of forest and natural resources. Last but not the least, complete rejection of modernists' knowledge paradigm in the situation where outside suggestions are essential without which the promotion or coordination for sustainable development of the livelihood of indigenous communities will be a difficult task. Hence, the idea of modernity can be useful in a non-dominant manner to earn positive results in the process of development.

Chapter – III deals with the issues of origin, development, and dissemination of indigenous knowledge of muga silk weavers of Assam. Traditionally, sericulture is a major source of livelihood in the state of Assam. Sericulture has been practiced in Assam from time immemorial and continues to be an important labor-intensive and agro-based cottage industry. It provides a productive employment to 2.50 lakh person in rural and semi-urban areas of Assam. Out of this, a sizeable number belong to the economically weaker section or deprived classes of the society, and women. Moreover, sericulture is a sustainable farm-based economic enterprise positively favoring the rural poor in the un-organized sector because of its relatively low requirement of fixed capital and higher returns on investment. The State of Assam is proud of traditionally for producing muga, eri, and mulberry and lastly the oak tassar in the hills districts. The State accounts for the highest production of non-mulberry silk, muga, and eri in the country.

Assam has the monopoly in the world in the manufacture of Muga; the “Golden Silk,” as more than 97% of muga Silk is produced in Assam. Assam has also achieved the right of ‘Geographical Indication’ for muga thread. The State is a major producer of eri silk (about 65%). This industry has undergone a number of changes with the changes in loom, fabric, design, technology, etc. Silk culture is practiced in 38000 Assamese villages at present and provides employment to 9.5 lakh households, till 2015-16. During 2014-15, there were 19.48 lakh weavers in the State out of which 15.30 lakh were part-time weavers and 4.18 lakh whole time weavers. The number of Handloom circle were 221, and 14273 numbers of villages were covered under the activity. During the year 2014-15, under Centrally Sponsored Schemes, 56354 numbers of weavers were covered under the Health Insurance and 4034 weavers were given Weavers Credit Cards.

1. Assam enjoys almost an exclusive monopoly of muga production. Of the aggregate production of 11,000 million kg of muga silk produced in the country, Assam accounts
for 9,700 million kg, constituting about 94 percent. The rearing-region of muga silkworm is mainly confined to the Brahmaputra valley of Assam and foothills of Meghalaya. The wild varieties of silkworms found in the western Himalayas to Nagaland, Cachar district of Assam and south valleys of Kumaon and Kangra in the west Himalayan hill range. However, commercial production of muga silkworm delimits to north-eastern regions due to suitable climatic zone.

2. Weaving is the ‘must-know’ skill for the Ahom girls; particularly, reeling, spinning, and weaving of silk. The Tai-Ahom women wear mekhela chadar, cheleng-chadar and riha (breast cloth) woven with muga, mulberry silk or any other materials. Chadar is the upper garment, and the lower garment is called mekhela. A blouse is also worn them. The traditional attire of men folk is jaama / kurta or shirt and dhoti, the bottom garment. They also wear gold, silver and bronze ornaments (Jonbiri, dholbiri, dugdugi, jang-phai, keru, lokapar, chandhar, silikhamoni, etc.) according to their status.

3. In one year, six overlapping cocoon crops can be harvested viz. Jarua, Jethua, Akharua, Bhodia, Kotia and Aghania. The farmers can rear minimum two broods of each silkworm in a year as the life cycle of the worms is about 44 to 85 days in summer and 81 to 85 days in winter. In a suitable condition, maximum production of muga silk yarn would be 9-10 kg per hectar in one rearing-cycle.

4. The sampled muga silkworm rearers (muga sungia) under study are basically from tai-ahom, kachari, chutia, koch, kalita, and jogi communities of Assam. It was found that tai-ahom rearers are well acquainted in reeling, weaving of muga fabrics; and the community instrumental for the dissemination of the knowledge of muga rearing & weaving. Some of them are found as commercial reeler and weaver; and others reel and weave for domestic purposes. Some of the rearers sale their cocoons soon after harvesting. However, all the respondents use traditional tools and appliances made of bamboo and natural products; and biological method to control pest and predators during rearing period. Cocoonage (Jali) made of dry leaves, khorika (a stick-like bundle of straw or culms), bamboo tray of different size and design called chandali, chalani, bamboo pera (cocoon cage) for collection & storage of cocoons, dhenu (bow) , batalu giti (clay pellets), khurung (basket for keeping clay pellets), etc. are different types of traditional appliances used by traditional farmers in rearing.

5. The observations made during the ethnobotanical studies among the Tai Ahoms of upper Assam with respect to the traditional knowledge, innovations, practices and beliefs associated with the rearing of muga silkworms, spinning and dyeing of yarn,
weaving, and other activities involved in the industry are categorised under the following heads:

a. Traditional implements and tools used for rearing the worm
b. Materials used during the rearing of worm
c. Biological control of predators and other associated aspects
d. Beliefs and Associated Practices:
e. Traditional spinning and weaving implements and method of dyeing the yarn

6. Since long past, muga culture was recognized as one of the most promising venture for development of socio-economic condition of the rural populace in Assam. The culture involves various indigenous practices and beliefs, varies from one location to another and also believed to be effective in production system. These indigenous knowledge and skills are also need to understand thoroughly, critically validate and document in different form using the modern techniques so as to integrate the best ones into the sustainable livelihood system to reduce dependence on external inputs, cost of production and make the culture eco-friendly. Incorporating indigenous knowledge into R&D agenda, production of muga raw silk can be increased which in turn help to earn more income by the farmers in the coming days.

The socio-economic profile of the study areas and the respondents were described in the Chapter – IV. The chapter covers geographical, administrative, demographic, social and economic profile of the Lakhimpur district. Lakhimpur, one of the biggest district in upper Assam, still striving to be developed with apposite infrastructural facilities and with prospects for various employment potentiality. The district lacks the basic facilities like health, good educational institutions and absence of skill development institutes to train educated youth to be skillful, proper sanitation, and well developed drainage system. The negligence and nonchalance attitude of the administrators towards developing the basic civic-facilities is the conspicuous problems of the district. On the other hand, the nature’s fury, frequent floods during monsoons, non-availability and disruption of connectivity during monsoon is also affecting the growth of district. Unemployment and poverty are the twin socio-economic challenges which the district still needs to overcome. Lakhimpur has an immense potential to develop the traditional small and rural cottage industries like muga cultivation and other activities involved with muga. Muga, which is highly labor intensive and less capital intensive in nature with highly rewarding investment, can be a good source of employment and livelihood for the educated youth and can help them to
overcome the challenges of unemployment; and eradicate poverty in the district and improve the social-economic status of the society. Moreover, Dhakuwakhana and Ghilamara has been designated as “muga zone” by Indian Council of Agricultural Research (ICAR) which will boost the muga cultivation, and other subsidiary and complementary businesses involved with muga.

The cross-tab analysis of the demographic data collected during 2016 from 200 muga silk weavers in Lakhimpur District, following inferences can be drawn about the population:

1. With respect to community and caste of the muga silk weavers as expected, majority of the silk weavers belong to OBC category and ST category, who has a very old antecedent. Thus, it may be proved from the history and various researcher that these respondents belong to tao-ahom, chutia, bodo, kachari and missing caste, has taken up a livelihood which depends on their age old tradition and indigenous knowledge and skill.

2. The muga sector is also attracted the women to undertake this activity as an option for livelihood. Particularly, some of the women respondents who are either widows or separated have started this business as they took the burden of the household.

3. Most of silk weavers are by faith Hindu. They follow Hindu rituals and follow Hindu tradition and customs. Very few silk weavers belong is Christian and Muslim religions. The Christian weavers belongs to ST communities and being converted due to some reasons. The Muslim weavers are generally migrated from Bangladesh, settled in Assam during the 11th Century and adopted the age-old traditional weaving activities.

4. Most of the muga silk weavers have good economic status as the silk business provided them a good return and belong to APL category.

5. Most of the muga silk weavers have educational qualification up to Intermediate. It is found that most of the OBC respondents have higher qualifications but the ST respondents are school or college dropouts. This statistics provided a conclusion that due to non-availability of government services or other official jobs, the OBC respondents opt for their traditional livelihood options, whereas ST respondents have no other options for livelihood which leads to adaptation of the traditional livelihood option.
6. Majority of the respondents are living in nucleus family with wife and children, in some cases aged parents who also give their time in muga activities. In cases of the Muslim respondents, all most all have a bigger family, particularly more than 5 /6 children and most of them belongs to BPL categories.

7. Every respondents, other than a few, have the muga silk activities as the primary or secondary occupations. The respondents basically whose secondary occupation is related to muga silk, either engaged in govt. services or agriculture or animal husbandry as their primary occupation. This statistics shows that the people hailing from these area are reluctant to forget their traditional culture, knowledge and skill.

The null hypothesis $H_0$: Despite adverse market and environmental conditions, indigenous system of knowledge and economy don’t have significant potentiality and viability in providing self-sustained livelihood for the respondents, was tested in the chapter – V. Thus, to analyse the prospects and viability of muga silk cultivation as a livelihood option in Lakhimpur District through the following analysis and studies:

   a. Study of Innovations undertaken
   b. Key Functional Parameter Analysis (KFPA)
   c. SWOT Analysis
   d. Cost-Benefit and Value Chain Analysis
   e. Analysis of Future Prospects
   f. Viability Analysis

The study of the above 5 aspects provided the following inferences:

1. Innovations which are happening in the muga textile sector are helping in increasing the efficiency of operations, developing specialized products, bringing technical up-gradation in the industry and improving the life of workers. Innovations, found during the field study, may be categorised as follows:
   a. Product
   b. Process and Technology
   c. Machinery and Raw Materials used
   d. Marketing and Distribution

2. Analysis of key functional parameter is important because it is useful, or critical, when identifying the system, or when evaluating its performance, status, condition, and so forth of the business enterprise. The KFPA provided an indication of growth
in the *muga* culture among the respondents of the Lakhimpur District. The inferences drawn are:

a. During 1990-2000 only 18 (9.00%) respondents out of 200 had entered into the *muga* cultivation. 141 (70.50%) of the respondents have entered this business during 2000-2010. 115 (57.5%) respondents hailing from OBC and 26 (13%) of ST community had entered into the business in the same period, which depicts that more people are getting attracted towards the *muga* culture early part of 20th century due to lack of job in the government sectors and due to reduction of political turmoil in Upper Assam.

b. 57.50% of the respondents have chosen *muga* cultivation as it is a profitable venture. While 46% of the respondents have chosen *muga* cultivation due to an alternative source of income, 26% have chosen for self-employment, and 13% for culture and tradition.

c. It is revealed that the respondents have procured their seed money partially from different sources. Majority of the respondents used more than one sources have used their own capital and in case of any short-fall they got the amount from their relatives and household, and indigenous money lender. All the respondents have used informal sources in procuring their seed capital only, not from any formal sources. The average initial capital invested is Rs. 20839 and the maximum amount invested is Rs. 29000 and the minimum is Rs. 2000. This indicated that the *muga* silk business is a labour intensive business, not capital intensive.

d. Same in the case of initial capital, it is found from the survey that respondents don’t use formal source to fund their working capital needs, as they depend on the personal and household sources, as well the business profit and used the money from friends & relatives.

e. As *muga* cultivation does not require sophisticated machinery so fixed assets can be financed by own and internal sources and do not require other formal financial sources to fund their fixed asset. The solvency and liquidity position of the business are excellent, in many units.

f. It is found from the survey that 73 (36.50%) respondents have acquired the land for *muga* silk cultivation, and 127 (63.50%) of the interviewees have inherited land from their parents. *Muga* cultivation does not require huge area of land for plantation of *Soam* trees on which the silkworm feed.
g. Majority of the respondents availed various non-monetary benefits from the
government initiations, with respect to technical guidance. Various non-
financial assistances in the form of training, technical guidance, workshop,
symposium, seeds free of costs etc. obtained from the various sources,
governmental and non-governmental. It is found from the survey that most
of the respondents receive non-financial assistance from other sources such
as veteran and aged persons from the family, educational institutions,
NABARD etc.

h. The field study reveals that sampled muga silk weavers employ three kinds
of worker viz. skilled, semi-skilled and unskilled and source of this
manpower is family, village people and outsiders of the localities.

i. From the production figures of the respondents in last six FYs, it is
concluded that a steady production growth was registered, and sustenance
was achieved in the production of various outputs by the respondents for
their livelihood

j. Even though the profit is not growing at a progressive and faster rate, the
return on investment is ranging from 14.56% to 19.78% with an overall
average of 18.36% which is quite impressive for any small scale
organisations. Due to controlling the current liabilities, the respondents
make a head way to stabilise these two parameters. The most important
factor is that these two ratios are growing at a constant rate.

k. The respondents sell three types of products, viz., seeds, cocoons and
garments. They sell it to various buyers starting from the buyers from their
localities to the international users.

l. Two levels of marketing distribution channels are being used by the
weavers to sell their produces; one at household level or at the individual
level and the other is at cooperative level, where a group of weavers comes
together for mutual help and cooperation.

m. The respondents generally use either permanent, temporary shops or part
of their own house for the storage facility. Due to lack of specialized storage
facilities, the wastages happened due to rat and white ant menace, and
fungal damage due to sloppy and rainy weather conditions. With respect to
the transportation, most of the respondents have used local buses, jeep, car
and auto rickshaw as a mode of transport to move the finished products,
particularly garments etc., from the production center to the point of sale. Some respondents use motor bike, bicycle and rickshaw as a mode of transport for transporting the finished product.

n. No Scientific labelling and packaging methods found in the survey.

o. It is found from the survey that most of the interviewees 191 (95.50%) use value based and cost-based pricing method by taking account all the expenses incurred in producing the goods and add certain percentage of profit to it. The other pricing methods used are follow the leader pricing (02 respondents, 1.00%), spot pricing (01 respondent, 0.50%) and going rate pricing and transfer pricing (06 respondents, 3.00%).

p. Only 3 (1.50%) respondents have received the silk mark status for producing goods according to the norms laid down by the Central Silk Board

3. It is found from the Cost-Benefit analysis that per hectare annual gross cost of muga rearing in Lakhimpur district is Rs. 8,70,000 but the real cost is Rs. 2,78,190 as the imputed labour cost, opportunity cost and depreciation charges are omitted. The average revenue is Rs. 11,23,659 annually, which provided a profit of Rs. 2,53,659 where the imputed cost is taken into account and Rs.8,45,469 after taking the cost minus imputed cost. So in the former case the ROI is 29.16% which is quite high for any kind of small scale production houses. It is also seen that both the gross return and net return is positive and net return decreases with the addition of gross cost in muga rearing. Thus the earning of muga rearing in the study area is remunerative compare to other conventional crops in the study area and the study suggest to develop the silk industry as an instrument of rural development.

4. Value addition is calculated based on one square meter of high-end silk fabric produced by the muga weavers, on the basis of simple home supply chain and the foreign consideration is added up in latter stages. The value addition for the muga rearers is 30.23% ( Rs. 13 over Rs.43, 30.23%), for reelers and dyers is Rs. 28 (50%), for handloom weavers Rs. 235 (279.80%), for home textile producers Rs. 207 (64.89%), for exporters Rs. 342 (65.02%), and that of for foreign retailers is Rs.2170 (250%). Further, the rearers (1.56%), reelers and dyers (3.39%) add less than 5% of the value per square meter of the muga silk apparel they produced, while handloom weavers, home textile producers and exporters contribute 28.46%, 25.10% and 41.49% respectively. The causes of not including the foreign retailers
in the chain is to provide the information about the value each of the domestic actors is retaining, in a more precise way. Considering the home portion of the channel, the domestic middleman (home textile producers and exporters) controls the majority portion of the value added, i.e., 67%. Thus the marketing channel is dominated by the middlemen.

5. In contrast to the foreign market, the value addition for the muga rearers is 30.23% (Rs. 13 over Rs.43, 30.23%), for reelers and dyers is Rs. 17 (30.36%), for handloom weavers Rs. 131 (179.50%), for home textile producers Rs. 61 (29.90%), for wholesalers Rs. 79 (29.81%), and that of for retailers is Rs.275 (79.94%). Further, the rearers (2.23%), reelers and dyers (2.90%) add only 5.13% of the value per square meter of the muga silk apparel they produced, while handloom weavers, home textile producers, wholesalers and retailers contribute 22.74%, 10.60%, 13.78% and 47.75% respectively. Considering the channel, the domestic middleman (home textile producers, wholesalers and retailers) controls the majority portion of the value added, i.e., 72.13%. Thus the marketing channel is dominated by the middlemen. Compared to export silk home textiles, producers of domestic silk control a smaller portion (11% of the value added). Retailers control a majority portion of 48% of the value added. Wholesalers and retailers make up more than 60% of the value added in the domestic market. Thus, the producers and weavers are marginalized with respect to the value addition in the market.

6. To study the viability of the muga silk rearing and culture of Lakhimpur district, triangulation methodology had been adopted. Scores have been given for respective group of respondents based on the five major parameters taken for the triangulation. Then the total point for each group of response is calculated summing of all scores it received across all the parameters taken for the study of viability of the muga silk culture, which are – Availability of critical mass which includes all factors of production, Potential of the artisan growth with respect to the skill and technology, Livelihood dependency of artisans on the craft, Market potential of the craft, and Status of basic infrastructure, which includes roads, road connectivity, CFCs, electricity connection and other basic facilities like medical, education etc. The inference outline indicated that the status of the basic infrastructure like, road connectivity, power, water facilities, research and innovation, marketing facilities etc. is an area of concern for the development and growth of the weavers. Though the availability of the critical raw materials and the
market demand shows a higher figures (more than 7 points) as well the dependency of the artisans for livelihood shows a 6.4 points in average, the hindrance for the development and growth is the basic infrastructural facilities. As the total average score of trade viability is 33 out of 50 which is more than 60%, the muga silk activities is very much viable for weavers of Lakhimpur district.

Thus, from the above analysis, it is concluded that muga silk industry in Assam has a bright prospect for development of rural livelihood, provided the State Govt., announces a policy decision in this regard. Thus, the null hypothesis set forth for the analysis is rejected and the alternative hypothesis, $H_1$: Despite adverse market and environmental conditions, indigenous system of knowledge and economy have significant potentiality and viability in providing self-sustained livelihood for the respondents”, is accepted With grand reputation and heroic rich heritage and a bright prospect for future development, golden muga silk industry of Assam at present is undulating with uncertainty and is under high threat of decline and extinction.

With respect to the problems and constraints faced by the respondents, the researcher had collected data through the questionnaires schedules and focus group discussion with the stakeholders. The triangulation analysis, descriptive analysis and chi-square test, undertaken thereafter, have provided the following inferences:

1. The major causes for not using the formal sources of finance are “indifferent attitude for a loan by the bank”, and “demand security or mortgage”. With respect to the other factors which restarints the respondents to use the informal sources of capital are - Poor banking outreach, Indifferent attitude of the government staff for loan, technology, lot of time for paperwork and documentation, delay in disbursing loan and hidden charges like bribery in cash or kind.

2. It was found that homogeneous responses were traced out through FGDs, in connection to the problems faced with respect to the with respect to production and human resource management. The responses are univocal for the problems, shortlisted as, absence of modern technique of production, land ownership problem as many have no legal documents, problems during procurement of raw materials due to price fluctuations and unavailability, absence of proper transportation system, scarcity of labor, productivity affected due to wastage of raw materials during handling, productivity affected due to customers preference change, inflow
of cheaper products from other states, and demand-supply gap. The workers are
generally semi-skilled and with lesser formal education which provides a
bottleneck during upgradation of skill and technology.

3. The variables like lower price of finished product, absence of proper connectivity,
negligence of government in developing this sector, loss due to poor packaging,
negative attitude of future generation towards muga culture, inadequate share of
profit due to long distribution channel and lack of adequate insurance products
affects the business the hardest.

4. With respects to other variables like which lack of profit for covering cost, damage
of raw material during transportation, absence of proper standardization and
pricing mechanism, lack of storage facilities, absence of proper warehouses &
storage facilities, no scientific pricing approaches, absence of advertisement and
publicity mechanism, ill-informed customers, and absence of stringent policies to
tackle dumping hard to manage with difficulties, in the recent years.

5. In any economic activity, there is an impact which provides direction for the further
attainment of goal and implication for betterment cultivation of muga being a small
cottage industry has a strong influence on rural economy and Livelihood on the
rural areas. The diversification of rural economic activities is not only affected the
livelihood pattern but also impact on the traditional structure of the rural economy.
The present Empowerment of Indigenous people through commercialization of
Indigenous Knowledge, A study of muga silk weavers of Assam in Lakhimpur
district. This pull base economic activity undertaken by the muga weavers has been
leveraging the rural livelihood development. Chapter – VI deals with the impact
analysis of the commercialization of Indigenous Knowledge. Accordingly, the
primary data were collected from two blocks namely Dhakuwakhana Block and
Ghilamara Block and from four villages belonging to these blocks where the muga
weavers are evenly distributed in Lakhimpur district. There are nine development
blocks in Lakhimpur district of Assam namely, Narayanpur, Bihpuria, Karunabari,
Nowboicha, Telahi, Lakhimpur, Baginadi, Ghilamara and Dhakuakhana only two
blocks had been selected out of nine blocks, as per convenience. Interview
schedules were designed to collect primary data. Descriptive and comparative
analysis were made for analysis of the data collected. After the analysis, the
following second hypothesis was tested for drawing inference -
**H$_0$: Commercialization of indigenous knowledge has no significant impact on the empowerment of indigenous people in Lakhimpur district of Assam.**

The study sought to track the existence of and identify the relationships between the empowerment attributes (economic, social, psychological and political) and muga weaver’s empowerment, in order to analyze the differences in the attributes. Firstly, the data was collected from 200 respondents for two periods (FY 2011-12 and 2015-16) and put to various statistical tests like descriptive test, ANOVA and correlation to find out the change in these five years are statistically significant or not. The second part of the analysis was taken up to find out the intergroup relationship between the four impacted factors, economic, social, psychological and political, through the commercialization of indigenous knowledge. The result from the above analysis are stated below:

1. The null hypothesis, “**H$_0$: Commercialization of indigenous knowledge has no significant impact on the economic empowerment of indigenous muga cultivating people in Lakhimpur district of Assam.**” was rejected and the alternative hypothesis was accepted i.e., Commercialization of indigenous knowledge and skill has a positive impact on the economic empowerment (of indigenous muga cultivating people in Lakhimpur district of Assam. The factors viz., income of the self, income of the HHs, income from muga cultivation and income from other sources shows a positive change over the years which are statistically significant.

2. As expected the income growth leads to better lifestyle which has been reflected in expenditure pattern and savings of the respondents. The descriptive statistics and the ANOVA had proved that the change in the amount of expenditure for food, housing, medical and health, and asset creation etc. As expected the correlation between the income and expenditure on food, housing and child’s education shows a positive and significant relationship. The diversification of income is also found during the study.

3. The change in average annual savings from 2011-12 to 2015-16 among the muga weavers is statistically significant. The changes in all income levels in deflated price also found to be statistically significant, during the same period.

4. The changes found, during the FY 2011-12 and 2015-16, in the creation of employment opportunities for self (+28.95%), members of HHs (+43.09%) and for other members is statistically significant.
5. The dependency on the strategy to handle future financial shock—“selling asset” has been reduced to 3.24% and dependency on the strategies like loans from Informal sources (i.e. 30.28%), using business profit (30.09%) and loans from relatives (24.81%) become the major recourse.

6. The changes in earning capabilities lead to higher contribution to the HH which has been significant. And the HHs had recognized the financial contribution of the muga weaver’s in the bigger and larger ways.

7. A statistically significant change had happened with respect to the degree of participation of the muga weaver’s in the financial decisions of the HHs and with an increase in the prestige in the HHs and in the neighborhood. A significant change happened in the participative characteristics of the muga weavers due to commercialization, like participation in social functions, mass protest. The respondents have experienced a statistically significant change in the Dominance and Harassment, and Domestic Violence. The increase in the economic power through commercialization leads to a significant change in mobility of the muga weavers and social contributions. Maintenance of the accounts for the business are found to be statistically no significant. Thus the null hypothesis, “Ho: Commercialization of indigenous has no impact over the Social Empowerment of muga weavers” has been rejected and the alternative hypothesis is accepted i.e., commercialization has impacted positively on the social life of the muga weavers.

8. The muga respondents also now recognize their potentiality of being a respectable part of the community, particularly in their village. Some of them are also being elected as the Gram Panchayat Members and Sarpanch also. When the status of the muga weavers was compared before and after the muga weavers’ interventions, a significance difference has been noticed while the attributes are helping neighbors (physically / financially), helping in resolving conflicts, taking the demands of the community to the appropriate authorities, protest against any bad action against the community, and playing role of a leader and being a role model for others. The stepping stone any individuals’ development lies with the degree of awareness about self and about the rights they possess. All the parameters except knowing rights, campaign for political parties, active participation in local organizations, playing a leadership role and being a political leader under study for mapping the political empowerment have shown a significant change. Thus, the null hypothesis, “Ho: Commercialization of indigenous knowledge has no impact over the Political
Empowerment of Indigenous people” is rejected and the alternative hypothesis is accepted, i.e., Commercialization of indigenous knowledge has impacted positively on developing the political life of the indigenous people.

9. The analysis had shown that the muga respondents had shown a marked increase in their interaction with different persons in the society like family members, neighbors, personal friends outside of family, and with outsiders like strangers, community leaders, and government officials; higher bargaining power; futuristic attitude and confidence to face future. All the parameters under study for mapping the psychological empowerment show a statistically significant change.

10. By providing opportunities for frequent interaction with program staff and other members of the social network, such as meetings, interactions etc. expose muga weavers to new ideas and values. This increases their self-confidence and makes them more assertive of their rights than muga weavers who have not had similar exposure. More specifically, it has been noted that when muga weavers Members play leadership roles, as group leaders and/or center leaders, they experience an increased sense of self-confidence and self-worth. The change is seen but seems to be very slow and steady, and the trend shows that the respondents are in the way of a transition take up the higher responsibilities as expected. Muga silk weavers, especially those operating from an integrated perspective and as part of larger programs, occasionally involve training programs and related activities. These provide muga weavers with opportunities to travel outside the village and expand their knowledge beyond the four walls of their household and immediate community. The increased mobility leads to a greater sense of self-confidence, and is empowering in its own right, commercialization can becomes a mechanism for promoting the inclusion of muga weavers into broader social processes. Thus, the null hypothesis, “H₀: Commercialization of indigenous knowledge has no impact over the Psychological Empowerment of Indigenous people” is rejected and the alternative hypothesis is accepted, i.e., Commercialization of indigenous knowledge has impacted positively on the psychological life of indigenous people.

11. The study indicated that the correlation between overall satisfaction and Economic or Social Factor was higher than that between overall empowerment and Psychological or Political Factor. These results revealed support for hypothesis that there seems to be a moderate correlation between overall empowerment and the selected empowerment attributes.
12. To predict the goodness-of-fit of the regression model, the multiple correlation coefficient (R), coefficient of determination ($R^2$), and F ratio were examined. First, the R of independent variables (four factors, $X_1$ to $X_4$) on the dependent variable ($muga$ weavers’ overall levels of empowerment, or $Y$s) is 0.601, which showed that the indigenous community had a positive and high overall satisfaction levels with the four dimensions. Second, the $R^2$ is 0.601, suggesting that more than 60% of the variation of weavers’ overall levels of empowerment was explained by the four factors.

13. The F ratio, which explained whether the results of the regression model could have occurred by chance, had a value of 9.337 ($p = 0.000$) and was considered significant. The regression model achieved a satisfactory level of goodness-of-fit in predicting the variance of responding weavers’ overall levels of empowerment in relation to the four factors, as measured by the above mentioned R, $R^2$, and F ratio. In other words, at least one of the four factors were important in contributing to indigenous people’s overall levels of empowerment.

14. In the regression analysis, the beta coefficients ($\beta$) could be used to explain the relative importance of the four dimensions (independent variables) in contributing to the variance in women’s overall levels of empowerment (dependent variable). As far as the relative importance of the four empowerment dimensions is concerned, Factor 1 (Economic Factor, $B_1 = 0.520$, $p = 0.006$) carried the heaviest weight for indigenous communities under study’s overall levels of empowerment, followed by Factor 2 (Social Factor, $B_2 = 0.473$, $p = 0.009$), Factor 3 (Psychological factor, $B_3 = 0.442$, $p = 0.000$), and Factor 4 (Political Factors, $B_4 = 0.325$, $p = 0.003$). The results showed that a one-unit increase in the economic factor would lead to a 0.520 unit increase in women’s overall levels of empowerment, while other variables being held constant; and so on. In conclusion, all underlying dimensions are significant.

15. Thus, the results of multiple regression analysis reject the null hypothesis under study, that $H_0$: there is no relationship between the selected indigenous communities’ empowerment attributes and their overall levels of empowerment. So, there is a relationship, which is what we expected.
7.03. FINDINGS OF THE STUDY

The followings are the major findings of the present study:

1. Indigenous Knowledge is important for sustainable livelihood, but absence of any stringent policies have made it vulnerable. While going through the works of many scholars have cited that absence of any rigid legal framework is hampering the Indigenous Knowledge System. The present study reviewed many previous research endeavours and provides valuable understandings on indigenous knowledge systems and diverse aspects of this knowledge that exists among the indigenous communities. They have stressed tribe-forest interdependency and how the idea of sustainable development/ livelihood is established in their livelihood patterns. The survival of adivasis depends on forest and vice versa. Further, many scholars perceive that the significance and use of indigenous knowledge of forest-dwellers are not only helping for the survival of indigenous communities but for the whole mankind in a sustainable manner.

2. Since long past, muga culture was recognized as one of the most promising venture for development of socio-economic condition of the rural populace in Assam. The culture involves various indigenous practices and beliefs, varies from one location to another and also believed to be effective in production system. These indigenous knowledge and skills are also need to understand thoroughly, critically validate and document in different form using the modern techniques so as to integrate the best ones into the sustainable livelihood system to reduce dependence on external inputs, cost of production and make the culture eco-friendly.

3. Lakhimpur has an immense potential to develop the traditional small and rural cottage industries like muga cultivation and other activities involved with muga. Muga, which is highly labor intensive and less capital intensive in nature with highly rewarding investment, can be a good source of employment and livelihood for the educated youth and can help them to overcome the challenges of un-employment; and eradicate poverty in the district and improve the social-economic status of the society.

4. The identified prospects, SWOT analysis, cost-benefit analysis and viability study show that there is a huge scope of business prospects in muga farming in the study area along with different problems. The prospects and viability of the commercialisation of
indigenous knowledge in the form of muga culture in the study area are immense along with various challenges in the present market conditions.

5. There are different factors creating hindrance in the development of muga silk cultivation and its growth in the study area. The problem of muga silk weavers is multifold ranging from procurement of finance, production and to marketing. Some common problems like absence of muga silk processing factories, low price of muga silk leaves, damage to muga silk leaves, infrastructural bottleneck, etc. are most sought problems. The study has identified different prospective areas to make small muga silk farming as a promising tool for development of rural economy. Thus the success of commercializing the indigenous knowledge is fruitful and successful.

6. The present study had traced the existence of changes along the factors of empowerment (economic, social, political and psychological) of the indigenous communities who benefited through the commercialisation of indigenous knowledge and skill with respect to muga culture in the Lakhimpur district of Assam. For the analysis, statistical tools like descriptive analysis, correlation and regression, and ANOVA have been used to test the null hypothesis - \( H_0: \) Commercialization of indigenous knowledge has no significant impact on the empowerment of indigenous people in Lakhimpur district of Assam. The analysis has ended at the inference that the commercialisation of indigenous knowledge and skill had improved the lives of the indigenous communities engaged in muga silk rearing and culture in the Lakhimpur district of Assam.

7. All the underlying dimensions (economic, social, political and psychological) are significant for the overall empowerment of the indigenous people. Thus, the results of multiple regression analysis reject the null hypothesis under study, that \( H_0: \) there is no relationship between the selected indigenous communities’ empowerment attributes and their overall levels of empowerment. So, there is a relationship, which is what we expected.

7.04. SUGGESTIONS FOR POLICY MEASURES

The muga silk handloom industry has occupied a place of pride in the socio-economic and cultural life of people of Assam. The study found and highlighted that the commercialisation of muga silk activities leads to empowerment of indigenous communities. But the indigenous people are still strived hard in their lifestyle in poor
conditions and the industry is facing lot of serious problems that have already been discussed. The handloom industry needs to be organized on proper footings to make is self-dependent, provide better scope of income and employment and also a source of earning foreign exchange rate. While preparing for the study, it has been found that to some extent the Directorate of Handlooms & Textile, Government of Assam has failed to create the necessary ambience in handloom industry that would have attracted the youths or new generation to take the muga silk handloom industry on a more commercial and professional dimension. The following suggestions are put forward after considering all the findings in the study:

1. A full-fledged survey purely on different aspects of direct marketing of silk handloom products by the weaving communities by tapping the educated unemployed youths of the localities is necessary for assessment of existing situation and the future prospects.

2. Handloom weaving should be no longer see and learn art. Different training programmes should be implemented as regard weaving, designs, productions, market survey and management. There has to be genuine concerned and concerted efforts towards skill upgradation on part of the weavers. Most weavers may have inherited a talent for weaving. However, skill has to be developed by training and practice. Most of the weavers require proper training, not only honing their weaving skills, but also in aesthetic perceptions, productivity enhancement and market orientation. Motivational training of weavers is also very important.

3. To overcome the obligations in financial procedures, certain conditions should be relaxed. Financial assistance should be made easily available but with stricter laws that if not re-paid within the agreed time between the loaner (banks/financial institutions) and loan taker (weaver/society). Banking habits need to be encouraged amongst weavers that will simultaneously cultivate the saving habit. Interactions with banks in financial matters will teach them hard value of money and in time they will also become aware about the various offers/facilities provided by financial institutions.

4. Timely supply of raw materials by various agencies has to be ensured by concerned departments. The cost of muga yarns and seed cocoons, are always on the higher side often without any concrete reasons. Hence, muga handloom industry should be formulated with specific Village Credit Plan, so that weavers can purchase the yarns and seed cocoons comfortably.
5. The national and international demand for muga fabric is high. The tide of cocoon outflow from the state has somewhat been stemmed but complete value addition to this important farm sector product of the state is still not adequate. The turnover of the state’s handloom industry can increase many folds if the farm produce is completely converted into finished products. With blends, this can further multiply. Such a turnover will lead to significant rise in employment opportunities in the state.

6. The fly-shuttle is the main loom in Lakhimpur district and is used to weave every product from fine cotton ‘gamochas’ to the much heavier and difficult muga Pat fabrics. The products are often marked by an erratic salvage, a clumsy float and irregular weaves. These first generation machines need to be further developed to meet commercial standards of productivity. A lot of technological change-over need to be done for the refinement and standardization of muga and pat yarn, especially in terms of denier, ply elongation and finish which are serious blockages. The weavers of the region must strive to adopt some of the latest and appropriate technologies like using improved tools and techniques, computer aided designs, and electronic data interchange etc. in the handloom sector.

7. To improve the quality of product, research and development are must. The weavers are not aware how to develop quality and design through research and development with minimum cost and efforts. In different states of entire North-east, each tribal and non-tribal designs can be further upgraded with the help of R&D. The Development Commissioner of Handlooms with collaboration of Indian Institute of Handloom Technology can take the initiative to help the weavers.

8. The use of computer in designing is no longer an option but a necessity to meet global challenges. Designers/weavers can view, incorporate and edit weavers and all other patterns that are required for development of fabric. Hence it is very essential to train the weavers in this emerging area of computer-aided textile designing by proper action plan with immediate effect. This will open up a new horizon to the handloom industry of not only of Lakhimpur but entire Assam. The Directorate of Handlooms and Textile should take lead in this direction.

9. It is heartening to know, during the study tour, young educated urban youths coming forward to invest their time, labour and capital in the handloom sector. A large number of tiny silk weaving, yarn related and associated units have mushroomed in urban areas like Guwahati, Palasbari, Udalguri, Kokrajhar, Goalpara etc. The much-needed support of private enterprises to the rural small-scale industries seems to be happening.
The weavers of Lakhimpur should come into agreement with these units to get timely supply of materials instead of always depending on agencies outside the state.

10. The promotional and marketing organisations of the region must display the local handloom products in various airports, railway stations, bus-stands, commercial centers to assist the local artisans to get publicity and in the process, get orders from traders, marketing organisations, export houses and tourist firms.

11. In this era of globalization and open economy, consumers today have a wide range of choice. They have the freedom to choose the right product from a wide range of products. Therefore, mere product will not serve the purpose- the product has to be acceptable to the customers.

12. Similarly, at the time of determining the price for the product, it has to be determined in such a way that it is affordable to the customers. While fixing the price, the disposable income of the customers should be analyzed. This will help in successfully marketing the products. At the same time successful marketing also calls for availability of product and the customers’ awareness of the product’s quality, price and benefit. The producer and the marketing agencies should make thorough market survey to know the market requirement and customer’s buying behaviour. Hence, marketing research should be used as an effective tool for planning and designing marketing activities in an appropriate manner. Market research will also assist in selecting the right means of selling and distribution, market selection, promotion and advertisement and to maintain a congenial relationship with the customers.

13. Production of yarn should be encouraged in private sector/self-help groups/non-governmental organisations etc. that are technically trained under the supervision and technical support of government agencies.

16. The state government owned sericulture farms should be converted to commercial farms and more such farms should be established in collaboration with the Department of Social Forestry. These farms then should be allotted to commercial rearers through auction. Privatization will yield professionalism and thereby both rearers and weavers will benefit the outcome.

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17. Though not many, few weavers’ families are very eager to adopt a new mode of production to eject out of the system, which is losing both in production and profit. Some such progressive minded weavers families should be selected by the state government and after providing with necessary requirements, realizable targets should be drawn out for each family. The family with best performance should be acknowledged publicly with cash prize. This process will attract others into the profession and weavers will strive to produce quality products.

18. Certain initiatives should be compulsorily taken by the state government to improve the situation and shortage of marketing, raw materials and to increase production. The wastelands, available in and around Lakhimpur district should be allotted on contractual basis to local rearers or the unemployed for silk production, whose job will be monitored. Only on satisfactory performance further extension of contract should be allowed. A ‘marketing cell’ should also be established to ensure systematic marketing approach with incentive facility.
19. The Directorate of Handlooms and Textile need to be revitalized and reorganized. Each unit of the department should be given a target and politicizing should be completely avoided.

20. There should be expansion in the research and development services of Indian Institute of handloom Technology and Weavers Service Centre and each of the development should be brought into focus of weavers. The communication gap between the research result and the weavers’ sector should be avoided if not totally eliminated.

21. The state government should make it a mandatory policy to consult weavers and co-operative societies for any development and training programmes related to weaving and marketing of handloom products. There should be frequent meets between weavers and officers of handloom development where discussion and consultation can be done openly.

22. The network of publicity like radio, television, open meetings, demonstration should be used more often to make weavers aware of modern technology, techniques of marketing, availability and source of finance and raw materials and bridge the information gap. Implementation of policies with positive outlook always gives good result. Motivated persons with trained knowledge and managerial ability are the need of the hour to appoint in handloom development departments as well as in production and marketing.

23. To generate interest, knowledge and produce future entrepreneurs in weaving sector, lessons on weaving technology should be incorporated in higher secondary and degree level by the education department and Government of Assam.

24. It has become compulsory that to compete with the global market, quality assurance and fabric grading system is a must. Everyone is quality conscious nowadays. The availability of low cost products of the same kind has triggered this consciousness amongst the people. The tools and technologies are too costly to be afforded by a single handloom unit alone. Hence, co-operative societies and Weavers’ Service Centre should use this tools and processes centrally on regional basis. If such initiatives take place, the government will surely come forward to help in achieving this level.

7.05. POLICY IMPLICATIONS

Though the improvements in livelihood and living standards of the sample muga rearers because of the development and commercialisation of the indigenous knowledge
have not gone up generously, yet it cannot be denied that the growth is not better-off in the study area as concluded by the present study. Such type of studies and research in future may have wide range of policy implications, as stated below.

The indigenous community livelihood development programmes can be made more effective to tackle the problem of poverty and destitution and to improve the socio-economic status through a lateral growth of entrepreneurship, by increasing awareness and involvement of target households in these programmes. The varied informal sources of information about the programmes leads to delays in entry into such programmes. Thus, different government agencies should develop formal channels to disseminate such information and knowledge. Necessary steps are required to be taken at the government level to ensure more participation of households in adopting their traditional activities. Post-project appraisal must be conducted in consultation with the concerned beneficiary to know about the problems encountered by them during implementation of such programmes.

To counter the personal constraints of the poor and their households, it is very much required that their level of education should be improved. This will enable them to better understand the programmes under implementation. As the households suffer from lack of storage and marketing facilities of the finished product, necessary steps need to be taken in the region by the co-operatives and other government agencies to have provision of storage and marketing of the finished products. Supply of quality inputs and credit from formal agencies should be ensured so as to induce the artisans towards different schemes operating.

The institutional bottlenecks in the way of implementation of the programmes can be avoided by simplifying the procedures, proper follow-up action by the government officials, providing appropriate schemes to suit the local available resources, expertise and needs of tribals. Proper co-ordination among the officials / agencies involved and expediting the working of the schemes needs to be developed for timely completion of the projects and post-project evaluation. As regards deriving better results from wage-employment programmes, there is need for ensuring regular and timely wage payment to the persons engaged and in this context regular monitoring by the officials is very much required. More so, as the beneficiaries involved in different wage-employment
programmes are poorer, opportunities are to be created to provide them with gainful employment round the year so as to raise their socio-economic status.

7.06. LIMITATIONS OF THE STUDY

The assumption that similar type of situation must be prevailing in all areas of Assam is a major handicap of the present study. The time and cost constraint is also another hindrance for the purpose. Although all attempts have been made to overcome such, the findings cannot be universally applied and further detailed study may be undertaken before implementing the suggestions. Other limitations, apart from above, are-

a. The short period of research and the small sample from one district are the inevitable shortcomings of this study. However, by taking the total number of households (200 HHs), an attempt has been made to understand the socio-economic conditions of the muga silk rearers and their activities.
b. There are several limitations of the framework used to study the impact of commercialisation of indigenous knowledge on livelihood development with respect to the muga silk cultivation, representing areas in which additional development is needed. First, it has been observed that some business are growth-oriented, others grow little or not at all, and still others may grow to a certain point and stop. It appears that enterprise growth is not necessarily an objective for all entrepreneurs. A more detailed conceptual model is needed to explain enterprise growth and evolution in terms of household decision making and the environment in which decisions are made.
c. The lack of a control group in this study affects its ability to generate causality. To effectively assess the efficiency and impact of any program, once informal organisations has refined their tracking system, it would be extremely valuable to develop a thorough study using an experimental design to accurately assess its impact, justify funding and potentially increase the value of informal organisation to the local community and the state.
d. The participants in this study were highly receptive in expressing their opinions to a third party aside from NGO staff. It would be valuable to develop an annual assessment of informal organisations, possibly through the help of some staff from the state Sericulture Department, Department of Industries and Rural Development Departments. These persons could continually track the effects of any
improvements implemented over the previous year and suggest additional or alternative solutions for the future.

e. To ensure accurate estimates of program benefits and success, it would be advisable to measure both costs and outputs (financial and non-financial) to ensure that development funds are well spent in the future and to identify possible areas that need extra sources of funding as well as those where funds are no longer needed. Thus a cost-benefit analysis is to be done, individually.

7.06: SUGGESTIONS FOR FUTURE RESEARCH

The widespread adoption of “bottom-up participation approaches” as opposed to “top-down modernisation approaches” has opened up inspiring prospects for anthropology in developmental studies. The innovative focus on indigenous knowledge predicts the next revolution in anthropological method. Informants becoming collaborators and their communities participating user-groups, and touches upon such contemporary issues as the crisis of representation, ethnography’s status with regard to intellectual property rights, and interdisciplinary cooperation between natural and social scientists. Indigenous-knowledge studies are challenging not only because of difficulties in cross-cultural communication and understanding but also because of their inevitable political dimensions. Contributing to development which intervenes in people’s lives, these studies engage with them in novel ways. The present study is not an end to these endeavours, rather a beginning of the following research opportunities:

➢ **Human Capital:** Interesting questions for the future include:

  o How do other indigenous communities develop entrepreneurial competencies during the new venture creation and growth process, basing on the knowledge and skill they possessed?
  
  o What is the role of culture, upbringing, socialisation in the growth and development of entrepreneurial venture, based on indigenous knowledge/skill?
  
  o Does communities’ socialization process influence on success in acquiring resources and in particular, growth capital?
  
  o Do women entrepreneurs manage their entrepreneurial careers in the same way as their male counterparts, using traditional skill? What are the cycles, transitions and challenges and how do they overcome these?
➢ **Strategic Choice:** Some interesting research questions might be:
  - What factors influence the growth strategies for indigenous community-led ventures? What role does the strategic choice of sector and firm type play in the growth of indigenous community-led ventures?
  - What are patterns of financing for indigenous community-led ventures and how do these compare to modern professional ventures?
  - What are the Marketing, publicity and salesmanship strategies to be adopted for a developing a sustainable market for these organisations?

➢ **Structural Barriers:** Interesting questions in this area of research include:
  - What are the institutional norms in the different industries, and how do these influence indigenous people’s ability to acquire resources at start-up and during growth of their ventures?
  - What is the role of industry beliefs, practices and norms in determining whether women are successful in acquiring equity capital?

7.07. **FINAL WORDS**

Indigenous knowledge is a critical factor for sustainable livelihood and inclusive development. Empowerment of local communities is a prerequisite for the integration of IK in the development process, to averse the feeling of alienation. The integration of appropriate IK systems into livelihood programs has already contributed to efficiency, effectiveness, and sustainable development impact. IK, like any other knowledge, needs to be constantly used, challenged, and further adapted to the evolving local contexts. Supporting local and regional networks of traditional practitioners and community exchanges can help to disseminate useful and relevant IK and to enable communities to participate more actively in the development process. While innovative mechanisms for the protection of IK need to be developed, many indigenous knowledge practices can at the same time be integrated into local, national, regional, or even global development efforts. However, experience has shown that this cannot be done by one institution alone. Therefore, partnerships are needed to support this process at all levels.

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