STRUCTURE OF THE SILK INDUSTRY IN SUALKUCHI

Structure of the Silk Industry in Sualkuchi

Dissertation submitted in partial fulfillment of the requirements for the degree of Master of Philosophy in Applied Economics of the Jawaharlal Nehru University

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CENTRE FOR DEVELOPMENT STUDIES

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I hereby affirm that the work for the dissertation, **Structure of the Silk Industry in Sualkuchi**, *being submitted as part of the requirements of the M.Phil Programme in Applied Economics of the Jawaharlal Nehru University, was carried out entirely by myself and has not formed part of any other Programme and not submitted to any other institution/University for the award of any Degree or Programme of Study.*

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June 29, 2001. Pradeep Kalita

Certified that this study is the bona fide work of Pradeep Kalita, carried out under our supervision at the Centre for Development Studies.

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to my parents

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Abstract of the dissertation

Structure of the Silk Industry in Sualkuchi

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The study is on ***Structure of the Silk Industry in Sualkuchi***, which is an instance of vertically dis-integrated production system. It has adopted, in a limited way, the subsector approach developed by Boomgard et al (1992). Sualkuchi is located in the State of Assam in India.

Production of mulberry raw silk in Assam is lowest (4 per cent in total raw and spun silk production in the State during 1988 to 1997) among all types of silk whereas its consumption is highest. Its production in the State is enough to fulfil less than five per cent of consumption. Analysis of Census data on workers showed that in all processes of the silk industry, there is a growth in employment since 1931 to 1991. In the initial processes of silkworm rearing, silk cocoon and raw silk production, there is an increase in the proportion of main workers. Among all other processes, it is silk spinning and weaving other than in mills where the highest proportion of all workers is engaged and this process is concentrated in Kamrup district. Spinning and weaving of silk in handlooms is predominantly a household industry. Kamrup district does not produce mulberry silk, however, weaving sector is concentrated here. In the district, Sualkuchi is the most important commercial silk weaving cluster.

Available secondary information on the silk industry in Sualkuchi indicated that the industry is growing. A tendency towards the growth of bigger manufactories is evident which reveals the continuing transformation from household industry to non-household industry. It is also substantiated by the growing share of non-household industry in the State from 11.8 per cent in 1961 to 28.3 per cent in 1991. Transformation of the silk weaving industry in Sualkuchi is more clearly manifested in the growing dependence of master weavers and manufacturers on hired weavers and hired helpers. Eighty per cent of the fifteen thousand wage paid weavers in the silk town are immigrant female weavers, the greater proportion of whom belong to *Bodo* community in Assam. There are around three thousand master weavers and manufacturers in the town. This shows that a class of wage-earning weavers has emerged in Sualkuchi.

While the silk weaving industry in Sualkuchi produces all the varieties (mulberry, *muga* and tasar) of silk fabric excepting *eri* silk, mulberry silk weaving is most predominant here, although Sualkuchi does not produce mulberry silk yarn. Out of 12500 commercial looms in Sualkuchi, more than 80 per cent weave mulberry silk.

Production systems in Sualkuchi, at present, are similar to the lower forms of production, which evolved elsewhere in India during the colonial period and in England before the evolution of the factory system. In the silk industry, the production system is characterized by the developing system of manufacture in the form of manufactories/workshops. This is evident from the specialization of workers in various technical processes of production and existence of manufactories working with factory discipline with respect to hours of work and vacations. There is a clear division of management function and weaving. Employment of salaried managers in bigger manufactories is a further development in the division of functions. Thus, as observed in the literature, coexistence of various forms of production, which is a feature of the lower forms, is evident also in Sualkuchi. Independent cottage system, domestic system of master weavers, certain forms of putting out or dispersed manufactory system, manufactories employing hired weavers and helpers and also hired managers in some instances are the important production systems in the industry.

A system of money advances is widely prevalent in the informal wage contract system between the manufactory and hired weavers and also between the master weaver and hired weaver. In the co-operative form of production, the system of advancing yarn is predominant. System of yarn advance against the security of cloth is limited in private sector in Sualkuchi. Structure of the silk weaving industry consists of the private agents, silk weaving co-operative societies and government agencies. We have outlined six channels of production/distribution in the industry on the basis of differences in the degree of integration of functions: yarn procurement, weaving and retail sale of silk cloth. Different channels have their strengths. Channel 4, a dis-integrated channel of production and distribution, has better control over production as it is predominant in terms of number of manufactories but, for sale it is entirely dependent on other agents. Channel 5 with integrated production and trade can supply according to the taste of consumers. It is the most dynamic channel of production. For marketing of silk cloth within the State, it has its own marketing arrangement in the form of stores-cum-showrooms. This channel of production has to depend on the marketing infrastructure of the formal agencies for the wider national market. Innovation in designs is crucial for survival and growth. Channel 5 takes advantage of the best weavers and grows.

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GLOSSARY

bani	weft
bhander	store of silk yarn and accessory
brocket	a type of design
buta	individual component of a design which can be round, oval shaped or any other shape
chader	part of traditional women' dress in Assam which is used as a wrapper with *mekhala* by women.
china silk	mulberry silk yarn produced in china
dara chader	a piece of cloth used by the groom.
dhara/nara	*dhara/nara* is a dress of older *Khasi* women especially for attending church ceremonies.
dhoti	a piece of cloth with a thin border used as loin cloth by men
doby	machinery used in designing
dig	warp
endi	silk fabric woven of eri silk
eri	silk producing worm of *pilosamia ricini* and its silk
ful	component of a floral design
jensem	*jensem* is a dress material of young *Khasi* women.
jora	a set of *mekhala* and *chader.*
Karnataka silk	mulberry silk yarn produced in Karnataka
Khasi	a community in Meghalaya/Khasi hills
mahajans	manufacturers in Sualkuchi who own bigger manufactories and cloth stores
makhmal	velvet
mekhala	a piece of cloth with the ends sown together which is used by women as dress in Assam.
mohura	bobbin – weft thread is wound around this before it is inserted into the shuttle. also called quill or spool.
mudois	traditional trading community of Sualkuchi long back
muga	golden fibre spun by the muga silk worm *antheraea assama*
muthi	it is an unit of measurement of designing charges which means number of cards used in the designing or the number of times of movement of the shuttle across the warp (100 *muthi* = 100 cards = 100 times movement of the shuttle)
purbasree	showrooms of north eastern handloom and handicrafts development corporation
pari	side border
pat	mulberry silk yarn
rendiastem	it is dyed *endi* garment used as wrapper around waist by the *Khasi* women.
saree	plain or designed cloth of from 5 to 11 yards a pair in length worn by women in India
tanti	the traditional weaving community in Sualkuchi

Chapter I

INTRODUCTION

Sualkuchi is located in the State of Assam within the north-eastern region of India. It is a historically famous centre of silk textile production at least since the 17th century. Since then, the silk industry in Sualkuchi has developed a variety of arrangements with West Bengal, Bhutan, Nepal, Tibet, Bangalore, Varanasi, Surat, Ludhiana, Salem and China for the supply of silk yarn, art silk, gold thread, machinery for designing and distribution of silk cloth. Evolution of various arrangements is also linked to the development of certain important trade routes. There was a trade route was via Bhutan through which traders used to come down to Sualkuchi in order to purchase silk cloth. And even now through the trade route via Siliguri in West Bengal and Nepal, mulberry silk yarn known as *China pat* produced in China is carried to Sualkuchi.

The silk industry in Sualkuchi is thus linked to the silk yarn industry, machinery industry and supporting industries located in various regions through supply relations. Changing environment and structure of production of raw materials as well as finished products and regulations in distribution of yarn have influenced the relative strengths and weakness of these supply chains. Change in the production structure of the industry in Sualkuchi is an instance, which has resulted in the simultaneous development of supply arrangements with Bangalore silk yarn industry. Earlier, before the imposition of high tariffs since 1953 on the silk yarn import (Baishya, 1972), supply arrangements of Sualkuchi silk industry with silk yarn industry of Japan and China were greater. After imposition of tariffs, the supply linkages with Bangalore silk yarn industry became much more prominent. Such a structure of inter-linked arrangements has developed because the industry, which was predominantly producing *muga* silk cloth transformed into a predominantly mulberry silk cloth producing industry. This transformation of the industry itself could be a result of a growth in mulberry silk yarn production. Coupled with it another major change in the production structure is the use of tasar silk yarn as a result of which the production base of the industry has become much more diversified.

In the course of its evolution and growth, the industry in Sualkuchi has developed a spectrum of linkages with the organised industry for the supply of inputs. At the same time it has also arrangements with the small household silkworm rearers and silk cocoon producers in the sericulture sector of the State. For instance, silkworm rearers in Darrang district carry mulberry raw silk produce to Sualkuchi in small quantities. Yarn dealers in Sualkuchi purchase mulberry

raw silk from these producers and get it twisted by the twisting mills in Malda in West Bengal. For the distribution of silk cloth, the industry is also linked to marketing organisations in the public sector.

Even in the unorganised sector under the changing economic environment, the industry has managed not only to survive but also to grow which is evident from the dispersion of household silk weaving enterprises into surrounding villages. The silk industry, which was initially localised in Sualkuchi village and then in Sualkuchi census town including Sualkuchi and Bamun Sualkuchi, has now dispersed into the surrounding villages in the same development block and to a limited extent even in other development blocks. Such expansion through dispersion occurred as a result of upward mobility of weavers who became in successive steps master weavers, manufacturers and employers of wage earning weavers, who were different from their own caste and community.

A study on the structure of the silk weaving industry in Sualkuchi is interesting since it is a case of vertically dis-integrated production system. Production of raw materials and finished product are not integrated functions of the same firm. The industry procures various inputs from different firms located in geographically dispersed areas, weaves the fabric and sells it within the State through its own marketing arrangements and outside the State thorough marketing agencies in the public sector. An analysis of the structure of the industry may help in understanding the growth potential and constraints of micro and small enterprises. By now it is known that micro and small enterprises have potential to grow through their participation in vertically dis-integrated production systems. An attempt is made here to analyse the structure of production/distribution systems in the silk weaving industry in Sualkuchi.

Most traditional industries undergoing change are characterised by a multiplicity of production/distribution systems. As Anderson (1982) states, "In the process of expansion of a firm, structural changes occur in the initial stage when the household family enterprises transform into small workshops or factories with lesser number of employees. In the subsequent stage, structural change is not introduced. Where structural changes do occur, however, is in the organisation and management of the business". According to Schmitz (1982), "the study on the evolving structure of a particular industry from the vertical dis-integration perspective is helpful to understand its growth potential and constraints. The constraints in the growth of small-scale producers could be internal constraints (e.g. lack of

managerial ability) or external constraints (e.g. discrimination from the government). As against this, others suggest that the road to expansion is blocked as a result of factors such as pre-existence of very advanced technology, the control of large firms over product markets, or difficulties in access to raw materials".

Hoselitz (1959) found that during the period 1950 to 1955, Japanese industry showed rather unusual feature of smaller plants (4 to 49 persons) growing faster than large ones in a period of rising economic prosperity. Such a development has taken place in European countries only in periods of depression. According to him, the indispensable feature of Japanese society, which made the continued survival of small industry possible, is a characteristic of Japanese social structure, which may well be regarded as a survival from a pre-industrial era. This feature which has become fully adjusted to industrial society is the *oyabun-kibun*, or as it has also been called, the boss-henchmen system. The system is based upon the central position occupied by a person who performs all the co-ordinating functions for the many smaller entrepreneurs in a given industry in any one place. He supplies raw materials, he mediates credit, he takes care of the marketing channels and he allocates orders among the various small firms. The position of these local bosses in a number of industrial lines has led to a sharp regional concentration of certain small industries and the system of interdependence among small firms has become highly elaborate. Ultimately the integration of small industry into the overall process of industrial production of Japan depends upon sub-contracting. The middlemen who boss the small industrialists are, in turn, dependent upon larger enterprises that often maintain the same boss-henchmen relationship with regard to these middlemen as the latter *vis-à-vis* their "clients." Thus, the survival of small industry in Japan is the outcome of a highly complex and hierarchical social structure within industrial production, and presents a feature of industrial organisation, which is probably not approximated in any western country.

1.1. Subsector Analysis

Rationale for Adoption of the Approach for the Study

We attempt to use the sub-sector approach developed by Boomgard, Davies, Haggblade and Mead (1992), in a limited way, in understanding the structure of silk weaving industry in Sualkuchi. Schmitz (1982) suggested branch specific studies for understanding the conditions under which small scale manufacturing in developing countries has growth and employment

potential. The rationale for the suggestion is that the branch constitutes the most immediate context in which the small producers operate and hence, is the forum in which many of the hypotheses which form the general paradigms can be most easily investigated. Mead (1984) has explored the circumstances under which production/distribution systems may operate in disintegrated ways, enabling small producers to participate in the growth of the economy. The traditional emphasis in the sub-contracting literature was on dis-integration to achieve cost reduction in particular activities. Mead (1984) supplemented this by adding that subcontracting enables producers to undertake more complex production and distribution patterns than they could manage or finance, if they were to rely solely on resources available within their own firm. For smaller, nascent 'parent firms', particularly those based in Third World countries, the use of dis-integrated production and distribution systems may be important in facilitating a movement to more complex products and more distant markets. In some cases, dis-integrated production and distribution patterns arising from limited management or financing capacity in parent firms may be essentially temporary; as the parent firms gain strength, they may choose to integrate these activities into their own functions. Alternately, they may prefer to concentrate on a narrower range of activities, leaving some of these permanently to supplier firms. According to him, focussed research is required to reveal whether these circumstances apply to a particular industry, in a particular country, at a particular point of time.

Mead (1984) further added that similar issues of management capacity arise in relation to co-ordination function. If the co-ordination process is to be handled internally in an integrated firm, this will generally require an extensive bureaucracy. But, according to him, the management capacity in a Third World firm may not be strong enough - or extensive enough - to perform this function of co-ordination effectively. Beyond this, however, in many cases in the Third World as well as in the First World, co-ordination function can be handled more effectively and at lower cost by market links between independent producers. This is the primary reason why most production/distribution systems do not evolve into fully integrated firms.

One of the major challenges faced by organisations regarding cost effectiveness of assistance programs extended to geographically dispersed small enterprises. And one of the possible responses to the challenge, according to Mead and Liedholm (1998), involves focussing on enterprises in particular subsectors. According to Schmitz (1982), cross-section surveys of small-

scale enterprises should not be expected to reveal the growth opportunities or constraints of small producers. Subsector analysis is a cost-effective way of supporting micro and small enterprise development particularly for those enterprises facing broader constraints and opportunities tied to firm growth and transformation (Boomgard et al, 1992). Subsector research views small enterprises as interacting with other firms - both large and small - in vertical production systems. According to Boomgard et al (1992), a matrix of functions and participants delineates the principal channels through which raw materials are produced, transformed and distributed to final consumers. This matrix of competing supply channels is defined as a subsector. By examining the competitive position of firms in alternative supply channels, it aims to understand the dynamic forces at work.

A "subsector" is broadly defined as an aggregation of competing and collaborating agents/firms operating through alternative channels to facilitate the flow of a commodity to final consumers. It encompasses the horizontal and vertical relationships involved in the commodity flow from production to assembly to processing to distribution to consumption. The precise boundary for study of a subsector in terms of product types, geographic coverage, and functions and channels within a subsector are, however, subjective and depend on the objective of the specific study (Nagarajan and Meyer, 1995; p.1116).

The components of the subsector framework define the individual stages of transformation found during the commodity flow and examine how these several stages are linked through various types of actors to facilitate the flow of a commodity from production to consumption through heterogeneous participants in various channels. Each step or transformation in a sequence of production/distribution activities is called a *function* and any traceable path through a system defines a *channel* of product transformation. A subsector map is often used as visual representation to develop a sampling frame and to determine the allocation of resources spent to generate information about the basic functions, participants, linkages and the relative importance of alternative channels in the commodity flow. The subsector framework defines the environment as the context within which a sub-system is assumed to operate. The environment components include (a) the rules that govern participants within and between functions; (b) the information flows and technological processes, markets, qualities, and prices and rules of the game; and (c) service institutions such as secondary input suppliers, courts, financial markets and research institutions (Nagarajan and Meyer, 1995; p.1116).

Subsector approach is a methodology, which emphasises the forces that influence the competitive position of micro and small enterprises (MSEs) within single product groups or subsectors. This approach places considerable weight on understanding the interaction - both competitive and complementary - among firms of different sizes and in different functions, including those involved in manufacturing, trade and services.

Subsector approach views small enterprises as interacting with other firms - both large and small - in vertical production / distribution systems. It revolves around four principal components: verticality, co-ordination within channels, competition between channels, and leverage. Verticality is central to the approach; however the degree of integration varies. Small enterprises are participants in vertical production / distribution systems. They procure inputs from a variety of suppliers and market their output through other firms. They face competition from both large and small firms, which are vertically integrated to different degrees and use diverse technologies. Frequently, large firms serve as input suppliers, output distributors, or competitors. Because of these inter-relationships, co-ordination with firms performing related functions is central to small firm dynamics, as is competition with alternative supply channels. The other channels may have efficiency advantages in producing the same product or competitive advantages through access to better supplies or marketing arrangements (Boomgard et al, 1992). According to Boomgard et al (1992), in analysing vertical co-ordination and integration, the researcher is led logically into the domain of the New Institutional Economics (NIE) (Williamson, 1975; Nabli and Nugent, 1989). The theory holds that transaction and information costs, especially in the presence of asymmetrically-held information and variable market power, strongly influence the nature of contracts and the extent of vertical integration. The resulting institutional relationships affect the competitive position of micro and small enterprises, the ease of co-ordination and the obstacles to growth in different channels. The level of transaction costs clearly also affects the gains from leveraged interventions at system nodes.

The subsector framework was later expanded based on the transaction costs approach advanced to explain the nature of firms in a subsector and the market co-ordinating mechanisms used by them. The transactions cost involved in the flow of a commodity in a subsector is postulated to influence the choice of market technologies chosen by the agents to co-ordinate their activities. Transaction costs are assumed to arise due to asset specificity and uncertainty in production and marketing. Jaffee (1992) developed a matrix of appropriate marketing technologies ranging from spot market transactions to forward contracts to vertical integration under various combinations

of specialisation of assets required for the trade (asset specificity) and the magnitude of uncertainty in trading the commodity (see Table 1.1). He showed that the greater the asset specificity and uncertainty, the greater will be the tendency for firms to vertically integrate their operations. The opposite was postulated for spot markets.

Table 1.1. Levels of asset specificity, uncertainty and market co-ordinating mechanisms

Uncertainty	Asset specificity		
	High	Medium	Low
High	Vertical integration	Vertical integration	Long-term contracts
Medium	Vertical integration	Long-term contracts	Long-term contracts or spot markets
Low	Vertical integration	Long-term contracts	Spot markets

Source: Jaffee (1992) cited in Nagarajan and Meyer (1995; p.1117)

Its Limitations

Subsector analysis focuses on system linkages and bottlenecks. So, it is less effective in analyzing constraints internal to the firm (Mead et al, 1992). Moreover, according to Nagarajan and Meyer (1995), the subsector approach often excludes an explicit analysis of financial markets due to the assumptions that they function in a competitive environment or are considered less important than other features of the subsector.

In many applications, however, the subsector framework has been used to analyse the flow of commodities in input or product markets but without an explicit treatment of financial markets and the financial flows that accompany the commodity flows. The treatment of financial flows was limited to the following ways: financial markets were (a) regarded as part of the environment; or (b) explicitly analysed as a subsector; or (c) simply included in the sequence of marketing functions. It has been argued that the framework assumes that institutions, such as financial institutions, market research and extension etc., are part of the competitive environment/context within which the subsector operates rather than as an integral part of the subsector itself (Boomgard et al, 1986). Such a simplifying assumption may be reasonable in developed economies but can present a problem in developing countries where financial markets are imperfect and access to financial services is rationed. In such situations, financial markets may importantly influence the market technologies employed by agents and the efficiency of the entire subsector (Nagarajan and Meyer, 1995).

Because of the limitations mentioned above, Nagarajan and Meyer (1995) proposed a modified subsector framework that explicitly incorporates the functioning of financial markets for a given subsector for environments characterised by imperfect financial markets. According to them, this more comprehensive approach follows the traditional subsector approach by examining all the subsector participants at various levels in the primary markets relevant to the subsector. But, in addition it also examines the terms and conditions of the financial contracts that are accessible to the subsector participants. After examining the fertilizer subector in The Gambia, they found that even though the modified subsector framework expanded understanding of the structure and dynamics of the fertilizer sector, it has limitations. It is less rigorous than some types of quantitative analysis and, like the traditional subsector framework, it treats as exogenous those institutional issues related with property rights and social customs that help explain how markets operate. According to them, although they succeeded in pushing out the boundaries of the subsector that were crucial in the particular study, the challenge lies in continuing to expand the subsector framework to indigenise those crucial technological, cultural and institutional factors that must be examined in order to adequately understand the structure and performance of commodity systems in developing countries.

1.2. Review of Literature: on Application of Subsector Approach

The study on "Rattan furniture in Indonesia" by Boomgard et al (1988 cited in Boomgard et al, 1992) had identified three alternate channels based on the engagement of hired/family labour, backward integration into raw material distribution and forward integration into retailing/export. The three channels differed in terms of quality and cost of the final product besides the income group of final consumers to which they supply the furniture. There were also differences in access to information necessary to make production decisions. As a consequence, the traditional firms, which determine the volume and composition of their production with little advance information derived from the frequency with which itinerant retailers appear at their doors, cannot produce for inventory. They are most likely to have under-utilised labour, and missed sales opportunities. The progressive producers sell more often to fixed-location retailers and institutions, buyers who often give custom orders for specific quantities and varieties. They can thus buy inputs in bulk, hire labour and achieve some economies of specialisation. The extent of

credit also varies by channel. Production in the traditional system is financed essentially by the manufacturers, but in the progressive channel, financing is also provided by the other participants in the system.

Boomgard et al (1988) have further explained that the traditional and progressive channels exist in related but separate market niches and face different pressures. The traditional channel provides as inexpensive furniture as possible by making use of family labour, labour intensive retailing methods, and the lowest quality raw materials. Stagnant demand, low prices and low remuneration are the major characteristics of this channel. Little cost reduction is possible either in input quality or in labour costs, so negative economic events push those firms out of business. As these traditional micro and small enterprises can operate at the margin, capital conservation and risk aversion are also important characteristics of the channel. The use of itinerant retailers, consignment sales, and family labour are all manifestations of these concerns.

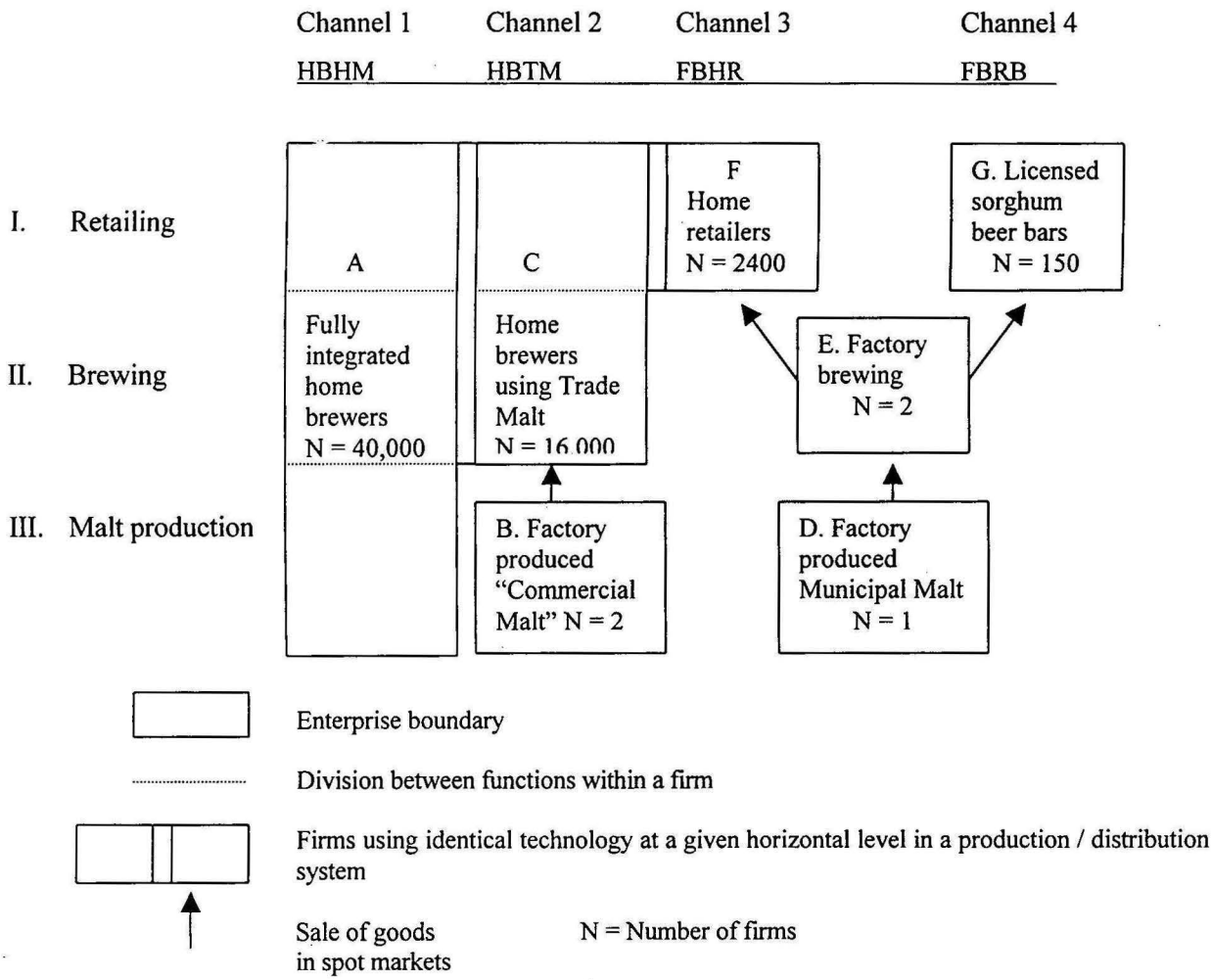
They moreover observed that with a high cost product, a wider customer base with more income, and more management ability, the progressive firms have more room to adjust to changing circumstances. Some specialisation is possible, and, if needed, they can change input quality, substitute family for hired labour and rely more on custom orders before undertaking production. They are thus able to grow consistently but do not have the marketing sophistication or resources to sell in the international market.

'Sorghum beer in Botswana,' is another case of application of subsector methodology, which is based on studies conducted by Haggblade (1984) as cited in Boomgard et al (1992). They observed that the sorghum beer supply networks perform three principal functions: malting, brewing and retailing. In effecting these functions, participants route inputs and final product through four alternative supply channels (Figure 1.1).

In the subsector, technology differs considerably across channels because of which employment and value added varies considerably. They found that over the past 15 years there was an expansion of factory brewing and an increasing use of trade malt among home brewers. The first force driving these trends is the development of new technology in malting and brewing. Development of new malting and brewing technology made large scale factory brewing and quality improvement possible. A second force accelerating the growth of factory brewing was new corporate ownership of Botswana's factory breweries. Other forces include increase in the

opportunity cost of home brewing labour due to urbanisation and rising employment opportunities for women, new packaging techniques adopted by marketing channels for factory breweries and the non-availability of factory brew to the home retailers. And finally, they found that as a consequence of these changes employment in the subsector has fallen and the rise of factory brewing has transferred earnings from poor and middle-income groups to the very wealthy, from women to men, and from rural to urban areas.

Figure 1.1: Schema of the four alternative channels for producing and distributing sorghum beer.



Note: HBHM – Home brewing with home made malt; HBTM – Home brewing with trade malt; FBHR – Factory brewing with home retailing; FBRB – Factory brewing with bar retailing.

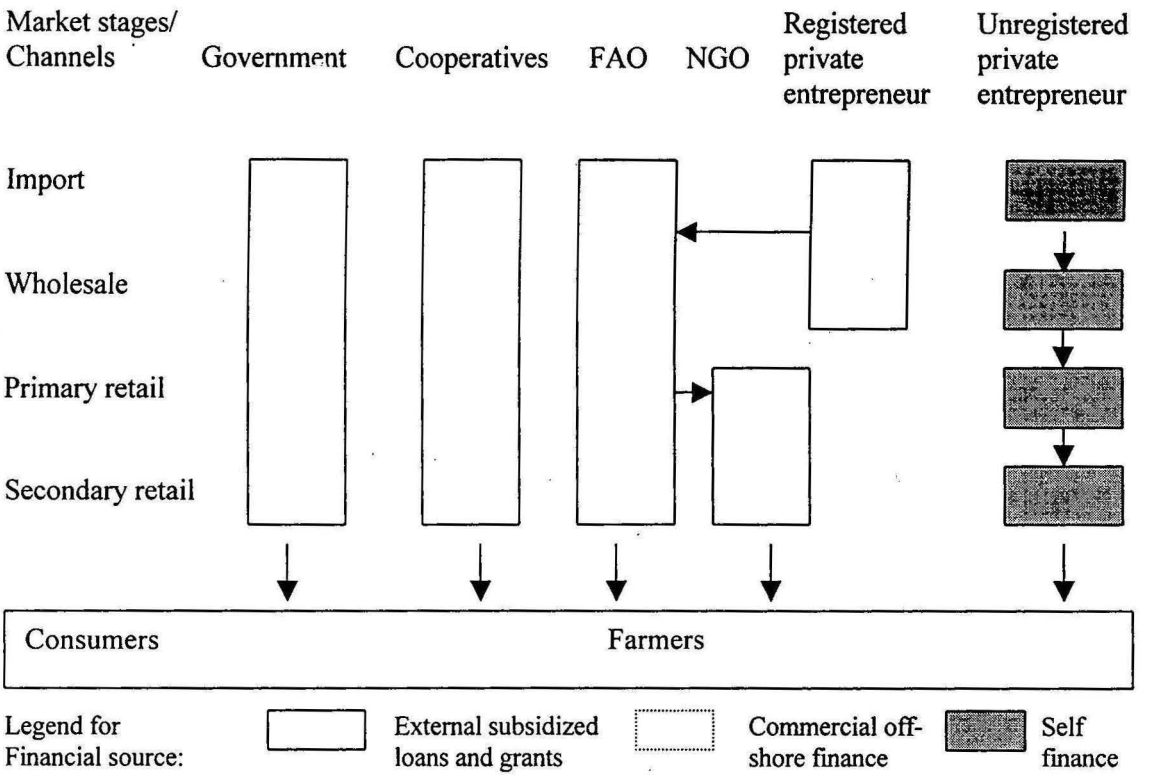
Source: Haggblade, S (1987) and Haggblade et al (1992).

The subsector framework developed at Michigan State University and widely used elsewhere helps in understanding the flow of commodities through heterogeneous agents and channels in a subsector. But the implicit assumption of the financial markets as part of the environment poses a

problem to adequately examine subsectors in developing countries such as The Gambia where financial markets are imperfect and access to finance is rationed.

In a study on the fertiliser subsector in The Gambia, Nagarajan and Meyer (1995) have applied the subsector framework by incorporation of finance into it and found that the flow of fertiliser from producers/importers to the final consumers in The Gambia is implemented through heterogeneous agents, who are actively involved in diverse marketing channels (Figure 1.2).

Figure 1.2: Modified Framework Applied to Fertiliser Subsector in the Gambia.



Source: Nagarajan and Meyer (1995).

There were differences in market technology employed by various channels in terms of integration of activities from procurement/import to distribution to final consumers. The functions of the Gambian Co-operative Union, Food and Agricultural Organisation (FAO) and Government of the Gambia are completely vertically integrated from importation to distribution to final consumers; the functions of the Non-Government Organisation (NGO), Action Aid are partially vertically integrated at the retail level while the functions of registered private entrepreneurs are partially integrated at the import and wholesale level, and the functions of the

unregistered private entrepreneurs are not vertically integrated, but are limited to spot market transactions and informal forward contracts with their business partners.

Several factors contribute to the above observations on market technologies followed by several agents in the subsector, according to Nagarajan and Meyer (1995). An efficient market technology should economise on all marketing costs and is determined by the degree of asset specificity required for the flow of the commodity and the degree of uncertainty related to the trading of the commodity (Williamson, 1975; Jafee, 1992 as cited in Nagarajan and Meyer, 1995). While fertiliser production involves a medium to high level of asset specificity and medium to high levels of uncertainty, the marketing of imported fertiliser involves a medium to low levels of asset specificity and medium to high levels of uncertainty in developing countries. Therefore, an efficient market technology for fertiliser marketing based on Jaffee's criteria, would imply vertical integration of market operations for long term contractual relations or spot markets.

The analysis of Nagarajan and Meyer (1995) in the study revealed that, *ceteris paribus*, access to a steady supply of external funds at subsidised rates, especially at the importing stage, has facilitated the emergence of vertically integrated fertilizer channels such as, the FAO and the co-operative. Some access to domestic and off-shore financing sources for the registered private entrepreneurs has likely contributed to the partial integration of some channels. But, the limited availability of borrowed funds to finance the fertilizer trade for unregistered private entrepreneurs has probably constrained their degree of market integration and has led them to rely on spot market transactions and to provide little or no credit to their customers. Consequently, the market technologies followed by these alternative channels have most likely led to an oligopolistic or quasi-monopolistic fertiliser market in The Gambia dominated by those firms/agents with better access to financial markets. Nagarajan and Meyer (1995) further maintained that by using the standard subsector framework it would have been difficult to understand the reasons for the limited competition that exists, the differences in market technologies found in various channels, especially due to access to finance, and the evolution of the subsector.

We attempt to study the structure of the silk weaving industry in Sualkuchi through an application of the subsector methodology. However, it is difficult to use the approach in greater depth due to the virtual absence of any secondary information on the structure of the industry.

We have tried to approximate the structure of the industry in terms of the subsector approach emphasising the various linkages and potential points of strengths and weaknesses of the different channels.

1.3. Objectives of the Study

The focus of this study is to analyse the structure of production/distribution systems in silk industry at Sualkuchi with the broad objective of understanding the growth opportunities and constraints of small enterprises engaged in silk weaving. The specific objectives are:

1. to study the broad trends in size, growth and location of silk industry in Assam particularly at Sualkuchi in terms of number of workers, looms, number of weaving establishments and production,
2. to understand the structure of the industry in Sualkuchi in terms of different production systems and changes over time to capture the forces at work,
3. to understand its dominant characteristics in use of family and hired workers and nature of its organisation, and
4. to identify the growth potential and constraints of small weaving enterprises in Sualkuchi and understand its competitive position in relation to bigger workshops through the application of the subsector approach.

1.4. Chapterisation Scheme

Chapter II of the study following the introductory chapter discusses the size, growth and location of silk industry in Assam. This chapter is based on the information on number of workers in different three digit groups of National Industrial Classification (NIC) and International Standard Industrial Classification (ISIC) provided by Decennial Census reports. In this chapter, information provided by department of sericulture in Assam is also used to understand the silk cocoon and raw silk industry. The chapter would help identify the regions where the industry is concentrated within the State. Chapter III presents the size and growth of the industry in Sualkuchi in terms of number of workers, looms and weaving establishments. This chapter seeks to trace the tendency towards the growth of bigger manufactories in Sualkuchi and increase in the number of wage-earning weavers. The focus of Chapter IV is on production system in Sualkuchi. It includes a view of the systems as discussed in the literature, the systems present in

Sualkuchi and some distinct contracts present in Sualkuchi. And finally, in Chapter V, an attempt is made to apply the subsector approach with a view to understand the competitive positions of micro and small weaving establishments in relation to bigger workshops. Chapter VI is by way of a conclusion.

1.5. Information, its Sources and Limitations

Secondary Information

Secondary sources of information include different volumes of Census of India, Assam, which provide information on number of workers and establishments at the three digit code level of National Industrial Classification (NIC) and International Standard Industrial Classification (ISIC). Classification on the basis of household and non-household industry is also available. However, 1941 Census was based on Y-sample (2 per cent sample) and 1981 Census was not conducted in Assam. The information provided by 1971 Census could not be used because of the ambiguity in the classification of marginal and main workers. Moreover, due to frequent changes in definition of worker and variations in the categories, comparisons over long periods of time are possible only in broad terms.

Information on number of families engaged in sericulture, area under cultivation of silkworm food plants, production of silk cocoons and raw silk in different districts of Assam is given by the Handbook of Sericulture, published by the Directorate of Sericulture, Government of Assam. Moreover, certain information relating to sericulture and silk industry is also provided by *Indian Silk* and *Sericulture Biennial*, published by Central Silk Board. Besides these, other sources of secondary information used include the following:

i. Report of District Potential Survey of Rural Non-Farm Sector in Kamrup District, 2000, published by North Eastern Institute of Bank Management, Guwahati.
ii. Handicraft Survey of Assam, Census of India, Assam, 1961.
iii. *Smaranika* - a souvenir published by Sualkuchi Resham Pratisthan Limited on the occasion of its golden jubilee in the year 1996.
iv. Articles and research papers on silk industry in Assam in general and Sualkuchi in particular.
v. Status of Sericulture in the North Eastern Region, Central Silk Board, Regional Office, Guwahati.

Primary Information

Information on various aspects relating to production systems in Sualkuchi was obtained through unstructured interview/informal discussions with participants of the subsector without using any structured questionnaire. Participants included cloth dealers, yarn dealers, weavers, master weavers and employers, academics, co-operative societies, and government institutions involved in different functions. Directorate of Sericulture in Assam provided information on sericulture. Demonstration cum Technical Service Centre (DCTSC) of Central Silk Board (CSB) located in Sualkuchi gave information on distribution of looms among different types of silk cloth production in Assam in general and Sualkuchi in particular besides clarifying a number of aspects of the production process. Assam Apex Weavers' Artisans Co-operative Federation Limited (ARTFED), Assam Government Marketing Corporation (AGMC), North Eastern Handloom and Handicraft Development Corporation (NEHHDC) provided information on various arrangements with producers and dealers for the supply of yarn and marketing of silk cloth. Similarly, silk weaving co-operative societies and salesmen/owners in the retail sale counters of silk cloth owned by cloth dealers located at Panbazar in Guwahati and Sualkuchi as well as cloth dealers in Sualkuchi helped in understanding the co-operative mode of organisation of production and distribution. Local branches of Central Bank of India and Pragjyotish Gaonolia Bank provided information on yarn companies in Bangalore, Varanasi and Surat besides growth constraints and prospects. And finally, the Block Development Office in Sualkuchi provided the map of Sualkuchi block.

Chapter II

SIZE, GROWTH AND LOCATION OF SILK INDUSTRY IN ASSAM

2.1. Introduction

Silk production and weaving is a traditional industry in Assam. To understand its importance, we focus in this chapter on the dimensions or size structure and growth of the industry in terms of employment and production. The structure of the silk industry is discussed in terms of the processes of production; household and non-household sectors; principal and subsidiary occupation; and gender-wise distribution of workers. Although there are incompatibilities among data sources and within the same data source over time due to differences and changes in definitions, it is possible to capture a broad trend in growth and location of the processes within the industry. However, before proceeding to the various dimensions of the industry, production processes of silk fabric are outlined in brief in section 2.2. Section 2.3 is on the size, structure, growth and location of silkworm rearing, production of silk cocoons and raw silk in Assam. And in the subsequent section 2.4, these dimensions are discussed for the spinning and weaving processes of the silk industry.

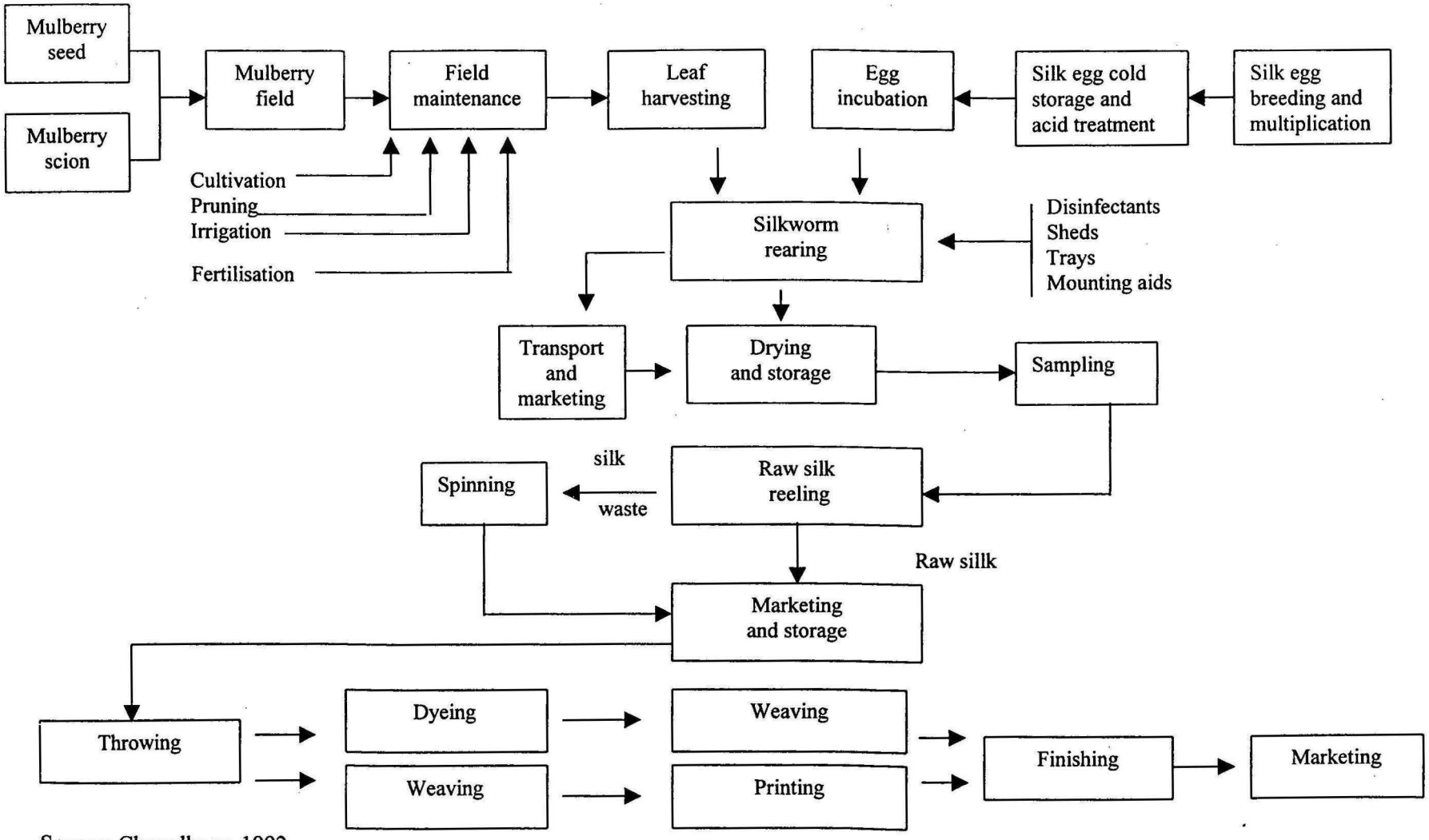
2.2. Production Process of Silk

Production of silk fabric is a result of several processes through which production of raw silk, transformation of raw silk into yarn and yarn to fabric takes place. Although the sequence is generally the same, minor variations with respect to the processes do exist with respect to different types of silk such as mulberry, *muga*, *eri* and tasar. Following is an illustration of these processes for mulberry silk fabric production (Figure 2.1).

Sericulture

Rearing of silk worms is the first process. It involves various operations, that is, plantation of host plants, rearing of silkworm for production of cocoon from which the filament is derived (Chowdhury, 1992).

Figure 2.1: Mulberry silk production cycle



Source: Chowdhury, 1992.

Raw Silk Industry/Reeling Industry

After rearing, reeling is concerned with unwinding the silk filaments from the cocoons through suitable techniques to form a composite thread fit for weaving. It is in essence an industrial sequence to rearing and thus the two are inter-dependent on each other's economic stability and prosperity (Krishnaswamy et al, 1972 cited in Chowdhury, 1992). Reeling industry by itself is known as *Raw Silk Industry* and is an organised and a rationalised operation. In a place where production of cocoons is small, reeling is organised as a cottage industry (Chowdhury, 1992). The raw silk produced contains its original gum or *sericin* (Chowdhury, 1982). Stifling of harvested cocoons is one of the important processes before commencement of reeling. It constitutes also a major process, because care is essential so that *sericin* that coats the *fibroin* is not affected and is not denatured. The essential nature of it should be retained to the maximum. Although *sericin* is removed from silk hanks by degumming before dyeing – its presence is unavoidable while reeling. *Sericin* provides a good degree of agglutination of individual filaments and also for better cohesion. After stifling, the other processes included in the raw silk industry are cooking, reeling, degumming, re-reeling, spinning and grading. Raw silk yarn comes under the category of filament yarn. Raw silk yarn used for the manufacture of fabrics is found either in twisted or untwisted form. (Chowdhury, 1992). The second category of yarns is staple fibre yarns, which are produced by using the silk wastes generated in the process of reeling.

Next in the sequence comes silk throwing, silk twisting, silk weaving, fabric processing and finishing. Thrown silk or *gregge* consists of two or more threads of raw silk reeled together and given a slight twist. It is then a multi thread to give extra strength. Thrown silk is used for making *organzine* and *tram*. *Organzine* is produced from the best cocoons. It contains two or more strands each composed of a number of *gregges* twisted together lightly. These threads are then doubled and retwisted in the opposite direction to the original twist in the strands. *Organzine* is used for warp threads for which high tensile strength is required. *Tram* is usually made of cocoons from lower grade. Like *organzine*, it is composed of two or more strands of thrown silk lightly twisted together and then doubled. Only a light twist is subsequently given to the doubled yarn, yielding a bulkier product with less tensile strength. It is, therefore, eminently suitable for the weft component of woven fabrics. 'The primary threads or 'singles' produced by reeling has to go through the process of 'throwing.' Two or more singles are thrown together, spun and twisted into yarn. The weavers in England in the early part of

weaving revolution used to import the finer and more delicate *organzine* or warp yarns from Italy, which had the expertise of silk throwing and silk weaving (Chowdhury, 1992).

Raw silk twisting is an important part of the reeling industry. Twisting of silk requires a sequence of several processes. The processes include: (i) winding; (ii) doubling; (iii) twisting; and (iv) steam setting (Chowdhury, 1992).

This is in brief the production process of mulberry silk yarn. The reeling process of *muga* silk is explained in detail in the *appendix III.*

Classification of Processes into Groups and Major Groups

All these processes of the silk industry mentioned above are categorised in certain ways under the International Standard Industrial Classification (ISIC) and National Industrial Classification (NIC). In this study all the groups relating to silk under these classifications are considered to constitute the silk industry or the silk subsector.

International Standard Industrial Classification (ISIC)

Processes	ISIC code
Silkworm rearing and production of cocoons and raw silk	045
Spinning and weaving of silk textile in mills	260
Dyeing and bleaching of silk	261
Spinning of silk other than in mills	262
Weaving of silk textile by powerloom	263
Weaving of silk textile by handloom	264
Printing of silk textile	265
Manufacture of silk cordage, rope and twine	266

National Industrial Classification (NIC)

Processes	Major Groups
Silkworm rearing and production of cocoons and raw silk	026
Spinning, weaving and finishing of silk textiles	245
Printing, dyeing and bleaching of silk textiles	246
Silk and synthetic fibre textiles not elsewhere classified	249

National Industrial Classification (*NIC*), 1987 has incorporated the following changes in the previous classification:

Processes	Groups
Rearing of silk worms, production of cocoons and raw silk	027
Spinning, weaving and finishing of silk textiles other than in mills	244
Spinning, weaving and processing of silk textiles in mills	245
Bleaching, dyeing and printing of silk textiles	246

Census of India provides the information on workers at the three-digit code level on the basis of International Standard Industrial Classification and National Industrial Classification as discussed above. The silk textile subsector or the silk industry on the basis of these classifications includes different processes although there are differences not only between the two classifications but also within the same classification of NIC. The ISIC gives a detailed classification of processes for both mills and other than mills, which is not so in case of NIC. We have followed these classifications in the succeeding analysis.

2.3. Silkworm Rearing, Production of Cocoons and Raw Silk

Principal and Subsidiary Occupation

Census of India, 1931 provides distribution of total earners (principal occupation), total working dependants and total following occupation as subsidiary to other, gender-wise. According to it, silkworm rearing (Group 25) in Assam was a principal occupation of 19 persons only, all of whom were male workers. The number of working dependants was 48, out of which 38 were females. It was perhaps more important as a subsidiary occupation; that too for male workers because 218 persons followed silkworm rearing as an occupation subsidiary to other activities out of which only four were female workers. It was in the working dependant's category that this occupation was more important for female workers (Table 2.1).

Table 2.1: Silkworm Rearing as an Occupation or Means of Livelihood: Census 1931

District / State	Total earner (principal occupation)		Total working dependants		Total following occupation as subsidiary to other		All category i.e. total following occupation		
	Males	Females	Males	Females	Males	Females	Males	Females	Total
ASSAM	19	0	10	38	214	4	243	42	285
1) British Territory	19	0	10	38	214	4	243	42	285
SURMA VALLEY AND HILL DIVISION	2	0	0	0	0	0	2	0	2
Cachar	0	0	0	0	0	0	0	0	0
Sylhet	0	0	0	0	0	0	0	0	0
Khasi and Jaintia Hills (British)	2	0	0	0	0	0	2	0	2
Naga Hills	0	0	0	0	0	0	0	0	0
Lushai Hills	0	0	0	0	0	0	0	0	0
ASSAM VALLEY DIVISION	17	0	10	38	214	4	241	42	283
Goalpara	0	0	0	1	0	0	0	1	1
Kamrup	0	0	3	3	28	0	31	3	34
Darrang	0	0	0	1	0	0	0	1	1
Nowgong	1	0	0	0	1	0	2	0	2
Sibsagar	13	0	7	28	134	3	154	31	185
Lakhimpur	3	0	0	0	46	0	49	0	49
Garo Hills	0	0	0	5	5	1	5	6	11
SADIYA FRONTIER TRACT	0	0	0	0	0	0	0	0	0
BALIPARA FRONTIER TRACT	0	0	0	0	0	0	0	0	0
2) Manipur State	0	0	0	0	0	0	0	0	0
3) Khasi State	0	0	0	0	0	0	0	0	0

Note: Census, 1931 classified occupations into class, sub-class, order, sub order and group. For instance, Group (25): Silkworms

Source: Census of India, 1931, Volume III, Assam, Part II – Tables.

District-wise break-up of these figures show that in Sibsagar district alone the number of total earners, working dependants and total following occupation as subsidiary to other was around 70 per cent of the State total. Lakhimpur was the next important district. Although in Kamrup district (in which Sualkuchi lies) there was not a single person who practised silkworm rearing as a principal occupation, six persons were involved as working dependants and 28 persons practised this activity as a subsidiary occupation. Garo Hills and Khasi and Jaintia Hills are the other two districts, which later became the State of Meghalaya, where silkworm rearing was practised as an occupation by only a few persons.

The data on principal earners (see Table 2.1), working dependants and total persons following silkworm rearing as an occupation subsidiary to other reveal the following:

1. Level / scale of operation is very small.

2. Area of geographic concentration of silkworm rearing could be located in the administrative districts of Sibsagar, Lakhimpur, Kamrup, Garo and Khasi Jaintia Hills.
3. Silkworm rearing was predominantly practiced as a subsidiary occupation by male workers. Involvement of females was relatively higher in the working dependant's category. But, involvement of females as principal earners is not evident at all.

Census, 1941 provides the following information on silkworm rearing as a means of livelihood, which is based on Y-sample (2 per cent sample):

Table 2.2: Silkworm rearing as a means of livelihood in Assam: Census, 1941.

Gender	Independent or self supporting persons		
	Principal means of livelihood	Supporting means of livelihood of partly dependants	(2) + (3)
Males	100	100	200
Females	0	300	300
Total	100	400	500

Note: Province Assam excluding Garo Hills, Sadiya Frontier Tract and Balipara Frontier Tract.
Source: Census of India, Paper No.5, 1956. Means of Livelihood and Industries Tables.
Assam – 1941 census; On Y sample.

Nevertheless, comparing these two sets of data which are not strictly comparable since census 1941 information is based on Y sample (2 per cent sample): what appears to be common between the two sets of information is that silkworm rearing was practised prominently as a subsidiary occupation. We compare the two sets of data in the Table 2.3.

Table 2.3: Comparison on the basis of 1931 Census and 1941 Census

1931 Census category	1941 Census category (Estimates)
Total earners (principal occupation) Male = 19 Female = 0	Independent or self supporting persons with silkworm rearing as a principal means of livelihood. Male = 100 Female = 0
Total following occupation as subsidiary to other Male = 214 Female = 4	Independent or self supporting persons with silkworm rearing as a supporting means of livelihood of partly dependents Male = 100 Female = 300
Total working dependants Male = 10 Female = 38	No such category
All category Male = 243 Female = 42	All category Male = 200 Female = 300
Assam province includes these areas	Excluding Garo Hills, Sadiya and Balipara Frontier Tracts

It was a principal means of livelihood of only the male workers, as involvement of any female worker was not reported by either of the censuses. Involvement of females is evident in silk cocoon production as a subsidiary occupation.

The comparison (Table 2.3) shows that the total number of workers practicing silkworm rearing has increased from 285 to 500 during the ten-year period, 1931 to 1941. This increase in the total number of workers is due to a marked rise in the participation of female workers in silkworm rearing as a supporting means of livelihood. Contrarily, during the period, involvement of male workers practicing silkworm rearing as a subsidiary occupation has reduced, while it has grown in the principal occupation category.

Total employment of persons following silkworm rearing as a principal occupation together with the working dependants and those following the occupation as subsidiary to other occupation in 1931 was 285 persons for Assam. Since 1961, census of India provides information on silkworm rearing together with production of cocoons and raw silk. As household industry, silkworm rearing, production of cocoons and raw silk was practiced on a small scale during 1961. Excepting the unclassified ones, the entire silk cocoon producing units employed 2 to 5 persons. There were 13 such units in Assam. Besides these, 6 units were unclassified. If these units were also considered to employ 2 to 5 persons then the entire units together would employ between 38 to 95 persons throughout the State. In that year in United Mikir and North Cachar Hills, 22 persons were engaged in rearing of silkworms and production of cocoons and raw silk. Census 1971 has given the figures for main workers alone. According to it, there were 264 main workers engaged in silkworm rearing, production of cocoons and raw silk (Table 2.4). In 1991, the census figure for main and marginal workers involved in silkworm rearing and production of silk cocoons and raw silk was 1671 out of which 1619 were main workers. This indicates a growth in main workers during 1971 to 1991. Further 1991 census shows that this activity is practiced exclusively in rural areas as 86.7 per cent of the total workers are observed to be in rural areas. The proportion of female workers was 14.7 per cent in 1931, which declined further to 13.6 per cent in 1991. This reveals that it was largely the male workers, who practice this activity as a means of livelihood.

Table 2.4: Total workers and proportion of main workers practising silkworm rearing and production of silk cocoon and raw silk in Assam: 1931 and 1991.

Gender	Main and marginal Workers		Main workers		
	1931*	1991	1931* *	1971	1991
Persons	285	1671	19	264	1619
			(6.7)		(96.9)
Male	243	1443	19	245	1437
			(7.8)		(99.6)
Female	42	228	0	19	182
			(0.0)		(79.8)

Note: Figures in parentheses indicate percentage of main + marginal workers for the respective years.

* In 1931 census, workers are classified as total following occupation as principal occupation, working dependants and those following occupation as subsidiary to other. The data includes all the three categories.

* * 1931 information on main workers pertains to total earners who is following silkworm rearing as a principal occupation. It does not include the working dependants.

The geographical and administrative territory of Assam in 1931 is different from Assam in 1971 and 1991. In 1931, Sylhet, Manipur State, Lushai Hills, Naga Hills, Khasi & Jaintia Hills and Khasi States were part of Assam. The information in 1991 excludes these districts and States. However, excluding Khasi and Jaintia Hills (only 2 principal earners) this activity was not reported in any of these areas.

Sources:

Census of India, 1931, Volume III, Assam, Part II – Tables. Table X – Occupation or means of livelihood.

Census of India, 1961, Volume III, Assam, Part 1A – General Report, Part C: Household Industries in Assam.

Census of India, 1971, Series 1, Part II-B (ii), General Economic Tables; Table B-IV Part A – Industrial Classification of Persons at Work Other than Cultivation as Main Activity by Sex and Divisions, major Groups and Minor Groups.

Census of India, 1991, Series 1, India, Part III B – B Series, Economic Tables, Volume 5. Table B 14 (F): Industrial classification of main workers and marginal workers other than cultivators and agricultural labourers by sex and by section, division and group.

The proportion of main workers was 6.7 per cent in 1931 whereas it was 96.9 per cent as per census 1991 (Table 2.4). Proportion of female marginal workers has increased from 9.5 to 20.2 per cent during this period (Table 2.5). Contrary to this the proportion of male marginal workers has decreased from 88.1 to 0.4 per cent. Such trends are also evident when the absolute number of workers is observed. This means that importance of silkworm rearing and production of cocoons and raw silk as a principal occupation has increased over the decades especially among the male workers while females follow it predominantly as a subsidiary occupation. It is clear that increase in number of main workers was greater during the period 1971 to 1991 in comparison to the previous four decades from 1931 to 1971.

Table 2.5: Marginal workers and proportion of marginal workers out of total workers practising silkworm rearing and production of silk cocoon and raw silk in Assam: 1931 and 1991

	Marginal workers		Proportion out of total workers (main +marginal)	
	1931*	1991	1931	1991
Persons	218	52	76.5	3.1
Male	214	6	88.1	0.4
Female	4	46	9.5	20.2

Note: * Categorised as total following occupation as subsidiary to other. It does not include the working dependants.
Source: Same as Table 2.4.

Number of Families Engaged

Sericulture including the raw silk industry in Assam includes both mulberry and non-mulberry silk cultures. *Eri* and *muga* constitute the non-mulberry silk culture; the relative importance of which together in terms of number of families engaged is higher than mulberry silk culture (see Table 2.6). During the period 1991-92 to 1994-95 there is no change in the structure of the industry, as the share of individual types of silk cultures has remained almost the same. Of the three, the relative proportion of the number of families is highest under *eri* culture.

Table 2.6: Structure of the raw silk industry in Assam in terms of number of families engaged during 1991-92 to 1994-95.

Year	Number of villages	Number of families engaged in sericulture			
		Eri	*Muga*	Mulberry	Total
1991-92	8017	122672	26757	37407	186731
		(65.7)	(14.3)	(20.0)	(100)
1993-94	8067	124024	27209	37635	188868
		(65.7)	(14.4)	(19.9)	(100)
1994-95	8127	128021	29327	38763	196111
		(65.3)	(15.0)	(19.8)	(100)

Source: Handbook on Assam Sericulture at a Glance, 1995.

Under sericulture, all activities involved up to the production of cocoons and raw silk is included. It also includes the process of reeling. In all the three types of silk culture, the number of families engaged during the period 1991-92 to 1994-95 has increased gradually. Similarly the number of villages engaged in sericulture has also increased from 8017 to 8127 villages.

A notable feature, according to Department of Sericulture sources, is that sericulture is practised by most of the families as a subsidiary means of livelihood. But 1991 census shows

it as primarily main occupation of men. It was further maintained that sericulture is an activity that can be practised even in wastelands. However, in comparison to States like West Bengal and Karnataka, mulberry culture is not practised on a commercial scale in Assam, which constrains the availability of mulberry leaves. Mulberry cultivation is predominantly practised in homestead gardens by the rearers themselves on very small scale and primarily for self-consumption. Thus, lack of commercial plantations of not only mulberry but also non-mulberry host plants is a real hindrance to the growth of silk production in Assam.

As far as non-mulberry silk is concerned, Assam produces the highest quantity of *eri* and *muga* raw silk amongst all States in India. Even for these two types of non-mulberry silk cultures, there has not been any marked increase in production, largely attributed to lack of research focus during the previous decades. The focus had mostly been on mulberry silk culture.

There appears to be a wide gap between the above information on number of families engaged in sericulture provided by the Directorate of Sericulture, and that provided by Census on number of workers. One possible explanation could be that the Directorate's information includes all families engaged in sericulture irrespective of whether they have practiced it as an occupation or for self-consumption. The latter aspect might have been underestimated in the Census enumeration.

However, here arise the issues of growth potential, opportunities and constraints. Since there are a large number of families who practice sericulture as a subsidiary occupation and for self-consumption, there are constraints in production of raw silk on a commercial scale. The constraints could be technical, environmental, or economic. These issues need to be discussed in greater depth.

Area Under Silk

The total area under cultivation of silkworm food plants in Assam was 8534 hectares in 1996-97, an increase of around 40 per cent from 1992-93. Out of the total area, the respective share of mulberry, *eri, muga* and tasar was 28.5 per cent, 37.2 per cent, 33.7 per cent and 0.57 per

cent as shown in Table 2.7. Oak tasar was newly introduced and is under experimental stage. Share of area under mulberry has increased during the period.

Table 2.7: Area under silkworm host plant cultivation during 1992-93 to 1996-97 (in hectare)

Year	Type of silk worm host plant cultivation				Total
	Mulberry	Eri	Muga	Tasar	
1992-93	1681	2402	1952	49	6084
	(27.6)	(39.5)	(32.1)	(0.8)	(100)
1993-94	1749	2664	2099	49	6561
	(26.6)	(40.6)	(32.0)	(0.7)	(100)
1994-95	1950	2574	2302	49	6875
	(28.4)	(37.4)	(33.5)	(0.7)	(100)
1995-96	2267	2993	2624	49	7933
	(28.6)	(37.7)	(33.1)	(0.6)	(100)
1996-97	2433	3176	2876	49	8534
	(28.5)	(37.2)	(33.7)	(0.57)	(100)

Source: Office of the Director (North East), Central Silk Board (CSB), Guwahati, Assam.

Further, the Table 2.7 shows that during the period 1992-93 to 1996-97, area under cultivation of all the three types of silkworm food plants except tasar increased, by 44.7 per cent for mulberry, 32.2 per cent for *eri* and 47.3 per cent for *muga* food plants. However, there was not much change in the relative shares of each type.

Table 2.8: Location of silkworm food plant cultivation

Districts in decreasing order with highest area under cultivation (in hectare)					
Mulberry		*Eri*		*Muga*	
1991-92	1994-95	1991-92	1994-95	1991-92	1994-95
North Lakhimpur (187)	Karbi Anglong (163)	Kamrup (203)	Kamrup (238)	Goalpara (256)	Gaolpara (328)
Karbi Anglong (137)	North Lakhimpur (150)	Karbi Anglong (163)	Karbi Anglong (234)	North Lakhimpur (255)	North Lakhimpur (233)
Sibsagar (137)	Sibsagar (137)	Goalpara (162)	Sibsagar (209)	Dibrugarh (240)	Kamrup (194)
Nagaon (111)	Goalpara (111)	North Lakhimpur (159)	Goalpara (187)	Golaghat (172)	Jorhat (182)
Goalpara (110)	Nagaon (111)	Sibsagar (140)	Kokrajhar (171)	Sibsagar (166)	Golaghat (171)

Note: Figures in parentheses indicate area under silkworm food plants.
Here we have presented only the major districts in terms of area although silk worm food plant cultivation is scattered throughout all the districts in the State.
Source: Handbooks of Assam Sericulture at a Glance, 1993 and 1995.

Data on the distribution of area under silkworm food plants district-wise is available from official sources (Handbook of Assam Sericulture at a Glance, 1995). This information makes it clear that silk cocoon production is dispersed throughout the State in all districts. However, in the districts shown in Table 2.8, the area under cultivation was higher when compared to other districts during 1991-92 and 1994-95 (Table 2.8). North Lakhimpur and Karbi Anglong have highest area under mulberry cultivation. Kamrup district and Karbi Anglong have highest area under *eri* cultivation while North Lakhimpur and Goalpara have highest area under *muga* silk.

Production Structure of Silk Cocoons in Assam: 1992-93 to 1996-97

Mulberry silk cocoon production increased from 121 metric tons (M.T.) in 1988-89 to 298.1 M.T in 1993-94 but thereafter declined to 127.88 M.T. in 1996-97 (see Table 2.9). Similar increasing and then declining trend is observed in case of *eri* cut cocoons and *muga* reeling cocoons.

Table 2.9: Production Structure of Different Types of Silk Cocoons in Assam: 1988-89 to 1998-99.

Year	Type of silk cocoon production (in metric tons for mulberry & *eri*)			
	Mulberry reeling cocoon	*Eri* cut cocoon	*Muga* reeling cocoon (lakh nos.)	Tasar reeling cocoon (lakh nos.)
1988-89	121.0	429.00	2475.00	-
1989-90	167.0	430.00	3058.00	-
1990-91	199.0	447.00	3767.00	-
1991-92	200.0	499.00	3960.00	-
1992-93	202.3	518.00	3042.10*	2.22
1993-94	298.1	548.00	4237.00	1.62
1994-95	282.0	582.00	3775.00	0.65
1995-96	249.85	558.05	3656.21	3.29
1996-97	127.88	290.75	1845.65	0.48
1998-99	145.00	410.00	2950.00	-

Note: * The production figure for muga reeling cocoon as per Directorate of Sericulture was 33 crore numbers in 1992-93. Similarly, the production figure for mulberry silk cocoon was 2.15 lakh kg during 1992-93.
Sources: Handbook of Assam Sericulture at a Glance, 1995 for the years 1988-89 to 1991-92.
Office of the Director (North East), CSB, Guwahati, Assam for the years 1992-97.
Demonstration cum Technical Service Centre (DCTSC), CSTRI, CSB, Sualkuchi for the year 1998-99.

Figure 2.2: Trends in production of mulberry reeling cocoons and eri cut cocoons in Assam during 1988-89 to 1998-99

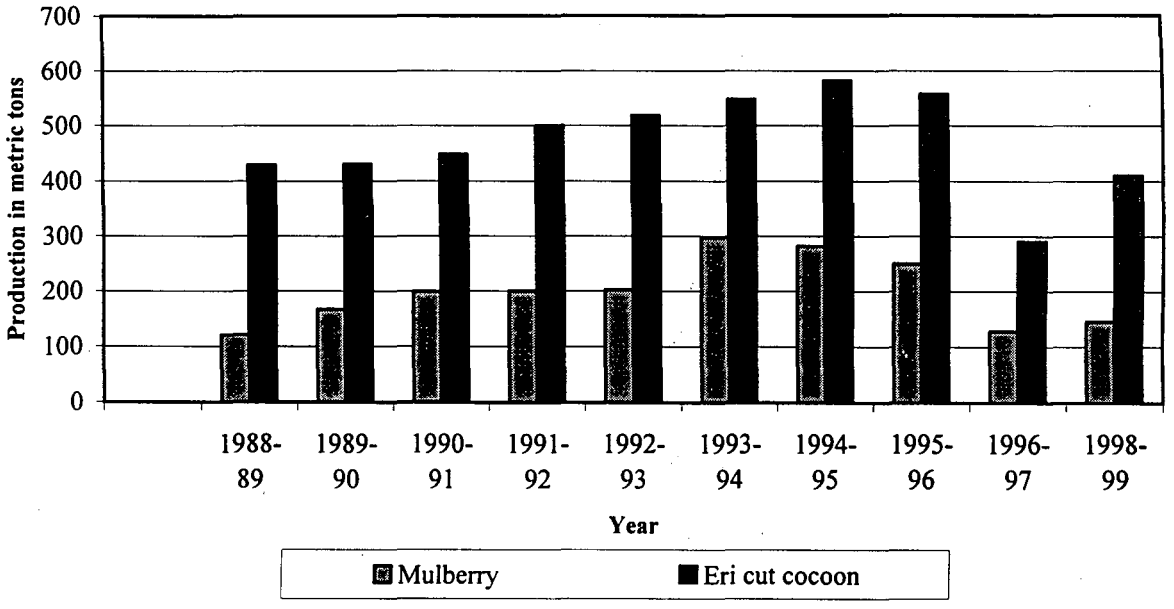
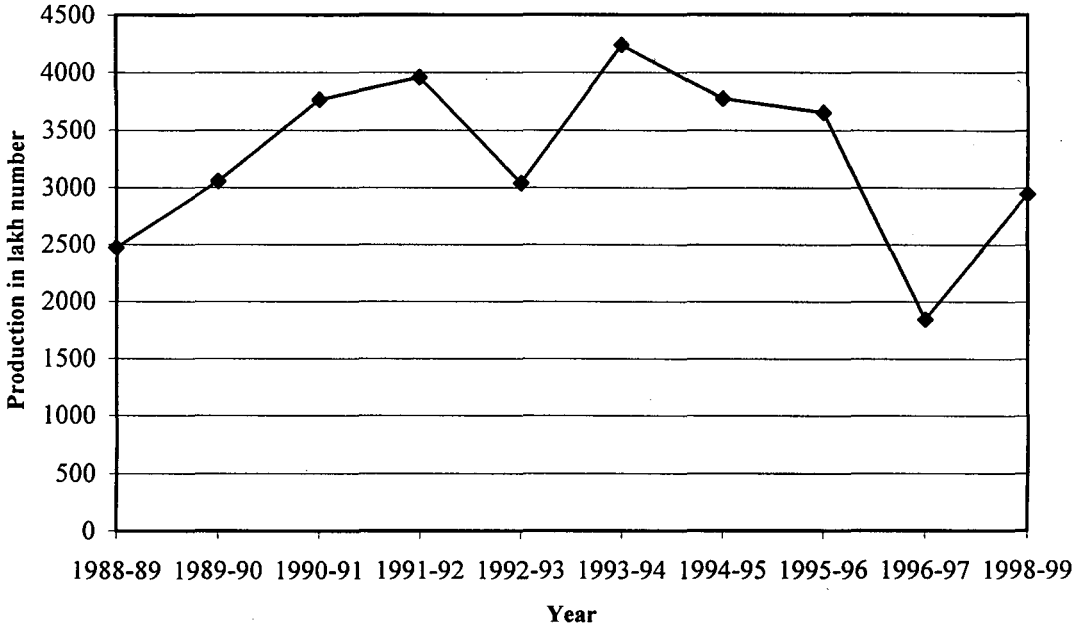


Figure 2.3: Trends in muga reeling cocoon production in Assam: 1988-89 to1998-99



Such a declining trend in all the types of silk cocoon production (Table 2.9 and figures 2.2 and 2.3) cannot be attributed to environmental factors and incidence of silkworm pests and diseases alone, as these are different cultures requiring different host plants and humidity–

temperature conditions. What is surprising is the sudden decrease in production of all the three major types of silk cocoon in the same year, 1996-97. However, for all the three types of silk cocoons, production has again shown an increase during 1998-99.

A comparison of the area under cultivation shown in Table 2.7 with the production data of silk cocoons reveals that the production of silk cocoons for all the three major types of silk shows a declining trend during the period 1992-93 to 1996-97 whereas, the area under cultivation for all these three types of silkworm host plants showed an increasing trend during the same period. This calls for further investigation.

Production of Silk Cocoons under Government and Private Sectors in Assam

Silk cocoons are produced both by government sericulture farms managed by Directorate of Sericulture as well as individual silkworm rearer families. The linkage between government sector and private sector is that government sector supplies seed cocoons and silkworm layings to individual growers and procures silk cocoons from them. However, silkworm rearers of Sibsagar and Lakhimpur districts purchase *muga* silkworm seed cocoon also from individual silkworm seed producers of Kamrup district and Garo hills. There is another type of linkage as well, provided by the grazing reserves owned and maintained by Directorate of Sericulture. Silkworm rearers are allowed to use these grazing reserves on the condition that both parties would share silk cocoons produced equally. In case of *eri*, seed cocoons are produced and preserved for future use by the rearers themselves.

The respective share of government and private sector in total silk cocoon production in the State is shown in Table 2.10. It shows that in the total production of silk cocoons in Assam, proportion of silk cocoons produced by the government sector is very small. During 1994-95, the share of private grower families in total silk cocoons production was 95 per cent for *eri* silk cocoon, 99.6 per cent for *muga* silk cocoon and 95.5 per cent for mulberry silk cocoon. The share of government sector in total cocoon production is lowest in case of *muga*. Further, its share in all the three types of silk cocoon production has been declining gradually during the period 1988-99 to 1994-95.

Table 2.10: Production of silk cocoons in government and private sectors in Assam: 1988-89 to 1994-95

Types of silk cocoon	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
1. Production of *Eri* cocoon							
(a) Government sector (%)	7.46	15.22	7.83	8.02	7.92	5.48	4.98
(b) Private sector (%)	92.54	84.78	92.17	91.98	92.08	94.52	95.02
(c) Total (in lakh kg)	4.29	4.30	4.47	4.99	5.18	5.48	5.82
2.Production of *Muga* cocoon							
(a) Government sector (%)	1.3	1.8	0.9	1.0	1.5	0.8	0.4
(b) Private sector (%)	98.7	98.2	99.1	99.0	98.5	99.2	99.6
(c) Total (in crores no.)	24.75	30.58	37.67	39.60	33.00	42.32	37.00
3. Production of Mulberry Reeling cocoons							
(a) Government sector (%)	10.7	7.2	9.1	6.0	7.4	4.1	4.5
(b) Private sector (%)	89.3	92.8	90.9	94.0	92.6	95.9	95.5
(c) Total (in lakh kg)	1.21	1.67	1.99	2.00	2.15	2.980	2.820

Source: Handbook of Assam Sericulture at a Glance, 1995.

Production Structure of Raw Silk and Spun Silk in Assam: 1992-93 to 1996-97

The sudden decline in the production of silk cocoons in 1996-97 and its revival in 1998-99 is also observed in case of raw silk production. This can be seen from the following Table 2.11. Total raw silk production in Assam, which was 527 metric tonnes in 1995-96 has gone down to around 266 metric tonnes in 1996-97 and recovered to 375 metric tonnes in 1998-99. The sudden decline in the production of raw silk in the year 1996-97 was because of the decline in the silk cocoon production, which has been discussed in the preceding section.

Table 2.11: Structure of raw and spun silk production in Assam during 1992-93 to 1998-99

(in metric tons)

Year	Type of raw / spun silk production				Total raw/spun silk
	Mulberry raw silk	*Eri* spun silk	*Muga* raw silk	Tasar raw silk	
1992-93	19.6	388.5	54.00	0.165	462.26
	(4.2)	(84.9)	(11.7)	(0.035)	(100)
1993-94	28.0	411.0	75.00	0.12	514.12
	(5.4)	(79.9)	(14.6)	(0.023)	(100)
1994-95	23.5	436.5	75.40	0.013	535.41
	(4.4)	(81.5)	(14.1)	(0.002)	(100)
1995-96	22.97	418.46	85.68	0.13	527.24
	(4.3)	(79.4)	(16.2)	(0.02)	(100)
1996-97	10.69	218.05	36.92	0.01	265.67
	(4.0)	(82.1)	(13.9)	(0.003)	(100)
1998-99	15.00	300.00	60.00	-	375.00
	(4.0)	(80.0)	(16.0)		(100)

Sources: Office of the Director (North East), CSB, Guwahati, Assam.
DCTSC, Sualkuchi, for the year 1998-99.

Figure 2.4: Trends in production of raw silk and spun silk in Assam: 1992-93 to 1998-99

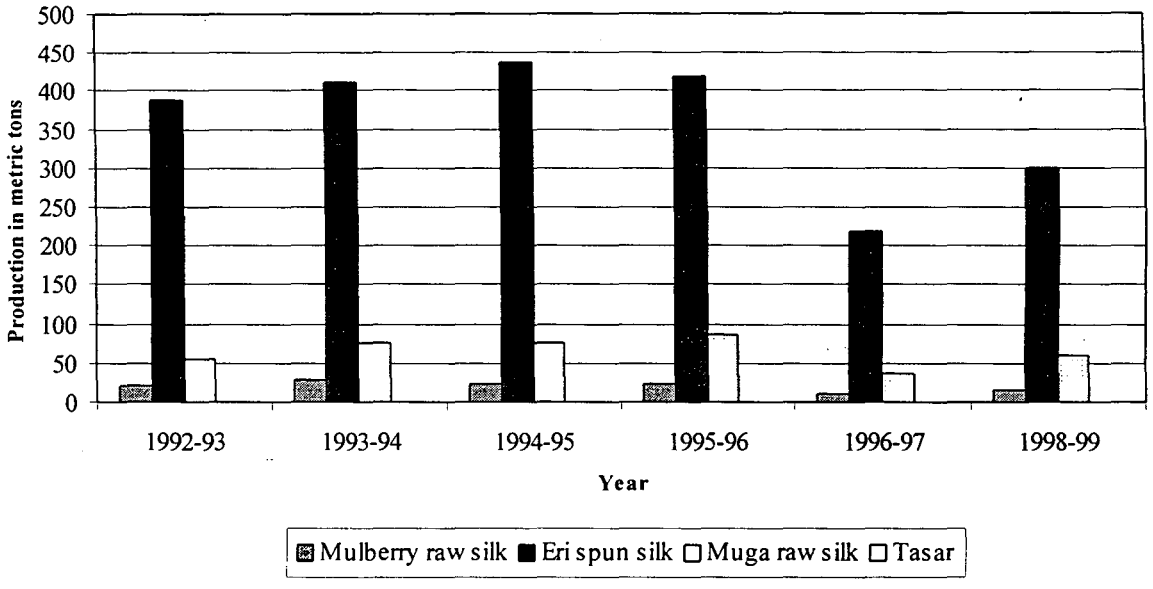


Table 2.11 and Figure 2.4 show that *eri* is the most predominant among the three major types of silk in Assam as its share in total raw silk production was 82 per cent in 1996-97. The share of *muga* silk was around 14 per cent while that of mulberry silk was only 4 per cent. However, during the period the decline in the share of *eri* spun silk was the sharpest.

Gap between Production and Consumption of Raw Silk

Consumption of commercial *eri* silk yarn was much lower than its production within the State whereas for *muga* plus tasar silk, commercial yarn production is much lower in comparison to its production. Table 2.13 gives a picture of the estimated demand - supply gap of silk yarn in Assam for a recent year:

Table 2.13: Demand supply gap of silk yarn in Assam: 1998-99 (in metric tons)

Type of silk	Commercial yarn production	Silk yarn consumption
Muga and Tasar	30.00	50.00
Mulberry	7.50	160.00
Eri silk	82.00	75.00
Total	119.50	285.00

Source: DCTSC, Sualkuchi, for the year 1998-99.

The consumption of mulberry silk yarn is highest in Assam among all varieties of silk. Its production within the State is less than five per cent of its consumption.

Geographical Location of Sericulture and Raw Silk Industry

As observed from 1931 census, in the districts of Sibsagar, followed by Lakhimpur, Kamrup and Garo hills the number of persons practising silkworm rearing, production of cocoons and raw silk as a means of livelihood was highest. This indicates that its concentration was also highest in these districts.

Household industries table of 1961 census showed that in United Mikir and North Cachar Hills, 22 persons were engaged in rearing of silkworms and production of raw silk. Census of 1931 did not show any person taking up silkworm rearing as a means of livelihood in Cachar district. Another interesting aspect observed from the 1961 census about the silkworm rearing and silk cocoon producing units is that these were located in two districts – Darrang and United Mikir and North Cachar Hills districts only (Table 2.14).

It is interesting to note that the occupation or means of livelihood figures of 1931 census (Table 2.1) depicted high concentration of employment of principal workers, working dependents and those following silk cocoon production as a subsidiary occupation in Sibsagar, Lakhimpur and Kamrup districts. In the Surma valley only 2 principal earners were reported and both of them were located in Khasi and Jaintia Hills district. In Darrang district, only one female was reported to have worked as a dependant. Thus, in the districts having concentration of silkworm rearing in 1931, no census house was used as factory or workshop for silk worm rearing etc in 1961, whereas, the district of Darrang showed remarkably low and United Mikir and North Cachar Hills showed no silkworm rearing in 1931. But all the census houses used as factories and workshops in Assam during 1961 were concentrated in these two districts only. This shows that during 1931 to 1961 there was a rapid spread of silkworm rearing in these two districts.

Table 2.14: Census houses used as factories and workshops classified by size of employment under the activity – rearing of silkworms and production of cocoons and raw silk (minor group 045 of ISIC) RURAL* - 1961

Size of employment	Number of Factories and Workshops		
	Assam	Darrang district	United Mikir and N.C.Hills district
Total	19	8	11
1 person	-	-	-
2 – 5 persons	13	8	5
6 persons and above	-	-	-
Unclassified	6	-	6

Note: None of the units were classified as using any form of power.
As per the census, factories and workshops in Assam are 'household industry'.
* all units are located in rural areas.
Source: Census of India, 1961, Volume III, Assam, Part IV, Report on Housing and Establishment.

Information on the number of households engaged in silkworm rearing and production of cocoons in the year 1998 as obtained from a survey of non-farm sector in Kamrup district shows that it is not the most important district as far as concentration of silkworm rearing is concerned. Although Kamrup is not an important centre of mulberry silkworm rearing, the following information is important to understand the raw material supply linkages.

Table 2.15: Block-wise distribution of number of households practising silkworm rearing in Kamrup District: 1998

Blocks	Number of sample villages	Number of households	
		Eri silkworm rearing	*Muga* silkworm rearing
Rani	4	0	0
Rampur	2	10	0
Chaygaon	7	94	30
Boko	10	53	16
Samoria	4	0	0
Hajo	4	10	0
Rangia	8	0	0
Kamrup district	51	167	46

Note: Those blocks where the sample villages did not report any of these activities are excluded.
It is possible that many of the households are engaged in both *endi* silk cloth weaving and *endi* spinning while they might have been reported separately resulting in an exaggeration of the figures under these two processes.
Source: District Potential Survey of Kamrup District, North Eastern Institute of Bank Management, Guwahati, 2000.
None of the households was engaged in mulberry silkworm rearing in Kamrup district. This means that only *eri* and *muga* silkworm rearing is practiced in the district, a larger number of households being engaged in *eri* silkworm rearing.

2.4. Silk Textile Industry in Assam

Silk textile industry constitutes all the important functions/processes like spinning, weaving, bleaching, dyeing, printing and finishing. The focus of this section is on changing size of the industry in terms of number of workers engaged in these processes. Structure of the industry is discussed in terms of principal and subsidiary occupation of workers, main and marginal workers and gender-wise distribution of workers. It also includes an analysis of the different forms of organisation in which the production process is carried out such as household and non-household industry, and mills, factories and workshops within non-household industry.

Principal and Subsidiary Occupation

Census of India 1931 presents district/State-wise information on Group (47) – silk spinning and weaving. Information pertains to total earners (principal occupation), total working dependants and total following the occupation as subsidiary to other.

Table 2.16: Workers engaged in silk spinning and weaving compared to workers under all classes of occupation: 1931

State / district	Category	Occupation			
		Total of all classes		Silk spinning and weaving	
		Male	Female	Male	Female
Assam	Total following occupation as:				
	Principal occupation	2534693	563897	101	176
	Working dependants	429249	652870	103	941
	Subsidiary to other occupation	457697	100236	120	35
Kamrup	Total following occupation as:				
	Principal occupation	274559	18450	98	148
	Working dependants	38381	125432	102	841
	Subsidiary to other occupation	23864	3517	120	20

Source: Census of India, 1931. Volume III, Assam, Part II – Tables, Table X. Occupation or Means of Livelihood, Part I – Provincial Summary.

Table 2.16 shows that the proportion of workers under silk spinning and weaving compared to total workers are small. In Kamrup district, 246 persons have practised silk spinning and weaving as a principal occupation out of which 148 are females. Similarly, out of 943 working dependants, 841 were females. Whereas, out of 140 persons who have practised silk

spinning and weaving as a subsidiary occupation, 120 are male. From this Table it is evident that the industry is concentrated in Kamrup district. In Table 2.17 we focus on the estimates for the silk industry in Assam and Kamrup district. It is interesting to note the following:

Of the three categories – total earners (principal occupation), total working dependants and total following occupation as subsidiary to other – it is the number of total working dependants that predominate in the silk spinning and weaving sector. There were 1044 persons working as dependants in Assam, out of which around 90 per cent are located in Kamrup district. Similarly, there were 277 persons working as principal earners and 155 persons were engaged in silk spinning and weaving as a subsidiary occupation.

In all categories excepting those following silk spinning and weaving as a subsidiary occupation, females outnumber males. This is true for Assam as well as Kamrup district. For men this activity is more important as a subsidiary occupation; in Kamrup out of 140 such persons, 120 are males (see Table 2.17).

Table 2.17: Silk spinning and weaving as a means of livelihood in Assam: 1931 Census

	Assam*			Kamrup district		
	Total	Male	Female	Total	Male	Female
Total following occupation	1476	324	1152	1329	320	1009
				(90.0)	(98.8)	(87.6)
Total earners	277	101	176	246	98	148
(as principal occupation)				(88.8)	(97.0)	(84.1)
- as working dependants	1044	103	941	943	102	841
				(90.3)	(99.0)	(89.4)
- as subsidiary to other	155	120	35	140	120	20
				(90.3)	(100.0)	(57.1)

Note: Figures in parentheses are percentage out of Assam separately for total, male and female.
* Assam including British Territory, Manipur State and Khasi State.
Source: Census of India, 1931: Volume III, Assam, Part II – Tables. Table X – Occupation of means of livelihood.

Census 1941 (based on the Y sample) provides detailed information on the subsidiary occupation of independent persons undertaking silk spinning and weaving as principal means of livelihood. It shows that it was principal means of livelihood of 2700 self-supporting persons and a supporting means of livelihood of 8200 partly independents. Of the total independent persons with silk spinning and weaving as a principal means of livelihood, 700 persons were not engaged in any subsidiary occupation. The details are shown in Table 2.18.

Table 2.18: Workers engaged in silk spinning and weaving according to category: 1941

S. No.	Category of workers	Silk spinning and weaving		
		Total	Male	Female
A.	Independent or self supporting persons	2700	400	2300
A-1	Principal means of livelihood			
A-11	Without subsidiary means of livelihood	700	300	400
A-12	With class A as subsidiary means of livelihood	400	0.0	400
A-13	With class B as subsidiary means of livelihood	1400	100	1300
A-14	With class C as subsidiary means of livelihood	-	-	-
A-15	With class D as subsidiary means of livelihood	-	-	100
B.	Supporting means of livelihood of partly independents	8200	100	8100

Note: class A – production of raw materials
class B – preparation & supply of material substances
class C – public administration & liberal arts
class D – miscellaneous
Estimates are based on Y sample
Assam province excluding Garo Hills, Sadiya Frontier Tract and Balipara Frontier Tract.
Source: Census of India. Paper No. 5, 1956. Means of Livelihood and Industries Tables, Assam – 1941 Census on Y –sample.

An observation of interest, however, is that the relative involvement of females in silk spinning and weaving both as a principal and subsidiary means of livelihood was considerably higher than males. While 8100 females are partly dependant on silk spinning and weaving as a subsidiary occupation, only 100 males are partly dependant on it. Similarly, there are 2300 self-supporting females against 400 independent males practicing it as a principal occupation. The relatively low proportion of self-supporting persons does indicate that there were constraints on its growth. However, a broad comparison with census 1931 implies a very sharp growth in number of persons engaged in silk spinning and weaving, from 1476 persons to over 10,000 in 1941.

Household (HHI) and Non-household Industry (NHHI)

By 1961, while the number of workers engaged in the textile industry was smaller than in 1941 (though higher than in1931), and we now get a break-up by household/non-household sectors. Information on workers provided by 1961 census shows that out of 1976 workers engaged in textile silk 1742 workers, (constituting 88.2 per cent) was enumerated under household industry. This segment is a more predominant form of production in Assam as can be seen from Table 2.19.

The detailed process-wise break up of the information on household and non-household industry is not available. Otherwise, it would have provided more information pertaining to the particular process of the industry where non-household industry is most predominant.

Table 2.19: Workers in household and non household textile: silk sector (I.S.I.C major group 26) compared to manufacturing and processing (division 2 & 3): 1961

Country/ State	Number of workers					
	Manufacturing and processing			26 – textile - silk		
	Total	HHI	NHHI	Total	HHI	NHHI
India	17906489	9931095 (55.5)	7975394 (44.5)	191016	119245 (62.4)	71771 (37.6)
Assam*	383525	279891 (73.0)	103634 (37.0)	1976	1742 (88.2)	234 (11.8)

Note: Figures in parentheses pertain to percentage of workers engaged in household and non- household industry.
Source: Census of India 1961, Volume I, India, Part IV-A (ii), Report on Industrial Establishments.

Workers engaged in the household silk textile industry were also involved in some secondary occupations. This is shown in the Table 2.20.

Table 2.20: Persons working principally at household industry in Assam classified by gender and by secondary work as cultivator or as agricultural labourer: 1961

Division or major group	Secondary work					
	As cultivator			As agricultural labourer		
	Total	Male	Female	Total	Male	Female
Household industry	23797	1641	22156	5330	694	4636
Manufacturing	23781	1627	22154	5329	693	4636
Textile silk	224	1	223	3	-	3

Source: Census of India 1961, Volume I, India, Part II – B (iii), General Economic Tables.

Of the 1742 workers engaged in the household silk textile industry, 224 workers were involved in cultivation and only 3 workers were working as agricultural labourers. It means that the degree of integration of the household silk textile industry with cultivation was low in 1961. More over, what is interesting to note is that almost all workers with secondary work were women.

Distribution of total workers in household and non-household industry (Table 2.21) shows that in spinning, weaving and finishing of silk textiles other than in mills, the proportion of workers is around 80 per cent in household industry. In other processes (groups 245 and 246),

proportion of workers is remarkably higher in non-household industry than household industry.

Table 2.21: Total workers, workers in household and non-household industry in Assam classified by division and group: 1991 Census

Section, division & group of N.I.C – 1987		Total workers	Household industry	Non-household industry
Division 24	Manufacture of wool, silk and man – made fibre textiles	9171	5659 (61.7)	3512 (38.3)
Groups 244 + 245 + 246		5716	4097 (71.7)	1619 (28.3))
Group 244	Spinning, weaving and finishing of silk textiles other than in mills	5121	4084 (79.8)	1037 (20.2)
Group 245	Spinning, weaving and finishing of silk textiles in mills	473	0	473 (100)
Group 246	Bleaching, dyeing and printing of silk textiles	122	13 (10.7)	109 (89.3)

Source: Census of India, 1991, Series 4 – Assam, part III B – B Series, Economic Tables, Volume-3, Tables B-15 (i)]

The Table 2.21 shows that the share of non-household industry, which was 11.8 per cent in 1961, has gone up to 28.3 per cent in 1991.

Workers by Processes of Production

The production process in household silk textile industry includes dyeing and bleaching of silk, spinning of silk other than in mills and weaving of silk textile by handlooms as shown in the Table 2.22. Weaving of silk textile by handloom was the predominant process as around 70 per cent of the household industry workers were engaged in this process alone.

Table 2.22: Distribution of persons engaged in household industry in Assam according to processes: 1961 Census

Processes/Functions	Number of workers	Per cent
Dyeing & bleaching of silk	135	7.7
Spinning of silk other than in mills	388	22.3
Weaving of silk textile by handlooms	1216	69.9
All processes	1739	100.0

Source: Census of India, 1961, Vol. III, Assam, Part 1 A – General Report.

Census 1991 gives a detailed picture of the workers engaged according to three-digit level of industrial classification separately for main and marginal workers.

Table 2.23: Total workers, main workers and marginal workers other than cultivators and agricultural labourers in Assam classified by division and group: 1991 Census

Section, Division & Group of N.I.C - 1987		Total workers	Main workers	Marginal workers
Section 2 & 3	Manufacturing	299836	279116	20720
			(93.1)	(6.9)
Division 24	Manufacture of wool, silk and man – made fibre textiles	9171	7844	1327
			(85.5)	(14.5)
Groups 244 + 245 + 246		5716	4911	805
			(85.9)	(14.1)
Group 244	Spinning, weaving and finishing of silk textiles other than in mills	5121	4328	793
			(84.5)	(15.5)
Group 245	Spinning, weaving and finishing of silk textiles in mills	473	465	8
			(98.3)	(1.7)
Group 246	Bleaching, dyeing and printing of silk textiles	122	118	4
			(96.7)	(3.3)

Note: Figures in parentheses indicate percentage to total workers in respective section, division and group. Work includes unpaid work on family and family enterprise. Those workers who had worked for the major part of the year (i.e. 6 months or 183 days or more) are termed as 'Main Workers'. A person may have worked for six months or 183 days or more in one or more than one activity. In this case, the main activity is the one in which he/she has spent more time. The other work is the secondary or marginal work.
Source: Census of India, 1991. Series 1 – India, Part III B – B Series, Economic Tables, Volume 5, Table B – 14 (F): Industrial classification of main workers and marginal workers other than cultivators and agricultural labourers by sex and by section, division and group.

The total workers in the groups of NIC –1987 pertaining to silk textile (groups 244+245+246) was 5716 out of which the proportion of main workers was 85.5 per cent (Table 2.23). Among these three groups, the number of workers was highest in spinning, weaving and finishing of silk textile other than in mills (group 244). It constitutes 89.6 per cent of the total number of workers engaged in silk textile industry. Moreover, in this group i.e. spinning, weaving and finishing of silk textiles other than in mills, the proportion of main workers was 84.5 per cent. The proportion of workers engaged in spinning, weaving and finishing of silk textiles in mills was as low as 8.3 per cent.

Gender-Wise Distribution of Workers

Among all the processes of the silk textile industry, it is interesting to note that the proportion of female workers is higher than that of male workers in spinning, weaving and finishing of

silk textiles other than in mills (Table 2.24). But the involvement of female marginal workers is much higher than male marginal workers in almost all processes of the industry, excepting bleaching, dyeing and printing of silk textiles where involvement of both male and female workers is almost equal.

Table 2.24: Proportion of female workers in total workers and in main and marginal workers other than cultivators and agricultural labourers in Assam classified by division and group: 1991 Census

Section, division & group of N.I.C – 1987	Total workers	Female workers		
		Total	Main workers	Marginal workers
Manufacturing	299836	60881	43142	17739
		(20.3)	(15.5)	(85.6)
Manufacture of wool, silk and man – made fibre textiles of which:	9171	4712	3439	1273
		(51.4)	(43.8)	(95.9)
Silk Textile Industry	5716	3055	2284	771
		(53.4)	(46.5)	(95.8)
Spinning, weaving and finishing of silk textiles other than in mills	5121	2974	2211	763
		(58.1)	(51.1)	(96.2)
Spinning, weaving and finishing of silk textiles in mills	473	71	65	6
		(15.0)	(14.0)	(75.0)
Bleaching, dyeing and printing of silk textiles	122	10	8	2
		(8.2)	(6.8)	(50.0)

Note: For column 3, figures in parentheses indicate percentage to total workers.
For columns 4 & 5, figures in parentheses indicate percentage of female main and marginal workers to total main and marginal workers respectively.
Source: Same as Table 2.23.

Growth of the Industry

In trying to trace the growth of the silk textile industry in Assam, it may be remembered that Census of India 1931 did not provide any figure for number of workers involved in processes other than silk spinning and weaving in Assam. This suggests that the other processes were not carried out in Assam or these were integrated with spinning and weaving. Comparing the above figure provided in the 1931 Census with the number of workers involved in the textile – silk (I.S.I.C major group 26 in Table 2.19) industry as provided by 1961 census, it is clear that employment under the industry, which was 1476 in 1931 increased to 1976 during 1961, registering some increase.

On comparison with the 1941 census, however, the number of workers shows a sharp decline from 10,900 to 1,976. Broadly then it suggests that employment in the industry grew during the period 1931 to 1941; however, it started to decline during the period 1941 to 1961.

Table 2.25: Growth in employment of total workers engaged in silk textile industry in Assam: 1931 to 1991

Year	Number of workers	Change over 1931	Change over the preceding period
1931*	1476	0	0
1961**	1976	500	500
1991***	5716	4240	3742

Note: * Data pertains to British territory. There was no worker reported in Surma Valley and Hill Division. Hence, the information relates to Assam Valley Division.
Information on workers is sum of workers involved in silk spinning and weaving as principal and subsidiary occupation and includes working dependants.
** 26 textile – silk of ISIC which includes spinning, weaving, dyeing, bleaching and printing in mills and other than mills.
*** Groups 244+245+246 of NIC – 1987

Keeping the limitations of our data in mind, the all inclusive estimates by the different censuses broadly reveal an increase of 4240 workers in the silk textile industry in Assam during the period 1931 to 1991. This increase excludes the employment in silkworm rearing, production of cocoons and raw silk. Further, much of this increase is observed in the period 1961 to 1991, which can be seen, in Table 2.25.

Location of Silk Textile Industry in Assam

As already shown in the preceding pages, 90 per cent of the persons practising silk spinning and weaving as a means of livelihood were concentrated in Kamrup district. Together with the information on silkworm rearing in 1931 certain interesting observations may be made. As for example, according to 1931 census, Sibsagar was the most important district in terms of number of principal earners, working dependants and those following silkworm rearing as an occupation subsidiary to other, which was immediately followed by Lakhimpur and Kamrup districts. However, we again observe that silk spinning and weaving was practised as an occupation in Sibsagar and Lakhimpur districts on a very low scale relative to Kamrup district. On the other hand, although both silkworm rearing and silk spinning and weaving were practised in Kamrup district, silk spinning and weaving was the more predominant activity when compared to silkworm rearing with regard to the number of workers involved. So, it is very clear that districts that rear silkworm do not spin and weave on a comparable

scale. This means that substantial portion of the silk cocoon production of Sibsagar and Lakhimpur districts were consumed in Kamrup district. Further, the Census houses used as factories and workshops for weaving of silk textile by handlooms were concentrated in Hajo Police Station (P.S.), which is located in Kamrup district of Assam (Table 2.26). As many as 53 Census houses (out of 56 in Assam) were located in Hajo P.S.

Table 2.26: Census houses used as factories and workshops for weaving of silk textile by handloom (ISIC code 264): 1961 Census

State / District / P.S.	Number of Factories and Workshops
Assam	56
Kamrup district	54
Hajo Police Station (P.S.)	53

Note: According census notes, factories and workshops in Assam may really mean a very primitive form of working place such as simple hut and relate to household weaving. Only those workshops can be really called factories in Assam, which use some, kind of fuel to generate power.
Source: Census of India, 1961. Volume III, ASSAM, PART IV, Report on Housing and Establishment.

Distribution of workers engaged in the silk textile industry (Table 2.27) also shows that it is in Kamrup district that the maximum number of workers was employed. A look at the different processes, moreover, shows that weaving of silk textile by handlooms was concentrated in Kamrup district of Assam. However, spinning of silk other than in mills was concentrated in Goalpara district followed by Kamrup district.

Table 2.27: Number of persons engaged in household industry in different districts of Assam: 1961 Census

District	Functions / Processes			
	Dyeing and bleaching of silk	Spinning of silk other than in mills	Weaving of silk textile by handlooms	Total
Goalpara	-	172	22	194
Kamrup	1	138	446	585
Darrang	-	26	56	82
Lakhimpur	-	4	98	102
Sibsagar	-	38	10	48
Cachar	1	5	115	121
Garo Hills	-	1		1
United Khasi-Jaintia Hills	-	-	13	13
United Mikir & N.C. Hills	61	4	455	520
Mizo Hills	72	-	1	73

Source: Census of India, 1961, Vol. III, Assam, Part 1 A – General Report.

In 1991 Census, the proportion of workers engaged in silk textile industry (groups 244+245+246) in Kamrup district is around 60 per cent (i.e. 3416 out of 5716) of the total workers engaged in these three groups in Assam.

The Demonstration cum Technical Service Centre (DCTSC), Central Silk Board, Sualkuchi, estimated the total number of commercial silk looms in Assam during 1998-99 to be 12500. It is interesting to note that according to the DCTSC, all of these are located in Kamrup district. What is more interesting to note is that out of the total number of commercial silk handlooms, the number of mulberry silk looms is 8000, which constitutes around 66 per cent of total number of looms. And, all the 8000 commercial mulberry silk handlooms are located within Sualkuchi Development Block of Kamrup district. This shows that Sualkuchi is the most important silk weaving cluster in Assam. We now examine the silk weaving industry in Sualkuchi in the following chapters.

Chapter III

GROWTH OF THE SILK INDUSTRY IN SUALKUCHI

3.1. Introduction

Sualkuchi is a historically known centre of silk weaving at least since the seventeenth century. The process of growth in the number of weaving establishments, its dispersion outside Sualkuchi and the growth of the non-household sector in the industry, which as we shall see includes bigger manufactories can be understood through an analysis of the historical processes. Although the cloth dealers of Sualkuchi have developed marketing linkages with the *eri* silk weavers of South Kamrup, *eri* silk is not woven in Sualkuchi (*Appendix IIIi*). Weaving of tasar silk is a comparatively recent introduction. Sualkuchi also specialises in reeling of *muga* silk although silkworm rearing is not practised here (*Appendix IIi*). It depends on other production regions within the State as well as outside the State for supply of *muga* silk cocoons, and mulberry/tasar silk yarn. Since decades back it has developed raw material supply linkages with places as far as Karnataka, Surat, Salem, Varanasi and Kolkata. In this chapter, the objective is to examine the size and growth of silk industry in Sualkuchi in terms of number of looms, workers and weaving establishments. Our attempt is to trace the broad trends and capture the pattern of growth in the silk industry in Sualkuchi. The discussion is contextualised within a brief historical account of the industry.

Origin of Silk Weaving at Sualkuchi

The origin of the silk weaving industry at Sualkuchi is linked to the existence of a professional weaving community known as *tanti* since 17th century. *Tantis* did not represent any caste group in Assam[1]. It is possible that the present market area of Sualkuchi, which was earlier known as *Tantipara*, got its name after the *tantis* of Sualkuchi, who inhabited it a long time back[2].

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[1] Kalita (1998). *Sualkuchir Tanti Silpar Itihas*, Singkhap, Assam Samabai Resham Pratisthan Ltd., p.11, Guwahati.

[2] Baishya (1998). *The Silk Industry of Sualkuchi – Its History and Technology*, Souvenir of the Golden Jubilee of Assam Samabay Resham Pratisthan, page 72, Ed. Bhriguram Das, Sualkuchi.

Conversion of Trade Capital into Manufacturing Capital and the Rise of Small Karkhanas

Baishya (2000) has mentioned that there was a class of traders in Sualkuchi called *mudois*, who were famous for trade and commerce. *Mudois* used to trade precious stones, *singhap, makhmal (*velvet*)*, pat, *muga* cocoons, mustard and rice. In due course, *mudois* converted their trading capital into *karkhanas* for weaving silk cloth[3]. According to him, this trading class too transformed into *tantis*. Hence, *tantis* in Sualkuchi did not represent any caste group. Later, from them rose the *mahajans* who started engaging hired weavers. In the course of time another class of hawkers - ferriwalas emerged whose function was to purchase silk cloth from the weavers by either paying cash or credit and to sell these to customers or cloth shop owners. From amidst them, some transformed into *mahajans*.

Elsewhere, in Kalita (1998), it is mentioned that because of the suggestion made by Sundaram, who was the principal of Weaving School of Assam Government at that time, Kaliram Karikar established 'Govind Silk Weaving Factory' during the 1930s. During the same period, late Harbilas Karikar established 'Sankardev Silk Weaving Factory' and late Mahiram *mahajan* and late Parasuram *mahajan* established 'Tarun Silk Weaving Factory' because of increase in the speed of weaving and ease in designing as a consequence of the introduction of fly shuttle and jacquards respectively.

At the suggestion of some English officer, Sri Kaliram Karikar introduced the fly shuttle loom into Sualkuchi during World War II. Similarly, jacquards and dobbies were also introduced in Sualkuchi during the 1930s.

Changes in the Occupation Structure

After World War II, communities other than *tantis* too started practising silk weaving (Baishya, 1998). As a consequence, silk weaving replaced other occupations like goldsmithy, pottery, fishing, priesthood and activities like oil pressing industries. Our analysis in the preceding chapter on the growth of silk spinning and weaving in Assam also shows a growth in number of workers during 1931 to 1961.

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[3] Baishya (2000), "*Sualkuchir Artha Samajik Drishya – Eti Dristipat*," Smaranika, p. 22, Kamrup Jila Sanbadik Santha, Dasham Varsha, Ed. Munin Kakoty and Ramesh Bharali.

Immigration of Weavers and Other Workers to Sualkuchi

The process of immigration of female weavers of *Bodo* community from the same and adjoining districts into Sualkuchi began during the1980s (Baishya, 1998). According to Kalita (1998), around 97 per cent looms in Sualkuchi are operated by weavers who have immigrated to Sualkuchi and a large proportion of them are female weavers of *Bodo* community. Over the years, a number of schemes (Special Employment Programme, Export Oriented Handloom Development Project, Project Package Scheme, etc.) for the benefit of the weavers was implemented in Sualkuchi by the government. While these schemes have helped a number of wage weavers to become master and entrepreneur weavers, to work at their looms, a new working class has emerged, most of them being migrants (Das, 2000). According to Baishya, most of these schemes had little impact on the industry and the schemes remain defunct since the eighties. Whatever development is there in the silk industry is due to the entrepreneurship of the local artisans, who through tradition and knowledge passed over from generation to generation have expanded the scale of production.

Establishment of Co-operatives

Formation of co-operative societies in the Sualkuchi silk industry started first in the British period as primary societies although the co-operative mode of organisation in the silk industry was not the first to be formed there. It was in the sphere of distribution of food and other commodities that collective form of organisation first developed. Thus, the development of co-operatives in Sualkuchi has a much longer history, which began in trade in agricultural commodities. However, during the pre-independence era, there is mention about the formation of a *muga* yarn company under the leadership of Gandharam Pandit in Sualkuchi which was meant to facilitate trade with Calcutta and Dacca[4]. Thereafter, the expansion of co-operative form of production in the silk industry in Sualkuchi got a momentum particularly during the decade of the 1950s (see Table 3.1).

[4] Shri Amulya Chandra Kalita, 1998. Sulkuchi aru iyat samabayar kramabikas in *Singkhap*, Assam Samabai Resham Pratisthan Limited, Guwahati, p. 42.

Table 3.1: Co-operative societies in Sualkuchi during 1961

Sl. No.	Name of the co-operative society	Year of registration	Number of Share holders	Artisan members
1.	Assam Silk House	1941	66	50
2.	Assam Samabai Resham Pratisthan Ltd.	1949	152	100
3.	Sualkuchi Muga Spinners and Weavers Co-operative Society	1954	81	81
4.	Sualkuchi Bhatipara Muga Spinners Co-operative Society Ltd.	1954	52	52
5.	Bamun Sualkuchi Silk Samabai Samity Ltd.	1957	59	59
6.	Madhya Sualkuchi R.S.S.	-	127	127
7.	Purba-Sualkuchi Sambay Pratisthan	-	-	-
8.	Sualkuchi Patmuga Palupoha Samabay Samity Ltd.	-	-	-

Source: Census of India 1961, Volume III, Assam, Part VII A , *Selected Handicrafts of Assam*, p-48.

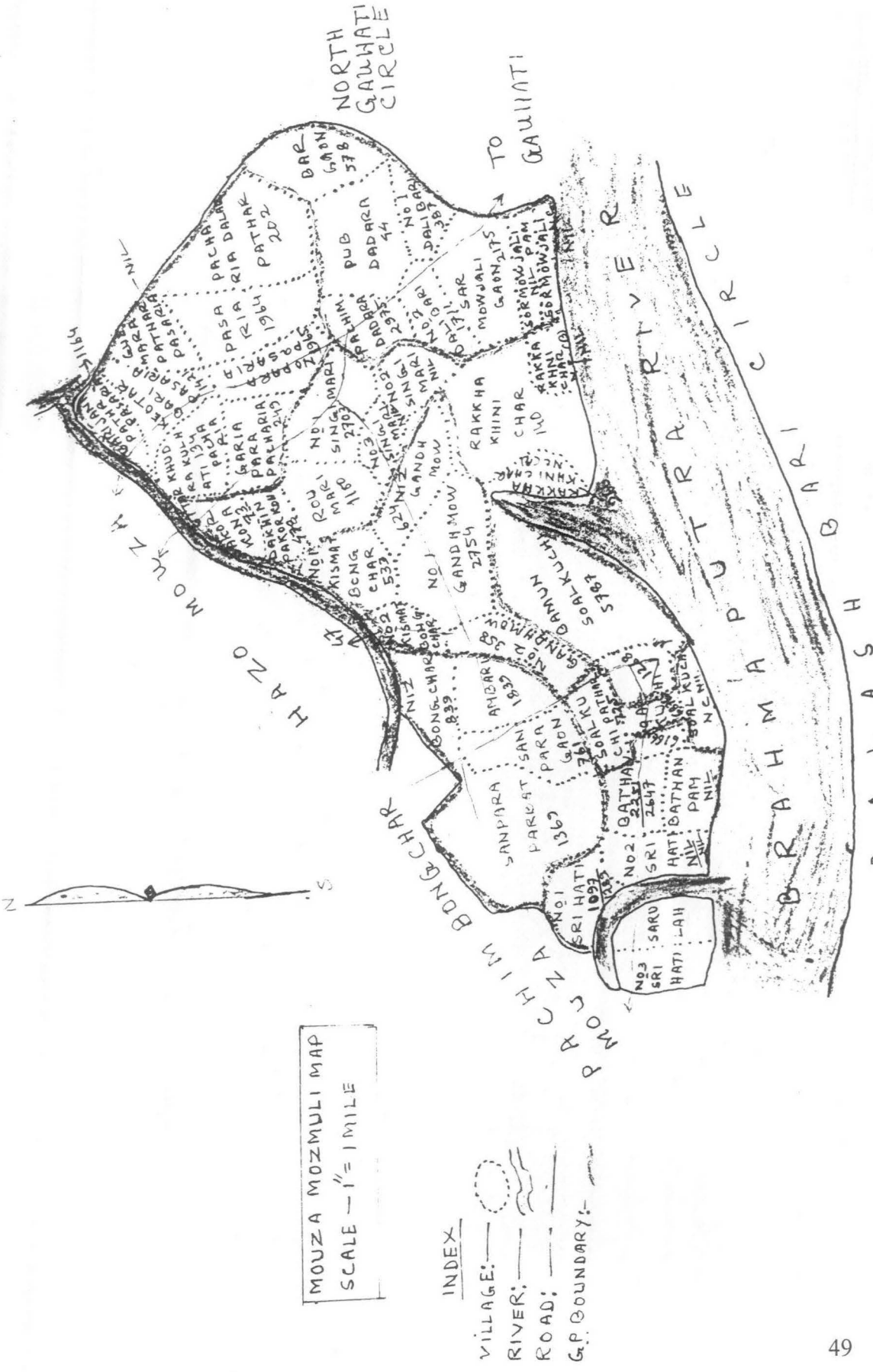
Out of these eight co-operative societies registered under the Department of Handloom and Textile, which was earlier known as Department of Sericulture and Weaving, six were functioning till 1961. *Purba Sualkuchi Resham Samity Ltd.* and *Sualkuchi Pat-Muga Palupoha Sambay Samity Ltd.*, however, were not functioning at that time. The total number of members enrolled in all these societies was estimated to be 630, which represented over one third of the weavers. Around 1000 weavers were still working outside the co-operative form of organisation.

Process of Dispersion of Mulberry and Muga Silk Weaving Establishments Outside Sualkuchi

The process of dispersion of silk weaving is evident outside Sualkuchi not only in adjoining villages but also beyond it. Initially, silk weaving might have been localised in *Tantipara*, which is identified as the present market area of Sualkuchi (see census town of Sualkuchi in *map 6*). In due course of time, master weavers from Sualkuchi started to engage workers from nearby villages in the weaving establishments as hired weavers and helpers. Later, after acquisition of silk weaving skill and working for many years with the master weavers, many of these hired workers established own weaving establishments in nearby villages and they too became master weavers in due course of time.

In this way the silk weaving industry expanded into nearby villages such that these villages adjoining Sualkuchi constitute now a continuous area of silk weaving establishments. The

villages into which the expansion of the industry occurred include Bathan, Lah, Bangsar, and Bamundi. These villages together with Sualkuchi are shown in *map a.*



The expansion of the industry has occurred even outside the Sualkuchi development block and a number of weaving workshops are scattered throughout the district which was revealed by the District Potential Survey of Rural Non-Farm Sector in Kamrup District, 2000. All the master weavers owning these workshops have worked in Sualkuchi initially and have maintained their linkages with Sualkuchi. The following information on the number of *pat* and *muga* weaving establishments in Kamrup district shows that there has been a dispersion of *pat* and *muga* silk weaving even outside Sualkuchi development block into other parts of the district.

Table 3.2: Number of mulberry and *muga* silk weaving establishments in a few sample villages of Kamrup district: 1998-99

Development Blocks	Number of sample villages where enumeration of non-farm activities was done	Number of pat and muga silk weaving establishments enumerated in the sample villages
Rani	4	1
Rampur	2	0
Chaygaon	7	1
Boko	10	3
Samoria	4	1
Hajo	4	9
Rangia	8	2

Note: The blocks where the activity was not reported in the sample villages are not included in the Table. None of the villages those were randomly selected in the sample was under Sualkuchi development block. Hence, the above information pertains to silk weaving establishments outside Sualkuchi.
Source: District Potential Survey of Rural Non Farm Sector in Kamrup District, 2000.

The average number of workers engaged in these workshops (not shown here) is 8 full time adult male equivalent out of which the number of hired workers is 6 and family members is 2. In Rani development block, while non-farm activities were enumerated in four sample villages, there was only one establishment engaged in silk weaving (mulberry and *muga*). This means a relatively low concentration of silk weaving in this block compared to Hajo development block. Similarly, in Rampur, Chaygaon and Samoria too, the concentration of silk (mulberry and *muga*) weaving is relatively lower. Whereas, in Hajo development block, which is nearer to Sualkuchi, the concentration of mulberry and *muga* silk weaving is relatively higher.

One of the reasons for the expansion of the industry outside Sualkuchi is the availability of dyed *pat* yarn in the market. Earlier the industry was localised because the traditional

knowledge on dyeing *pat* silk yarn was confined to the master weaver section of Sualkuchi. Another reason is the acquisition of *pat* silk weaving knowledge by hired workers who became skilled weavers after working as apprentices in Sualkuchi, and started their own weaving establishments when they moved out of Sualkuchi.

Sualkuchi was historically a village of commercial silk weaving. In 1961 Census, Sualkuchi village together with Sualkuchi Parbat and Bamun Sualkuchi were grouped to form the new township of Sualkuchi (*map b*). Thus, it became a census town in 1961, which was located in Hajo Police Station (P.S.); the concentration of silk spinning and weaving as per 1961 census observed in Hajo P.S. pertains to Sualkuchi silk weaving cluster. Sualkuchi town covered an area of 0.52 square miles and had 2061 households with a population of 12087 according to the 1961 census. Now, according to 1991 census, Sualkuchi is a census town and a new Development Block named Sualkuchi is formed. Sualkuchi does not produce silk cocoons. The specific details of various processes carried out in Sualkuchi are explained in brief in the *appendix IIIi*.

3.2. Number of Looms

There were 1200 handlooms in Sualkuchi according to the Report of the Handicrafts, Census of India 1961. According to a survey, there were 2165 handlooms in 1970-71 and 2998 handlooms in 1980-81 at Sualkuchi.[5] Again, as per the Report of the Planning Forum, S.B.M.S. College, Sualkuchi, 1978, '2290 handlooms were engaged in the production of silk cloth.' It is evident that the number of looms in the Sualkuchi silk weaving industry has been showing a gradual increase till 1981.

In March 2000, during a field visit, it was found by Das (2000) that there were about 15,000 looms in operation and an equal number of wage paid weavers engaged in reeling and weaving of *muga* and silk fabrics. Besides, there are 3000 master and entrepreneur weavers in the town. Eighty per cent of the weavers in the town are women most of whom are migrants. Thus, the increase in the number of looms has continued and is more rapid since 1980s in comparison with the preceding period.

[5] Baishya, P. 'Small and Cottage Industries, A study in Assam,' 1989.

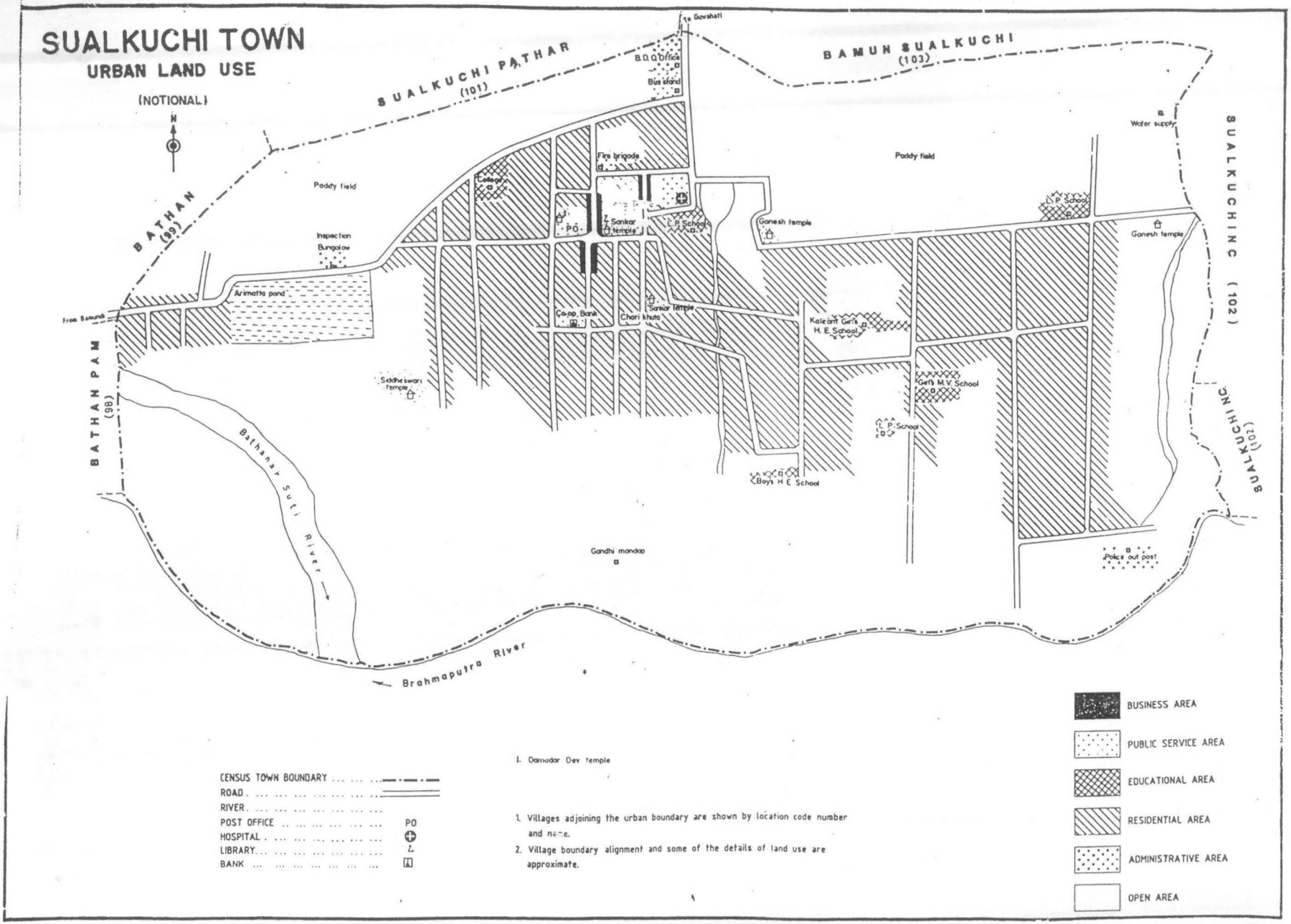

SUALKUCHI TOWN
URBAN LAND USE
(NOTIONAL)
N
SUALKUCHI PATHAR (101)
BAMUN SUALKUCHI (103)
SUALKUCHING (102)
BATHAN (99)
BATHAN PAM (98)
To Guwahati
B.D.O. Office
Bus stand
Water supply
Fire brigade
College
Paddy field
Inspection Bungalow
P.O.
Sankar temple
L.P. School
Ganesh temple
Arimatta pond
From Baksundi
Co-op. Bank
Chari khuta
Sankar Temple
Kalarant Girls H.E. School
Siddheswari temple
Girls M.V. School
Boys H.E. School
Bathanar Suti River
Gandhi mandap
Police out post
Brahmaputra River
CENSUS TOWN BOUNDARY
ROAD
RIVER
POST OFFICE PO
HOSPITAL
LIBRARY L
BANK B
1. Damodar Dev temple
1. Villages adjoining the urban boundary are shown by location code number and name.
2. Village boundary alignment and some of the details of land use are approximate.
BUSINESS AREA
PUBLIC SERVICE AREA
EDUCATIONAL AREA
RESIDENTIAL AREA
ADMINISTRATIVE AREA
OPEN AREA

Table 3.3 shows however, that the total number of commercial mulberry looms in Sualkuchi development block is 8000 and that of commercial *muga* looms is 1650. The total number of commercial looms in Sualkuchi is thus 9650, of which the proportion of mulberry looms is 83 per cent in 1999, which shows that Sualkuchi is primarily a mulberry silk weaving centre.

Table 3.3: Estimated number of looms in silk industry in Kamrup district: 1999

S. No.	Cluster	Block	Commercial mulberry looms	Commercial non- mulberry looms
1	East Sualkuchi	Sualkuchi	1500	750 *Muga*
2	Central Sualkuchi	„	2500	500 „
3	West Sualkuchi	„	3250	375 „
4	Bangsar	„	250	25 „
5	Hajo	Hajo	-	-
6	Ramdiya	„	-	-
7	Bamundi-Hiliguri	„	-	225 „
8	Halugaon	„	-	125 „
9	Bajra-Mirja	Barduar	-	-
10	Parali-Palasbari	„	-	-
11	Rampur	Rampur	-	450 *Eri*
12	Uparhali	„	-	200 „
13	Jiakur	„	-	100 „
14	Bijaynagar	„	-	250 „
	Other districts	-	-	1500 „
	Total	-	8000	4500

Source: Demonstration Cum Technical Service Centre (DCTSC), Central Silk Board (CSB), Sualkuchi, 1999.

We find two estimates on the total number of looms. The first figure of 15000 looms is based on field survey of Das (2000) while the latter figure of 9650 looms in Sualkuchi development block is an estimate of the Central Silk Board (CSB), on commercial mulberry and *muga* silk looms in Sualkuchi. The difference in the estimates appears to be due to the inclusion of inactive looms in the former whereas the latter includes only the active looms[6].

3.3. Number of Weaving Establishments[7]

Information on number of Census houses used as factories and workshops is available for Hajo Police Station (P.S.) in Kamrup district of Assam from the Census of India, 1961. This

[6] As explained by Mishra, S.N., Asstt. Director, Demonstration cum Technical Service Centre, Central Silk Technological Research Institute, Central Silk Board, Sualkuchi during field visit.

[7] Census of India, 1971 has defined 'Establishment' as "a place where goods are produced or manufactured not solely for domestic consumption or where servicing and/or repairing is done such as factory, workshop or *household industry* or servicing and/or repair workshop or a place where retail or wholesale business is carried on or commercial services are rendered. It is necessary that in all these places one or more persons should actually be working. Thus an establishment will cover manufacturing, trade and other establishments where people work."

information is considered as pertaining to silk weaving industry at Sualkuchi because it is the only Census town located in Hajo P.S., which specialises in silk weaving.

Table 3.4: Census houses used as factories and workshops for weaving of silk textile by handloom (ISIC code 264) classified by size of employment: 1961

Size of employment	Number of factories and workshops	
	Hajo P.S.	Kamrup District
1 person	0	0
2 to 5 persons	40	41
6 to 9 persons	11	11
10 to 19 persons	2	2
20 persons & above	0	0
Total	53	54

Note: According to the notes of 1961 Census, "the list of factories and workshops ranges from such small things as household weaving or pot making to modern large scale industries." Further, it was mentioned that factories and workshops in Assam may really mean a very primitive form of working place such as simple hut and relate to household weaving. "Only those workshops can be really called factories in Assam, which use some, kind of fuel to generate power".
Source: Census of India, 1961. Volume III, Assam, PART IV, *Report on Housing and Establishment.*

There was no workshop which engaged 20 persons and above in the year 1961. Only two out of 54 workshops had engaged 10 or more persons. Thus, the industry was characterised by small household establishments none of which used power. Moreover, all of these were handloom-weaving establishments.

Information on major group 24 of ISIC i.e. manufacture of wool, silk and synthetic fibres is available from 1971 census for the entire State which undoubtedly would relate primarily to Sualkuchi where the silk weaving industry is concentrated. We moreover observed that the share of wool and synthetic fibres in major group 24 was negligible according to 1961 census; hence most of the information under this major group pertains to silk industry, which is concentrated in Kamrup district.

Table 3.5: Registered factories[8], unregistered workshops[9] and household industry[10] establishment in Assam by size of employment under NIC major group 24: manufacture of wool, silk and synthetic fibre textiles – 1971

NIC major group 24	Total	One person	2 to 4 persons	5 to 9 persons	10 to 19 persons
Household industry establishment*	47	1	30	13	2
Unregistered workshops	30	2	12	13	2
Registered factory	3	-	-	-	-
Total	80^	3	42	26	4
		(3.7)	(52.5)	(32.5)	(5.0)

Note: There were 1515 registered factories under divisions 2 & 3 and 3 registered factories under major group 24 – manufacture of wool, silk and synthetic fibre textiles.

* Household industry establishments are operated manually.

^ Also includes the unclassified ones

Source: Census of India 1971, Series I – India. Part III – B (i), *Establishment Tables.*

As observed from the above table, even according to 1971 census there was not a single household industry unit or unregistered factory under wool, silk and synthetic fibres, which employed 20 workers or more. The nature of the industry did not undergo any remarkable change as compared to 1961, as far as its distribution in terms of size of employment is concerned. It was still characterised by small establishments employing less than 10 persons. Around 52.5 per cent of all establishments were in the size group of 2 to 4 persons and another 32.5 per cent employed 5 to 9 workers. However, when compared to 1961, it could be seen that the share of establishments in the size group employing 5 to 9 persons had gone up. Another important observation from Census 1971 pertains to the growth of unregistered workshops.

During 1969-70, 330 silk weaving units employing 5 or more persons were listed at Sualkuchi by the Department of Economics and Statistics, Government of Assam. Besides these,

[8] According to Census of India, 1971 " a factory which is registered under the Indian Factories Act should be treated as a "Registered Factory." Any other workshop merely licensed by the Municipal or any other authority or registered for any other purpose should not be treated as a registered factory under the Indian Factories Act."

[9] Unregistered Workshop: Workshop is a place where some kind of production, processing, servicing, repairing or making of goods for sale is going on. A workshop, which is registered under the Indian Factories Act, should be treated as a Registered Factory and other as "unregistered workshops". Workshops that are run as household industry should be treated as household industry and entered as such.

[10] " Household Industry' is defined by 1961 census as " conducted by the Head of the household himself and/or mainly by members of the household at home or within the village in rural areas and only at home in urban areas. The industry should not be on the scale of a registered factory. The participation of the Head of the household and/or the family members of the household is an essential feature of the Household Industry. In rural areas the Household Industry can be located either at home or within the village. But in an urban area the Household Industry or at least the major part of its work must be located only at home. A Household Industry should relate to production, processing, servicing or repairing and includes makers and sellers of goods. At least part of the goods offered for sale from the household should be manufactured or processed by members of the household. The role of hired workers form outside being of secondary importance"

according to Baishya (1972), there were about a thousand other smaller units each engaging less than 5 persons. From yet another survey, Baishya (1989) reported the following number of weaving establishments in Sualkuchi during 1971and 1981. The figure for 2000 is a not based on survey.

Table 3.6: Number of handloom establishments in Sualkuchi: 1971 to 2000

Year	Number of handloom establishments
1971	1077
1981	1478
2000	3500

Source: Baishya, P (1989), *Small and Cottage Industries: A Study in Assam.* Baishya (2000) for the year 2000.

That there has been an increase in the number of weaving establishments during the period 1961 to 2000 is shown by the above information (Table 3.6) on number of weaving establishments in Sualkuchi.

3.4. Tendency Towards the Growth of Large Handloom Weaving Manufactories in Terms of Number of Looms and Hired Workers

According to Baishya (2000), during World War II, the largest weaving establishments had 10-12 looms in Sualkuchi. In 1980-81, the number had increased to 14 looms. And in 2000, the number of looms in largest individual weaving establishment had increased to a maximum of 40 to 45. That the growth in size of bigger weaving establishments in Sualkuchi in terms of number of looms could be even higher is observed from a survey of 15 master weaver households conducted by Das (1986).

Table 3.7: Number of looms and hired persons engaged by master weavers* of Sualkuchi

Number of looms	Number of master weaver households	Number of hired workers per loom	
		Hired weavers	Hired helpers**
Less than 4	5	1	0.70
4	5	1	0.55
5	2	1	0.50
10	1	1	0.40
35	1	1	0.28
60	1	1	0.30

Note: * Master weavers engage workers on wage basis or contract basis. Master weavers have their own looms and accessories and make arrangement for raw materials, finance, market, etc.
* * Number of hired helper per loom = Total number of hired helper / total number of looms separately for each category of looms.
Source: Computed from a survey of 15 master weaver households on random basis in N.C. Das (1986), *Development of Handloom Industry: Organization, production and Marketing.*

From the above information, it becomes clear that the maximum number of looms in the largest of these weaving establishments of master weavers had gone up to 60 during the 1980s. When compared with the 1961 census information on Census houses used as factories and workshops in Hajo P.S., and even with 1971, it appears that there has been growth in weaving establishments employing more than 20 persons during the period 1961 to 1986. This development is also linked to the dependence of weaving establishments exclusively on hired weavers and helpers, which suggests some transformation of the silk industry from household industry[11] to non-household industry. Moreover, it is interesting to note that even the master weavers with a single loom employed hired weaver and helper. In the case of almost all 15 master weavers, the number of looms is equal to number of weavers. This means that the sample master weavers at Sualkuchi did not do weaving themselves. Further, the number of helpers per loom decreases as the number of looms in the establishment increases suggesting the existence of economies of scale.

That there has been a trend towards the growth of bigger manufactories is further revealed by the following information on number of looms pertaining to 1999-2000 for a sample of workshop owners in Sualkuchi who have started their own cloth shops in Guwahati in recent years (Table 3.8).

Table 3.8: Number of looms owned by bigger manufactories and year of establishment of the sale counters owned by a few bigger manufactories of Sualkuchi: 1999-2000

S. No	Name of the Establishment	Year of establishment of the sale counter	Number of looms in own workshop
1.	Kumar Silk Centre, Kamarpatty	1992	50
2.	Assam Silk Emporium, Panbazar	1989	30
3.	Bimala Silk, Panbazar	1995	10
4.	Baishya Silk House, Panbazar	-	42
5.	Raw Silk Emporium, Kamarpatty	1994-95	15

Source: Field survey, 1999-2000.

Two things are clearly observed from the Table 3.8. The first relates to the number of looms, which varies from 15 to 50 per weaving establishment. And the second pertains to the year of establishment of the cloth shops. As can be seen, almost all the sale counters of silk cloth were

[11] According to the definition of "Household Industry" given by 1961 census, one of the features is that "at least part of the goods offered for sale from the household should be manufactured or processes by members of the household. The role of hired workers form outside being of secondary importance."

established during the 1990s. This information reveals a trend towards the integration of weaving and sale of silk cloth during the 1990s.

3.5. Summary of Observations

From the above discussion, it is clear that the silk weaving industry in Sualkuchi has grown in terms of number of looms and weaving establishments since 1961. A tendency towards the growth of bigger manufactories is emerging which reveals the continuing transformation from household industry to non-household industry. The period since 1961 is also marked by the growth of many weaving establishments having more than 20 looms, in one instance it was as high as 60 looms.

Transformation of the silk weaving industry is more clearly manifested in the growing dependence of master weavers and workshop owners on hired weavers and hired helpers. According to Das (2000), at present, around 15000 wage paid weavers are engaged in reeling and weaving of *muga* and weaving of mulberry silk fabrics. 'Besides, there are 3000 master and entrepreneur weavers in the town. It is noteworthy that 80 per cent of the weavers in the town are women most of whom are migrants.' This shows that a class of wage weavers has emerged at Sualkuchi. That is, the growth in the number of looms and number of weaving establishments is also linked to the dependence of master and entrepreneur weavers on hired weavers and helpers. A production system characterised by the integration of weaving and retail sale of silk cloth is also evident during the 1990s.

Chapter IV

PRODUCTION SYSTEM IN SUALKUCHI

4.1. Introduction

Many industries are characterized by the coexistence of the most primitive forms with the successive systems of production while the process of evolution towards capitalist organization goes on. This chapter seeks to present the structure of the silk weaving industry in Sualkuchi in terms of categories used elsewhere to describe similar pre capitalist forms of production. The chapter begins with a brief schematic discussion of the classic woolen industry in England. Then, a discussion of the systems of production in various parts of India is carried out. Taking the comparative categories from this discussion, the industry in Sualkuchi is presented and the distinctive aspects of the contractual relationships are brought out.

4.2. The Woolen Industry in England Prior to the Factory System

Independent cottage weavers, master manufacturers in the domestic system, merchant middlemen, clothiers and merchant manufacturers were the forms of production existing side by side before the factory system transformed the work.

Table 4.1: Ownership characteristics in early forms of production

Forms of production	Ownership of					
	Yarn	Looms	Fulling and teaseling mills	Cloth		Cloth shops
				Before finishing	After finishing	
Independent weaver	W	W	P	W	MMI	CM
Master weaver	MW	MW	P	MW	MMI	CM
Merchant						
- Clothiers	MC	MW	P	MC	MC	CM
- Manufacturer	MM	MM	MM	MM	MM	MM

Note: W: weaver, MW: master weaver, P: public mills, MMI: merchant middleman, CM: cloth merchant, MC: merchant clothier, MM: merchant manufacturer; P: public mills could be used by everyone for a fixed payment. In Mantoux (1961; p.58, footnote 4), 'The development of the use of machinery first of all tended to increase their number.'

Source: Derived from Chapter one, 'The Old Type of Industry and Its Evolution,' in Mantoux (1961).

Mantoux (1961) wrote on the domestic system, "what characterizes this system is not the work done at home but the part played by the capitalist, the merchant, who from being at first

only a buyer gradually comes to control the whole of production." Table 4.1 traces this change in ownership of means of production.

Transfer of ownership of the yarn, cloth and looms gradually converted the independent weaver to an employee of merchant clothier and then into a wage earning worker completely dependent on wage work in merchant manufacturer's workshop. Simultaneous changes were taking place in the place of work, involvement of family members and specialization of functions (Table 4.2).

Table 4.2: Specialisation of work and changes in the place of work

Production systems	Type of workers in			Place of work	
	Weaving	Spinning	Distribution of wool	Weaving	Spinning
Independent weaver	Weaver	Family members	-	Weaver's cottage	Weaver's cottage
Master weaver	Master weaver + apprentices	Family members + hired spinners	Master weaver	Master weaver's cottage	Spinner's cottage
Merchant clothier	-do-	Hired spinners	Agents	-do-	-do-
Merchant manufacturer	Hired wage weavers	-do-	-do-	Workshops	-do-

Source: Derived from Chapter one, 'The Old Type of Industry and Its Evolution,' in Mantoux (1961).

The loss of ownership of looms, yarn, and cloth by the independent weaver was further intensified with his migration to towns where merchants lived. This resulted in his detachment from agriculture, which was another source of income. Side by side with these changes, involvement of family members of weavers declined, as there was a shift in place of work from the weaver's cottage to the workshop. Processes that were earlier done collectively by weavers and his family members got increasingly specialized among weavers, spinners, combers and agents involved in distribution of wool.

Simultaneous existence of independent and master weavers with merchant clothiers is explained by Mantoux (1961) as the outcome of differences in nature of wool, technical processes – carding and combing - and price of wool. For the type of wool having lower price but requiring greater skill, independent and master weavers retained their independence. On the contrary, merchant clothier system developed in the area where the processes did not require much skill but required long staple wool of better quality and higher price. Price of combed wool was much higher but industry of carded wool needed short curly staples, which

were cheaper but not so easy to turn to the best count. Hence the more commercialized system developed fast in areas where wool combing was practiced whereas industry of carded wool thrived well in small free workshops.

Similarly, even when weaving workshops were set up by merchant manufacturers at the beginning of the system of manufacture, merchant clothier system based on work done by weaver at his home existed side by side.

Further growth in size of weaving workshops was constrained by unfavourable attitude of the Crown towards it. This resulted in the delay in transition of small workshops of merchant manufacturers into large workshops. It prevented not only technical change in processes but also disappearance of old forms of industry.

According to Mantoux (1961), transition of independent weavers into wage earning workers helped the merchants to reduce their wages, as the weavers became totally dependent on the wage work provided by them. As mentioned earlier they were no more attached to agriculture. Increasing availability of unskilled workers willing to work as apprentices was another factor behind the fall in wage rate. Coupled with this, there was an increase in working hours for wage earning weavers besides irregularities in employment.

Separation of capital from labour resulted in development of class interests and conflicts between the weavers and merchant clothiers. Although because of 'the peculiar processes of their trade' which demanded much more professional skill in comparison to the wage-earning weavers, the wool combers remained independent commanding higher wages for their specialized skills, they were the first to have conflict with merchant clothiers. 'As there were not many of them, they were hard to replace' and they were not dependent on one or a group of employers. Certain decisions like the one of merchant clothiers to import combed wool intensified the conflicts further. As a consequence of increasing conflicts, regulations on wages, working hours and quality standards on cloth were enforced. 'Thus, the chief object of all these regulations, the protection of the consumer, was not achieved. But on the other hand, technical improvements were almost impossible' (Mantoux, 1961).

Transition of domestic system of master weavers into system of manufacture in the form of workshops of merchant clothiers did not lead to the disappearance of old forms of industry.

But in the process class formation took place due to the separation of capital from labour. Class conflicts intensified. Policies of protection and regulation were enforced through legislation. While these were helpful in some ways, coupled with other factors they retarded the establishment of large workshops and improvement in technical processes. Changes in the system of production did not result in any improvement in technical process of production or invention and commercialization of new machinery, which however happened later. The change was only in ownership of means of production, an outcome of which was the emergence of employer - employee relations. According to Mantoux, 'not only the mass of vested interests and the weight of routine but a whole tradition, a system established by custom and consecrated by law' were the causes, which made for the prevention or the retardation of the change in the early forms of industry.

4.3. Systems of Production in India

Levkovsky (1966) has explained the course of evolution of lower forms of capitalist enterprises from simple commodity production in India. It occurred within an environment of disintegration of feudalism when trade, commodity, money relations were already developed. He has analyzed the external influences as well as internal causes. Existence of developed capitalist enterprises simultaneous with the simple commodity production and the dependence of the weavers on mill made yarn were the major external features. Because of the interaction of the capitalist mill with simple commodity production, the rise of lower forms of capitalist enterprises in India followed another course sharply different from the classic European development of capitalism in the crafts. Increasing prices of yarn, growing competition from mill made cloth, unemployment and underemployment of weavers and drastic reduction in piece-rate wages were the specific external characteristics of the process of evolution of lower forms of capitalist enterprises from simple commodity production. Although concentration of weavers in urban centers, detachment of weavers from agriculture and reduction in wage rate of weavers are features common to both the situations in India and the classic English case, these were not the outcome of common causes. In the classic case, there was a gradual phase by phase development of higher capitalist forms of production. This sequence was disrupted in India because of the colonial regime, which transplanted the developed capitalist enterprises at a time when simple commodity production was predominant. Interaction of the developed British capitalist forms and the developing Indian capitalist forms is the distinguishing feature in the process of evolution of the capitalist forms of production in India.

While differences do exist in relation to external influences, understanding the internal factors is the focus in this chapter. According to Levkovsky (1966), entry of merchant and usurer capital in the simple commodity production developed three types of relations – one in the supply of yarn, second in credit and third in sale of cloth. Since these resulted in exploitation of weavers their condition deteriorated further. Such relations with merchants and middlemen were similar to those of merchant clothiers in woolen industry in England. Likewise, in India too the relations with merchants and middlemen resulted in the establishment of capitalist manufactories.

Another factor that led to the development of simple co-operatives and capitalist manufactories in India was `an acceleration in the process of property and social stratification among the weavers themselves' (Levkovsky, 1966; p.207). This is an important feature of the Indian system. In analysing the phases or forms through which small capitalist enterprises were established in India, and relating them to the typical case, we come across the following differences and similarities:

Hand weaving industry in India	The classic English case
Independent cottage weaver	Independent cottage weaver
Master weaver	Master weaver
Sowcar weaver	Merchant clothier
Mahajan (newly arrived moneylender)	Merchant clothier
Karkhanadar (owner of a small enterprise)	Small capitalist / merchant manufacturer
Small entrepreneur	-

Source: Derived from the 'Structure of the Industry' in the Report of the Fact Finding Committee (Handlooms and Mills, 1942).

1. Master weaver in India employed weavers of the same caste who worked under him for a wage. In the English case, they engaged apprentices.
2. *Mahajans* were newly arrived moneylenders in India. In the woolen industry in England, merchant clothiers started with yarn supply although in due course they advanced money to weavers too. Merchant clothiers from the beginning were responsible for dyeing and finishing of clothes too.
3. Merchant clothiers became manufacturers by establishing small workshops. In India too, *karkhanadars* emerged from among the *mahajans*. Small entrepreneurs too emerged from among the weavers.

In India too there were regional differences in the transformation of weavers into hired hands. In the period between the two world wars, when the ruin of weavers and their transformation into hired hands was particularly well advanced in Bombay and Madras province, in regions such as Assam, the independent weavers still made up the majority. During that period, there were broadly three groups of weavers. Even in case of weavers who worked in their home on own looms preserving relative independence, the weaver received yarn on condition that he sold finished product through his creditors. The second group of weavers depended heavily on the owner of the manufactory (the *karkhanadar*), from whom they received the necessary materials and to whom, as a rule, they were hopelessly in debt. They were paid by the piece. The third group of weavers was successful small entrepreneurs who were frequently dependent on the merchants and moneylenders.

The Fact Finding Committee (Handloom and Mills, 1942) (hereafter FFC) has identified different types of middlemen systems and system of advances in different regions in India. These were the following:

Types of Middlemen System and Its Features

Master weaver: Independent craftsman who worked in his own home with a few apprentices learning the trade and possibly with a journeyman or two who not being equipped to start off as a master weavers had to work as day- labourer. Thus, the master weaver was not a regular employer of labour, and he paid no regular wage to the apprentices who learned weaving under him.

Sowcar-weaver: Well to do weavers who have set up as merchants, and they employ their fellow caste men under them for a wage or other forms of contract. Such employers leave the weavers to work in their own home with their own looms and other appliances. In many areas, a class of *sowcar* weavers has arisen from among the professional weavers themselves. They were analogous to clothiers of domestic system in England. Even as the clothier did, the *sowcar*-weaver gives yarn and other raw material to be worked up in the homes of the workers, and takes back cloth after paying the wages or the prices contracted for. Although all the workers were employed in their own homes, his whole establishment is like a well organised factory.

Mahajans: A yarn merchant, a cloth merchant or he is both a cloth and yarn merchant. He often combines yarn selling with cloth stocking and thus he has 'the need and the facility for employing weavers under him'. Sometimes a moneylender too sets up as a *mahajan.*

Girhasts (Yarn merchants as well as wholesale cloth merchants): Bigger broker weavers in United Provinces were called *girhasts.* He could be a cloth merchant, a yarn merchant or a *mahajan.* They distribute yarn and collect cloth both through agents and direct dealings with weavers. Since weavers are from his own caste, he could provide advances to the workmen under him with more confidence.

Karkhanadars: Karkhanadars bring the weavers together into small factories or workshops with suitable looms and other equipment provided for them. In some areas, a new class of weavers emerged since the professional weavers or for instance the *Salis*, the old weaving caste, did not come forward to work in the new factories started by persons trained by missionaries in Calicut, Cannanore and Mangalore.

The differentiation across weavers once again comes into picture when we look into the course of evolution of the above systems of production. As observed by Levkovsky (1966), the lower forms of capitalist enterprises in India evolved in two ways. First, as a result of some rich weavers becoming merchants and entrepreneurs and second, pure merchants and middlemen entering into the process and becoming *girhasts* and *karkhanadars.*

According to the FFC Report, the central feature of the relationship between the middlemen and weavers is the advance, which exists in various forms and under various names in all parts of India. For example, it is called *dadan* in parts of Bihar and Orissa, *Katauti* system in United Provinces, *munkade* system in Central Provinces, Karnataka districts of Bombay, Ilkal and *munpana* system in Tamil Nadu. In addition to these systems, there was another system, which was a three-fold contract. In this system, a smaller middleman, generally a head weaver intervenes between the merchant and the actual worker to help the merchant in keeping touch with a large number of weavers living in different places. The best known systems of contract is the *mungani* which prevailed in Madras Province which means a contract between three parties, viz., the cloth merchant, weaver-middleman and the worker. Sometimes, the merchant takes cloth at ruling market price and sometimes at a price fixed earlier. In most cases, the merchant covers himself against risk by treating the yarn advanced to the head weaver as sold

at the ruling market prices and when the goods are tendered he buys them at the prices ruling then. According to Roy (1993), *mungani* is a three-tier vertical dependence between yarn and dye merchants, large sized loom owner households and hired workers. In this system, prevalent in Adoni in southern Andhra, all the three tiers were secured together, and tied sale of product or labour ensured by never-ending debts, which was in the form of yarn advance between the merchant and the loom owner, or as a consumption loan between the loom owner and the worker.

The Report of the Fact Finding Committee further mentions about this triple contract system prevalent in Sholapur where the head weaver called *asami* was a link between the merchant or *karkhanadars* on the one hand and the weavers on the other. When production in *karkhanas* was not adequate, the *karkhanadars* entered into such contracts with *asamis* on an outwork basis ordinarily for a period of six to eight months Advances are paid in money and in some cases yarn is also advanced. *Asamis* worked in their home with their own looms and acted as commission agents. Similarly, in the United Provinces there were *arhatias* and *sattiwalas* who acted as commission agents for the wholesale cloth merchants, and kept depots for the distribution of yarn and collection of cloth. They advanced money to the weavers and distributed designs to them. Systems of advances in India too, like that in the woolen industry in England resulted in increasing dependence of the weavers on the middlemen.

Workshops with more than 5 looms to more than 200 looms were considered as *karkhanas* in the FFC Report. According to it, `the special feature of the West Coast *karkhanas* was that in each factory the organization is complete, from the manufacturing to the marketing of cloth. Each factory has its own arrangements for dyeing, preparatory processes, weaving and marketing, and all this is done by human labour. At first there was no provision for finishing, but subsequently two finishing plants propelled by electric power have been installed, one at Cannanore and the other at Pappinasseri' (Report of the FFC, 1941, p.76). Seasonality was another feature of the *karkhanas* in Bombay Province and in Sholapur. Further, *karkhanas* of different places specialized in different lines of products.

Tirthankar Roy (1993) found a multiplicity of systems and contracts in the available evidence for the 1930s. Ordinary weavers were losing possession of their looms and working as mere wage workers in the handloom factories. Independent weavers were being reduced to different kinds and degrees of dependence. According to him, 'in nearly all cases independence meant

direct access to consumers or to the merchant who bid highest. Sale was necessarily not tied to one buyer, there were no advance contracts'. `Dependence, by contrast, always implied tied sale. In the most extreme case it could involve an almost explicit contract for sale of labour....In a large majority of cases the independent weaver retained his loom and was not a factory worker. The capitalist exercised increased control by means of money or yarn advances on condition that cloth would be returned.... Numerous descriptions of putting out suggest that even against the framework of advances-against-security a weaver could be regarded as a seller of cloth or a seller of labour' (Roy, 1993; p-74).

Roy has distinguished between wage contract and price contract on the basis of secondary characteristics of a transaction (Table 4.3). These secondary characteristics relate to debts, duration of contract and bargaining. The most tractable distinction, according to him, was that wage-contract and price-contract involved different capitalists. `The person organising the transaction was, by his original profession, a merchant buying cloth, a yarn seller or moneylender receiving cloth in repayment of past debts, or a large producer. Price contract with a trader or a financier carried certain instability with it. It could involve several rounds of bargaining on yarn, on cloth, on prices, on interest, and bargaining on prices took place afresh at each round. These were typically terminable contracts whereas wage employment, though not secure over the long run, was not necessarily negotiated every round. The merchant capitalist's first reaction to crisis was termination of contract, while a large producer tried wage cuts. Another difference concerned the nature of indebtedness. Price contract treated yarn advance as a debt, involving interest on price differential. Wage contracts could be free of debts, the worker was sometimes like a dependent of the employer, or it involved consumption loans' (Roy, 1993; p.75).

Table 4.3: Two types of contract

	Price Contract	Wage Employment
Supply of yarn	Obtained in kind; credit sale, interest implicit in differential yarn price, or an explicit interest; yarn price flexible and negotiable	Interest-free advance of yarn
	Obtained on cash or money advances; interest explicit or implicit in price of cloth (money lending)	Production loans absent
	Production loans secure tied sale of cloth	Consumption loans secure tied sale of labour
Supply of cloth	Price settled after weaving, haggling, complaints of unfair price	Rates fixed by agreement
	Price fixed under terminable contract	Contracts of long tenure, stable piece or time rates
	Final price subject to commission/rentals /discounts and arbitrary exaction	Does nor arise, wages are labour charges alone
Capitalist	Yarn merchants or moneylenders	Large producers
Capitalists' response to crisis	Termination of contract	Wage-cuts

Source: Roy (1993; p. 76).

Moreover, he has distinguished between weaver-weaver contracts and weaver-merchant contracts on the basis of its features. `Wage based putting out, just like a proper handloom factory, was usually an arrangement between one producer and another ' (Roy, 1993; p.76).

Types of Contract	*Features*
Weaver-weaver contracts	Stabilised by caste, patronage and a certain shared interest in the industry.
Weaver-merchant contract	Involve conflicts, instability and resistance.

That there was intra-producer differentiation in India, as argued by Levkovsky (1966), has also been observed by Tithankar Roy (1993) in Bombay-Deccan, Hyderabad and deep South. According to him, many new systems of work were really results of rich weavers beginning to trade. That mass immigration of weavers into the towns here helped wage contracts to develop and even led to 'mushrooming of handloom factories' is also another common phenomenon similar to the classic case.

Tied sale of cloth in Bengal was an instance of weaver-merchant contract. Roy (1993) states that in Bengal 'the capitalist was a merchant cum financier' who in most cases excepting Malda and Santipur was not a product of polarization among producers. Further, he states that

yarn and cloth traders, distinct elsewhere, were united in the universal term *mahajan*. As an illustration of the usurious nature of advances, he quotes what Mines (1984; p.107-20) said on the dependence of the small and cottage industries of the Bengal province on the accommodation granted by indigenous bankers. "The accommodation sometimes assumes the form of loans of raw materials to the borrower on definite understanding that the finished article will be delivered at a favourable price to the moneylender who happens to be a trader himself. If sales were tied the contracts were explicitly price contracts, the weaver is not [the *mahajan's*] employee but attached to him' (Mines, 1984; p.107-20 cited in Tithankar Roy, 1993; p.85).

More recently, Abanti Kundu (1980) as reported the co-existence of *mahajan*, master-weavers, owner/independent weaver and wage worker on the basis of pattern of ownership in handloom industry of West Bengal. The characteristic difference between the *mahajans* and master-weavers 'lies in the fact that the master-weavers usually work themselves in one of their looms and engage wage workers in other looms. *Mahajans* do not normally work on looms; they are the suppliers of yarn to their wage workers as well as selling agents for their products on the basis of a wage system.' The author has mentioned about two types of *mahajan* systems. 'In the first case, the *mahajan* lifts the finished products by paying wage-earning weaver a fixed wage or *bani* per piece of product. In the second case, the wage-earner has to supply a fixed number of products to the *mahajan* at a contracted rate within an agreed period, say three or five months. The contract rate is agreed upon by the *mahajan* and wage earners on the basis of rate of yarn and wage-rate prevailing on the day of agreement. The rate is final for the fixed time period and hence does not vary with fluctuations in the yarn and wage market.' The two arrangements are like wage contract.

From the above discussion of Tithankar Roy (1993) and Kundu (1980) on *mahajans* in Bengal, it is clear that they have not emerged from among the weavers although Roy did not deny existence of a few exceptions. According to him, intra-producer differentiation in rural weaving of Bengal was weak unlike weaving in Bombay-Deccan, Hyderabad and deep South.

Causes of Increasing Dependence of Weavers and Evolution of Contractual Arrangements

Nature of the systems of advances prevalent in various regions in India is explained by the FFC Report as due to degree of dependence of weavers on merchant-capitalists and weaver-

capitalists as mentioned before. Of course, the rise of middlemen-systems was the outcome of the control of merchants on mill made yarn.

Competition from mill cloth intensified in the thirties after tariffs enabled them to enter into finer weaving' (Roy, 1993; p.78). According to him, barriers to entry into diversified cloth production did not enabled cotton handloom weavers to withstand competition. Non-contractual obligations such as extra charges were imposed by traders on cloth offered by weavers for sale. A waiting period in finding the highest bidder of cloth caused delay in repaying debts of yarn merchants and moneylenders. Besides these, the inability of weavers to stock clothes during the lean period, as specified by Tirthankar Roy (1993), made the weavers dependent and resulted in development of contractual arrangements. According to him, `insecurity of the work was typically cited for preferring some kind of contract. Contracts also eliminated bargaining and delayed payment as could happen to an independent weaver. Insecurity was heightened by the presence of marginalised, itinerant, non-hereditary and immigrant weavers, a standard feature of the factory towns' (Roy, 1993; p. 78). However, that there were regional differences in the pattern and pace of this evolution (as observed from the distribution of independent weavers, contract workers, workers in factories and co-operatives on the basis of information provided by the Fact Finding Committee is pointed out by Tirthankar Roy (1993) and also Levkovsky (1966).

Existence of regional markets (Levkovsky, 1966) or segmented markets (Douglas Haynes, 1996) for specific handloom products in different parts of India is an important factor behind the existence of lower forms of production organisations side by side with the mills. The development of the weaver capitalists and merchant capitalists and the employment of wage weavers are linked by Haynes (1996) to the development of flexible specialisation which enabled them to depress the weavers income during the time of low demand. In other words, the wage and price contracts between the capitalists and the weavers transferred certain risks due to uncertainties arising out of product market fluctuations to the weavers. It enabled the merchants to depress the wages of workers by reducing their employment during the periods of lower demand.

Despite the evolution of lower forms of capitalist systems and increasing dependence on contract arrangements, primitive forms existed side by side. But, at the same time, lower forms of capitalist enterprises did not develop in those regions where 'coarse cloth is produced

chiefly for local use, in villages whose self sufficiency was not much affected by recent improvements in transport, in places where there is no lucrative business to attract middlemen and capitalists and where weaving is secondary means of livelihood to agriculturists. Especially in Assam, Central Provinces and Berar, and Bihar, these changes have not made much headway' (FFC, 1942; p.70].

4.4. Systems of Production in Sualkuchi

At the time when the lower forms of production were developing from simple commodity production resulting in growing dependence of weavers on merchants, middlemen and money-lenders and increasing alienation of weavers from agriculture in many hand-weaving centres in rest of India, in Assam, these did not develop at a comparable pace and spread. It is evident from a fairly high[1] proportion of independent weavers who practised hand weaving for domestic consumption (Table 4.4).

Table 4.4: Classification of weavers in Assam: 1942

Category	Number	Percentage
Independent weavers	416,000	98.81
Weavers working under *mahajans*	2,000	0.47
Weavers in karkhanas	2,000	0.47
Members of co-operative societies	1,000	0.24
Total	421,000	100

Source: Report of the Fact Finding Committee (Handloom and mills), (1942; p.71).

However, that the situation could be different in certain specialized centres of weaving and in which the pace of change could be more rapid appears to be borne out by the silk weaving centre in Sualkuchi[2].

There is a similarity among the lower forms of production in Sualkuchi, at present, with other hand weaving centres in India and the woolen industry in England in many aspects. However,

[1] "In other areas, however, the proportion of independent weavers is still fairly high. In Assam, most of the weavers are women and they carry on weaving chiefly for home use; even when they produce for the market they pursue their business independently and seldom seek the need for middlemen' [Report of the Fact Finding Committee (Handloom and mills), 1942, p.79].

[2] 'In Assam, hand weaving is scattered all over the Province. There are also centres like Sualkuchi, specialising in silk goods, and Karimgunj making chiefly cotton goods, while other centres are Sylhet, Palasbari, Gauhati and Sapatgram' [Report of the Fact Finding Committee (Handloom and mills), 1942, p.44].

minor variations which exist with respect to certain specific characteristics is observed through a comparison of different forms of production in Sualkuchi (Table 4.5).

Table 4.5: Systems of production in Sualkuchi corresponding to the lower forms of production in rest of India and the woolen industry in England

Sualkuchi silk weaving industry	Textile industry in rest of India	Woolen industry in England
1. Cottage system [a]	Cottage system	Cottage weaver
2. Hired weaver with own looms [b]	-	-
3. Master weaver [c]	Master weaver	Master weaver
4. Manufactory[d] without its own marketing arrangement	*Karkhana* (small handloom factory)	Merchant manufacturer who has established workshop
5. Manufactory with its own marketing arrangement[e]	*Karkhana* (small handloom factory)	Merchant manufacturer

Note –

[a] In cottage system, the weaver and his family members reel silk yarn, weave silk cloth and market it by themselves without engaging any hired worker. This system is prevalent in *muga* silk weaving in Sualkuchi but not mulberry silk weaving.

[b] Among the hired weavers who work in manufacturer's manufactory/workshop on wage contract, a small proportion have own looms in their rented house where they engage other hired weavers. They too work on their own loom during the lunch break in the manufactories between 12.00 noon to 3 p.m. and after 8 p.m.

[c] Master weaver in Sualkuchi is considered as the weavers who works as a weaver together with hired weavers and apprentices and he owns looms and workshop.

[d] Manufactories are workshops where the manufacturer carries out production of silk cloth employing almost exclusively hired weavers on piece-rate system of wage and hired helpers on monthly stipend. In Sualkuchi, manufactory owner knows the processes involved in silk weaving such as dyeing, doby repairing and silk weaving but does not do weaving himself. According to Baishya (2000), they have emerged from among the master weavers and hired workers in Sualkuchi. Some of them have also emerged from among the traditional trading community in Sualkuchi called *mudois* and also from among the agents involved in silk cloth marketing.

[e] Manufacturer with a manufactory who have own marketing arrangement. Such manufacturers are also involved in collection and stocking of cloth through purchases made from master weavers and other manufactories.

There is another system in Sualkuchi similar to the merchant manufacturer who advanced yarn to weavers to work in their own home. Side by side he organised production in his workshop by engaging hired weavers. However, it is one of the least predominant systems in Sualkuchi the prevalence of which is further declining. That is why we have not included it in above categories.

Source: Field work during October 2000 and April 2001.

In order to differentiate the production systems in Sualkuchi, we characterise the differences among them in terms of ownership of means of production. In production system 2 (see Table 4.6), we observe two forms. Hired weaver owning means of production and not owning any means of production. The former are weavers who have come from nearby places. After learning silk weaving and working for some years in manufactories, have acquired a few looms which they operate by engaging hired weavers while they still work in manufactories on piece rate wage system. The second form is, however, the most predominant in Sualkuchi as less than 5 per cent (i.e. 750 out of 15000) of the hired weavers in Sualkuchi own looms.

A comparison of these production systems did not show much of a difference since, in almost all of these systems, production is carried out with own yarn, loom and the producer owns the cloth after weaving. By own yarn, we mean to say that it is purchased by the producers either on credit or cash from the local yarn dealers. Even in case of credit purchase, there is no tied sale of cloth or any other terms and conditions attached to the purchase excepting the duration of credit and the producer is free to sell the cloth to any dealer or agent. This pattern of ownership is similar in almost all systems of production excepting the second form in system 2 in which the hired weavers engaged in manufactories do not own any means of production. However, differences do exist in the ownership of marketing infrastructure - cloth stores cum showrooms. For instance, *SWcop* also purchases silk cloth from weavers who are not members. This explains the presence of *SWcop* among the set of marketing agents owning cloth stores cum showrooms who have supply relations in the systems *M* and *Mcm.* Similarly, *Artfed* too purchases silk cloth from *SWcop* with whom it has tie-up for supply of silk cloth. In addition, it also has supply arrangements with around 50 weavers (in systems *Wh and M*). Within the private sector *Mcm* system has supply arrangement with *Wh, Wm* and *M* systems. Similar supply relations are also prevalent between *Dc* and other systems (*Wh, Wm* and *M*).

Table 4.6: Ownership characteristics in different production systems in Sualkuchi

Production systems	Ownership of means of production			
	Yarn	Loom	Silk cloth	Cloth stores cum showrooms
1. Independent cottage system (*Wi)*	*Wi*	*Wi*	*Wi*	-
2. Hired weaver (*Wh*)	*Wh*	*Wh*	*Wh*	*Dc or Mcm*
3. Master weaver *(Wm)*	*M or Wm or Mcm* *Wm*	*M or Wm or Mcm* *Wm*	*M or Wm or Mcm* *Wm*	*Dc or Mcm or AGMC, NEHHDC* *Dc or Mcm or Artfed, AGMC, NEHHDC or SWcop*
4. Manufactory ° (*M*) engaged in production but do not own marketing arrangement	*M*	*M*	*M*	*Dc or Mcm or Artfed, AGMC, NEHHDC*
5. Manufactory engaged in production and own marketing arrangement (*Mcm*)	*Mcm*	*Mcm*	*Mcm*	*Mcm, SWcop, AGMC, NEHHDC*
6. Silk weaving co-operatives *(SWcop)*	*SWcop*	*Wcop*	*SWcop*	*SWcop*

Notes: *Dc* - Dealers of cloth with own cloth stores/showrooms in and outside Sualkuchi but do not own weaving workshops
NEHHDC- North Eastern Handloom and Handicrafts Development Corporation.
Wcop – Member weavers of silk weaving co-operative societies all of whom are not share holders.
Source: Field work conducted during October 2000 and April 2001.

Two predominant arrangements may be observed from the above categorization. The first type are the labour supply relations between the hired weavers who do not own means of production and the manufactory system which owns the means of production. The second type of arrangement is the marketing arrangements between the agents who do not own marketing infrastructure and the agents who own marketing infrastructure. This is also the basis for the inter-linkages with public sector agencies like *NEHHDC*, which provide only the marketing infrastructure to the manufacturers and cloth dealers against payment of a nominal charge. We next consider the involvement of hired and family workers in various processes as another characteristic to differentiate them further (Table 4.7).

Table 4.7: Use of family and hired workers in different processes in the production systems

Production systems	Type of workers involved in					
	Other preparatory processes	Drum warping	Bleaching and degumming	Doby repairing and adjusting	Dyeing	Weaving
1. Cottage system *(Wi)*	*Wif*	*Wif+ N (Hdw)*	*Wif*	*Wif*	-	*Wif*
2. Master weaver (*Wm*)	*Wmf + Hh*	*Wmf+ Hdw*	*Wmf+Wh*	*Wmf*	*Wmf*	*Wmf+Wh*
3. Manufactory without own marketing arrangement *(M)*	*Mf + Ws + Hh*	*Mf + Hdw*	*Mf+Wh*	*Mf*	*Mf*	*Hw*
4. Manufactory with own marketing arrangement (*Mcm*)	*Ws + Hh*	*Hdw*	*Mf+Wh*	*Mf*	*Mf*	*Hw*
5. Silk weaving co-operatives *(SWcop)*	*SWcopm (+Hh)*	*Hdw or SWcopdw*	*Wcop*	*Wcop*	*Wcop*	*Wcop (+Wh)*

Note: Independent cottage weaver and family workers *(Wif);* Fellow weavers in the neighbourhood *(N);* Hired helpers *(Hh);* Hired drum warpers *(Hdw);* Manufactory owner and family *(Mf);* Drum warpers of silk weaving co-operatives (*SWcopdw*); Member weavers of silk weaving co-operative (*Wcop*);
Specialized workers involved in various processes (*Ws*): Many of these specialized workers are from the master weaver's family. In some instances, yarn is provided to the households involved in bobbin and Swift winding and they are paid the wage on piece-work. In the surrounding villages like Bamundi, such arrangements are operating.
Source: Derived on the basis of information obtained from field work during October 2000 and April 2001.

In the master-waver system, both family members and hired weavers are employed which is not so in the manufactories. However, involvement of family workers in other processes is common in manufactories although it is not as intense as in the master weaver system. In both the types of manufactories, another distinguishing feature is the engagement of hired, specialized workers in carrying out processes like bobbin and swift winding, drafting and denting, card punching and graphing on piece rate wage system. Such specialized workers

could be members of master weaver's family or they could be members of other weaver and non-weaver households. Here, we find certain labour supply arrangements between manufactory system and master weaver system and other households, which are related to specialization of certain processes. . A further distinction may be drawn among the various production systems on the basis of the workplace of the hired workers (Table 4.8):

Table 4.8: Place of work for workers involved in different processes in the production systems

Production systems	Place of work for workers involved in					
	Winding and rewinding, etc.	Drum warping	Bleaching and degumming	Doby repairing/ adjusting	Dyeing	Weaving
1. Cottage system (*Wi*)	*Cw*	*Dwp*	*Cw*	*Cw*	*Cw*	*Cw*
2. Hired weaver with own loom (*Wh*)	*CWh*	*Dwp* + *DCTSC*	*CWh*	*CWh*	*CWh*	*CWh*
3. Master weaver (*Wm*)	*CWm*	*Dwp* + *DCTSC*	*CWm*	*CWm*	*CWm*	*CWm*
4. Manufactory without own marketing arrangement (*M*)	*M* + *Cwr* + *CWm*	*Dwp* + *DCTSC*	*M*	*M*	*M*	*M*
5. Manufactory with own marketing arrangement (*Mcm*)	*Mcm* + *Cwr* + *CWm*	*Dwp*	*Mcm*	*Mcm*	*Mcm*	*Mcm*
6. Silk weaving co-operatives (*SWcop*)	*CWcop*	*Dwp* + *SWcopdwp*	*CWcop*	*CWcop*	*CWcop*	*CWcop*

Note: Weaver's cottage (*Cw*); Drum warping place (*Dwp*); Cottage (rented house) of hired weaver (*CWh*): Cottage and/or workshed of master weaver (*CWm*); Workshop of Manufacturer i.e. manufactory without own marketing arrangement (*M*); Workshop of manufacturer i.e. manufactory with own marketing arrangement (*Mcm*); Cottage of winders and rewinders, etc. (*Cwr*); Cottage/workshed of member weavers of silk weaving co-operative societies (*CWcop*); Warping place of drum warper members of silk weaving co-operative societies (*SWcopdwp*)
Source: Derived on the basis of information obtained from field work.

We could not find much difference in the place of work according to various processes in difference systems except that the preparatory processes in the system *M* and system *Mcm* are also carried out in the homes of specialized workers and master weavers. The preparatory processes required for weaving in manufactories (*M* and *Mcm*) are carried out by specialized workers in their own home under piece–rate system of work. Manufactories and the worksheets of master weavers are workplaces for hired weavers although at the same time there are a small proportion of hired weavers who own looms and work in their own rented cottage (second form in System 2 in Table 4.8). However, we could not differentiate between the workplace of drum warpers in different systems because of lack of adequate information pertaining to it. It is clear, however, that as the wooden drum required in warping is available

on rent, all manufactories need not and do not own it. And professional drum warpers are available for hire whenever drum warping has to be done. For the *Wh, Wm* and small manufactories, the facility of drum warping is also available with the Demonstration cum Technical Service Centre located in Sualkuchi on payment of nominal charges.

In the production system 6 (see Table 4.8), member weavers (*Wcop*) of silk weaving co-operative societies (*SWcop)* work in their home. From our previous discussions, we found that they own worksheds, have looms but do not own yarn and cloth i.e. yarn is advanced by the *SWcop*, wages are paid and cloth is marketed thorough own showrooms and cloth stores.

Table 4.9 provides a quantitative dimension of the silk industry in Sualkuchi in terms of the different agents constituting the production systems. It shows that mulberry silk yarn and accessory is supplied by around 10 companies from Bangalore and other places to around 30 mulberry yarn dealers in Sualkuchi. Besides these, there are around 5 to 6 dealers of *muga* silk yarn in Sualkuchi. Some of the yarn dealers in Sualkuchi may own looms. However, they are considered as yarn dealers since it is their major occupation. Together with the co-operative societies and agencies like *Artfed* and *AGMC* who deal in yarn procurement, the yarn dealers supply yarn to around 3000 to 3500 weaving establishments in the industry and the cottage weavers. These establishments (owned by master weavers and manufacturers and dealers of cloth and yarn) employ around 15000 hired weavers and around 8000 to 9000 hired helpers besides the family weavers and helpers engaged in the establishments. This shows that the weaving establishments in Sualkuchi are dependent predominantly on hired weavers and helpers. This goes together with our earlier distinction of weaving establishments into master weaver system (*Wm*) and manufactories (*M and Mcm*) and our observation that the manufactories are dependent completely on hired weavers and helpers and that there is involvement of family weavers in the master weaver system. Around 70 per cent of all producers (which includes *Wm, M, Mcm, Wh* who own loom and *Wi*) in Sualkuchi come under the manufactory system, which is the most predominant system in Sualkuchi. The proportion of master weavers is around 20 per cent (employing both family weavers and hired weavers) of all producers and the cottage system (based completely on family member) would account for the rest 10 per cent.

Table 4.9: Number of agents involved in the production systems in Sualkuchi silk weaving industry

S. No.	Category of agents / participants	Approximate number*
1.	Yarn companies of Bangalore which supply mulberry silk yarn to yarn dealers in Sualkuchi	6
2.	Companies outside Sualkuchi which supply weaving accessories to Sualkuchi weaving industry	> 4
3.	Dealers of silk yarn and accessory in Sualkuchi (excluding co-operative societies) with own silk yarn retail stores	30
4.	Co-operatives and public sector enterprises involved in Sualkuchi silk weaving industry	22
5.	Dealers of muga silk yarn	5-6
6.	Dealer of muga silk waste in Sualkuchi	1
7.	Manufactory involved in silk cloth production and dealing in art silk and accessories wholesale and retail sale	2
8.	Number of weaving establishments* (*Wm + M + Mcm*)	3000 to 3500
9.	Number of hired weavers working in the above establishments (*Wm + M + Mcm)*	15000
10.	Number of hired helpers working in the establishments (*Wm + M + Mcm*)	8000 to 9000
11.	Number of graphmen	60
12.	Number of collection and distribution agents (*CDa*)	200
13.	Wholesale dealers/stockists of silk cloth in Sualkuchi # (*Dc + Mcm*)	80-100
14.	Number of retail cloth stores cum showrooms of silk cloth outside Sualkuchi in Assam	> 200

Note: * It excludes the cottage of independent weavers and dependent weavers.
Dealers of cloth (*Dc*) own cloth stores cum showrooms in Sualkuchi and other towns in Assam. Some of dealers who own manufactories (otherwise categorized as manufactories which own marketing arrangement in previous Tables) have more than one cloth store/showroom outside Sualkuchi.
Source: Informal discussion with the participants in the industry – including banks, co-operatives and Demonstration Cum Technical Service Centre, CSTRI, CSB, Sualkuchi and other published sources of information.

In the marketing of silk cloth, the involvement of collection and distribution agents (*CDa* in Table 4.9) is clear. Moreover, we observe dealers of silk cloth (*Dc*) and manufactories, which own cloth stores cum showrooms (*Mcm*) as the agents involved in marketing. *Dc* own cloth stores cum showrooms in Sualkuchi and other towns in Assam although some of them do not own cloth stores and stock silk cloth in their homes. This latter group is different form the collection and distribution agents in their ability to hold stocks for a longer duration.

Besides these, the involvement of co-operative societies and public sector marketing agencies that we referred to in our production system category earlier, is more in the marketing of cloth as only around 4 co-operative societies and marketing agencies in the public sector are involved in production A further break-up of some of the above categories is given in *appendix IVi.*

Excepting the independent cottage system, agents within a production system and those between different production systems are inter-linked through various arrangements. Some of the specific forms classified according to a few characteristics of transactions is shown in Table 4.10. Transaction *Te* is the most predominant form in which there is an informal wage contract between the master weaver and hired weaver and between the manufacturer and the hired weavers. This informal wage contract is based on a system of money advance. It is similar to the one in the Bhagalpur silk industry mentioned in Levkovsky (1966).

Table 4.10: Characteristics of the transactions in production systems

S. No	Agents		Features of the transactions								
			Advance		Price fixation		Mode of payment		Tenure		Wage
	Party A	Party B	Money	Yarn	P'	b²	Cash	Credit	Short	Short to medium	
Ta	*Mcm*	*Wm, M*	×	×	√	×	√	√	√	×	×
			×	×	×	√	√	√	×	×	×
Tb	*Dc*	*Wm, M*	√	×	√	×	√	√	√	×	×
			×	×	×	√	√	√	×	×	×
Tc	*Dc or Mcm*	*CDa*	×	×	×	√	√	√	√	×	×
Td.	*CDa*	*Wh, Wm, M*	×	×	×	√	√	√	√	×	×
Te.	*Wh, Wm, M, Dcm,*	*Wh*	√	-	-	-	√	√	√	√	√
Tf.	*MDyc*	*Wm, M*	×	√	×	×	√	√	-	-	√
Tg.	*SWcop*	*Wm, M*	×	√	×	×	√	√	×	√	√
Th	*Artfed*	*SWcop*	×	√	×	×	√	√	-	-	√

Note: p' – pre-fixed price based on yarn price and labour charges.
b² - market price determination based on bargaining.
- indicates lack of information; × indicates its absence; √ indicates its presence
Source: Field work conducted without any structured survey or structured interview.

The transaction of type *Tf* is between the dealers of both yarn and cloth who may own manufactory too (*MDyc*); however this system is much less prevalent and we have not included this system in our previous tables depicting the different systems. However, such arrangement is prevalent in the type of transactions *Tg* and *Th*. The transaction *Th* takes place between *Artfed*, a subsidiary of the department of Handloom and Textiles, and few silk weaving co-operative societies. It is a tie-up arrangement between the two in which, *Artfed* advances yarn to the *SWcop* against the value of cloth determined on the basis of cost of yarn, wages, margin, etc. We would discuss these arrangements in detail in the next chapter.

Apart form transaction of type *Tb* and type *Te*, advances in the form of money is not prevalent between the agents. Similarly, excepting the last three types of transactions in the Table 4.10 i.e. *Tf, Tg* and *Th*, the system of advances in the form of yarn against silk cloth is not prevalent in the remaining systems.

4.5. Summary

Production systems in Sualkuchi, at present, are similar to the lower forms of production, which evolved elsewhere in India during the colonial period and in England before the evolution of the factory system. In Sualkuchi silk industry, the production system is characterized by the developing system of manufacture in the form of manufactories/workshops. This is evident from the specialization of workers in various technical processes of production and existence of manufactories working with factory discipline with respect to hours of work and vacations. There is a clear division of management function and weaving. Employment of salaried managers in bigger manufactories is a further development in the division of functions. Thus, as observed in the literature, coexistence of various forms of production, which is a feature of the lower forms, is evident in Sualkuchi. Independent cottage system, domestic system of master weavers, certain forms of putting out or dispersed manufactory system, manufactories employing hired weavers and helpers and also hired managers in some instances are the important production systems in the industry. However, a distinguishing characteristic of all these production systems in Sualkuchi is that the independent cottage weavers, the master weavers, the manufactory owners or manufacturers and the dealers all have the traditional technical knowledge of the production process of silk cloth.

A system of money advances is widely prevalent in the wage contract system between the manufactory and hired weavers and also between the master weaver and hired weaver. Payment of the wages to hired weavers is on a weekly basis, whereas, in case of the hired helpers, it is a monthly stipend with accommodation for living and food. However, in the co-operative form of production, the system of advancing yarn is predominant.

In the next chapter, the focus is on the application of sub-sector approach in a limited way to the production systems discussed in this chapter. There the attempt would be to bring out the differences between the systems of production in terms of channels of interaction.

Chapter V

AN APPLICATION OF SUBSECTOR APPROACH TO THE SILK INDUSTRY IN SUALKUCHI

5.1. Introduction

In the preceding chapter, we discussed the major production systems prevalent in Sualkuchi and tried to distinguish them on the basis of certain characteristics such as ownership of yarn, loom, place of work and sales outlet besides the use of hired and family labour in different processes of weaving. This chapter differs from the previous chapter in that here we attempt to focus on the strengths and weakness of small enterprises in individual channels of production through an application of the sub-sector approach. We have already discussed in Chapter I that small enterprises are participants in vertical production/distribution systems. They procure inputs from a variety of suppliers and market their output through different firms. They face competition from large and small firms, which are vertically integrated to different degrees and use diverse technologies. The subsector approach places considerable weight on understanding the interaction – both competitive and complementary – among firms of different sizes and in different functions, including those involved in manufacturing, trade and services. The focus here is on the dynamic forces that influence the competitive positions of small and medium enterprises within a single product group or subsector consisting of a matrix of competing channels of production/distribution systems. Of course, the selection of sub-sector depends on the scope of study. One of the sections of the introductory chapter was devoted to an understanding of the sub-sector approach and a brief review of some earlier studies, which applied this approach. Here, we apply this methodology in a limited way because of the lack of sufficient secondary information on structure of the industry.

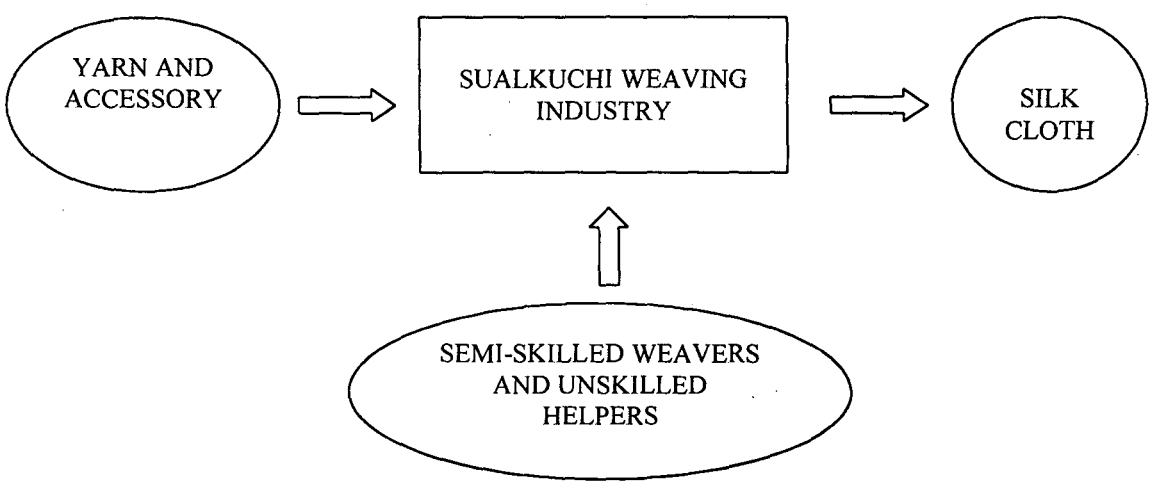
Selection of the Subsector

Sualkuchi is a predominantly mulberry silk weaving centre, as we already observed in Chapter II. Hence, this mulberry silk weaving sub-sector is selected for study. There is another reason, which makes the study of mulberry silk sub-sector in Sualkuchi quite interesting. Sualkuchi was historically a *muga* silk reeling and weaving centre. Even till the year 1969, it

was *muga* silk reeling and weaving that was predominant in Sualkuchi[1]. Despite this, over course of time, it has grown into a predominantly mulberry silk weaving centre although mulberry silk yarn production has not been taking place here. In the process, various types of relations have emerged which, subsequently have resulted in the particular type of production systems that exist there now.

A general view of the production system in Sualkuchi (Figure 5.1) shows that yarn and accessory comes to the silk weaving industry from outside. Weaving and its preparatory processes are carried out here and silk cloth is sold both inside and outside the region in a value added form. Into the weaving industry, there is an inflow of semi-skilled weavers and unskilled helpers from the same and nearby districts who, after learning silk weaving, start working in the handloom workshops of master weavers and manufacturers. The process of immigration of semi-skilled weavers into the weaving industry was mentioned in chapter three.

Figure 5.1: A general view of the production system[2] in Sualkuchi



5.2. Channels of Supply of Yarn and Accessory

The production of mulberry raw silk in Assam is around 15324 kg during 1999 (Statistical Handbook of Assam, 1999). Against this, the consumption of mulberry silk yarn in Sualkuchi is estimated to be around 394.5 kg per day (computed on the basis of 18 kg mulberry yarn

[1] As informed by a senior gram sevak in the Sualkuchi Block Development Office.
[2] For details on the production processes carried out in Sualkuchi, please refer to *appendix IIIi.*

consumption per loom per annum, 250 working days and for 8000 commercial looms under mulberry silk). This shows that the local production of mulberry silk within the State is enough for fulfilling only 38 days consumption of mulberry silk yarn in the silk weaving industry. Hence, the industry depends predominantly on the supply of *Karnataka silk* yarn (mulberry silk yarn produced in Karnataka) yarn and also on the silk yarn supplied from China *(China silk)* to a limited extent. Despite this, over course of time, Sualkuchi has grown into a predominantly mulberry silk weaving centre.

As noted in Chapter IV, there are around six dealers from Bangalore who supply mulberry silk yarn to yarn dealers of Sualkuchi, silk weaving co-operative societies and government agencies. They are Shivaji Enterprise, Batwala and Company, Render Enterprise, Mahalaxmi Trading Company, Thunga Enterprise and Khude Enterprise. Whereas all other yarn companies have direct linkages with the yarn dealers of Sualkuchi for the supply of mulberry (*pat*) silk yarn, Shivaji enterprise supplies silk yarn through its own agents in Guwahati. The most predominantly used silk yarn in Sualkuchi is that supplied by Shivaji Enterprise followed by Batwala and Company.

Some of the bigger yarn dealers in Sualkuchi are Baishya and Sons, Kalita Enterprise, Padma Silk Centre, Baishya Silk Enterprise, No.1 Pub - Bangsar GP and KRB store. Out of these, Padma Silk Centre and KRB store are also dealers of silk cloth. However, the remaining are relatively small yarn dealers and many of them also own looms. We could not distinguish the differences between these two groups of yarn dealers, i.e. the bigger and smaller yarn dealers, with respect to their arrangements with the weavers and manufacturers due to the lack of sufficient information.

The yarn dealers in Sualkuchi get their supply simultaneously through two channels. In the first channel, they purchase silk yarn directly from the agent of Shivaji Enterprise who is located in Guwahati. The agent makes the delivery of yarn in Sualkuchi, also on credit. In the second arrangement, yarn dealers and manufactories dealing in retail yarn business place their orders directly to the yarn companies in Bangalore. Transaction takes place through bank bills. Yarn is transported from Bangalore to Guwahati by airways. Yarn dealers take their delivery from Guwahati themselves. Earlier mulberry silk yarn was parcelled through roadways and dealers had to pay parcel charges. This way is no longer practised now.

Besides Bangalore silk *China pat* is also used in the warp. *China pat* is smooth which means a higher consumption of yarn per unit of cloth. Price of yarn varies according to the brand name. Fluctuations in the price of mulberry silk yarn are frequent. One of the underlying reasons is its relation with the variation in the auction prices of raw silk in Bangalore market. Another reason attributed to this is the artificial scarcity created in the supply chain of mulberry silk yarn.

Price of Mulberry Silk Yarn (pat) in Sualkuchi

Table 5.1: Changes in the price of mulberry silk yarn in Sualkuchi

Year	1939	1953	1961	1971	2001*
Price of mulberry silk yarn (in Rs. per Kg.)	22	63	63	200	1300 to 2300

Note: * Range of prices paid by producers for different types of yarn – warp and weft, dyed yarn.
Source: Baishya (1972) up to 1971 and based on fieldwork for the year 2001.

At present, availability of *pat* is not a constraint. Further details on the prices of mulberry silk yarn of different types are shown in Table 5.2.

Table 5.2: Retail price of mulberry silk yarn in Sualkuchi: April 2001

Type of mulberry silk yarn	Price of mulberry silk yarn (Rs. per kilogram)	
	Bangalore silk	China silk
Warp yarn	1500 to 2000	1650 to 1700
Weft yarn	1900 to 2300 (coloured)	
	1300 to 1500 (not dyed)	

Source: Fieldwork conducted during April 2001.

The above table shows that there is considerable variation in the price of different types of mulberry silk yarn, which may be due to differences in quality. While relating the differences in the price of warp and weft yarn we observe that the price of uncoloured warp yarn is higher than that of the uncoloured weft yarn whereas it is reverse in case of coloured yarn. In section one of chapter two we observed that best quality cocoons are used for making warp yarn as it requires high tensile strength. Hence, price of warp yarn is higher if it is not coloured.

Supply of art Silk and Weaving Accessories

Art silk yarn is supplied mainly from Salem. One of the two art silk yarn dealers in Sualkuchi gets it dyed in Sanker Dyeing Centre located in Guwahati. The other art silk yarn dealer has established a dyeing unit in Sualkuchi by employing a dyeing expert from Bangalore. Gold thread is supplied from Surat by Jitendra Jariwala while *doby* and cards are supplied by Banaras Jacquard Works from Varanasi. The transportation cost from Varanasi to Sualkuchi for one *doby* machine comes to about Rs.150/-.

It may be seen that for each quantity of art silk, gold threads and other accessories, producers have to incur an additional cost for transportation. Lack of supporting industries in Sualkuchi is therefore a constraint in the production system that affects the competitiveness of silk cloth produced in Sualkuchi as compared to other silk production centres like Banares, Kanchipuram, and Mysore.

Mulberry silk yarn is used in weaving the warp and the weft. For the weft, coloured mulberry silk yarn, which is available in the market, is used. Mulberry silk yarn, which is used for the warp is, however, coloured by the weavers, master weavers and manufacturers themselves with their primitive knowledge on dyeing (see Chapter IV). A yarn-dyeing unit is established in Amingaon near Guwahati through the assistance of Central Silk Board[3] and others. In addition to this, there are two dyeing centres for art silk – one located at Guwahati and the other at Sualkuchi.

Yarn Supply Arrangements under the Co-operative and Public Sectors

The Assam Co-operative Silk House Limited procures predominantly *Karnataka silk* followed by *China silk.* During the time of shortage, the Silk House purchases yarn from the private agents. It has an agency of S. Dhandusa Gold Thread Company. Similarly, Assam Sambai Resham Pratisthan Limited is also involved in the procurement of yarn. However, others such as Pragjyoti Industrial Weaving Co-operative society have stopped advancing yarn to its member weavers due to financial constraints.

[3] Demonstration Cum Technical Service Centre, Central Silk Board, Sualkuchi informed that the dyeing unit is not functioning well.

The public sector enterprises involved in the procurement of yarn from Bangalore are Assam Apex Weavers' and Artisans Co-operative Federation Limited *(Artfed)* and Assam Government Marketing Corporation *(AGMC)*. *Artfed* procures *Render* and *Khode* brands of mulberry silk yarn from Bangalore under the *Mill Gate Price Scheme* of National Handloom Development Corporation *(NHDC)* and add handling/carrying charges at the rate of 2 per cent to the *mill gate price*. The handling/carrying charges are higher by 1 to 1.5 per cent in comparison to other private arrangements. This could be so because the agency has to incur higher administrative cost in comparison to private dealers who run the business with the help of family members.

Involvement of *AGMC* in the supply of mulberry silk yarn to the weavers of Sualkuchi has started since January-February, 2001 under the *Mill Gate Price Scheme*. During the months of January to April, the procurement of mulberry silk yarn was worth rupees nine lakhs.

5.3. Organisation of Silk Weaving Industry in Sualkuchi

Silk weaving industry in Sualkuchi is constituted of private, co-operative and public sector enterprises. Public sector enterprises are involved in marketing of silk cloth. A broad structure of the silk weaving industry in terms of production and distribution arrangements between the unorganised private sector, co-operative sector and the public sector marketing agencies is shown in Table 5.3.

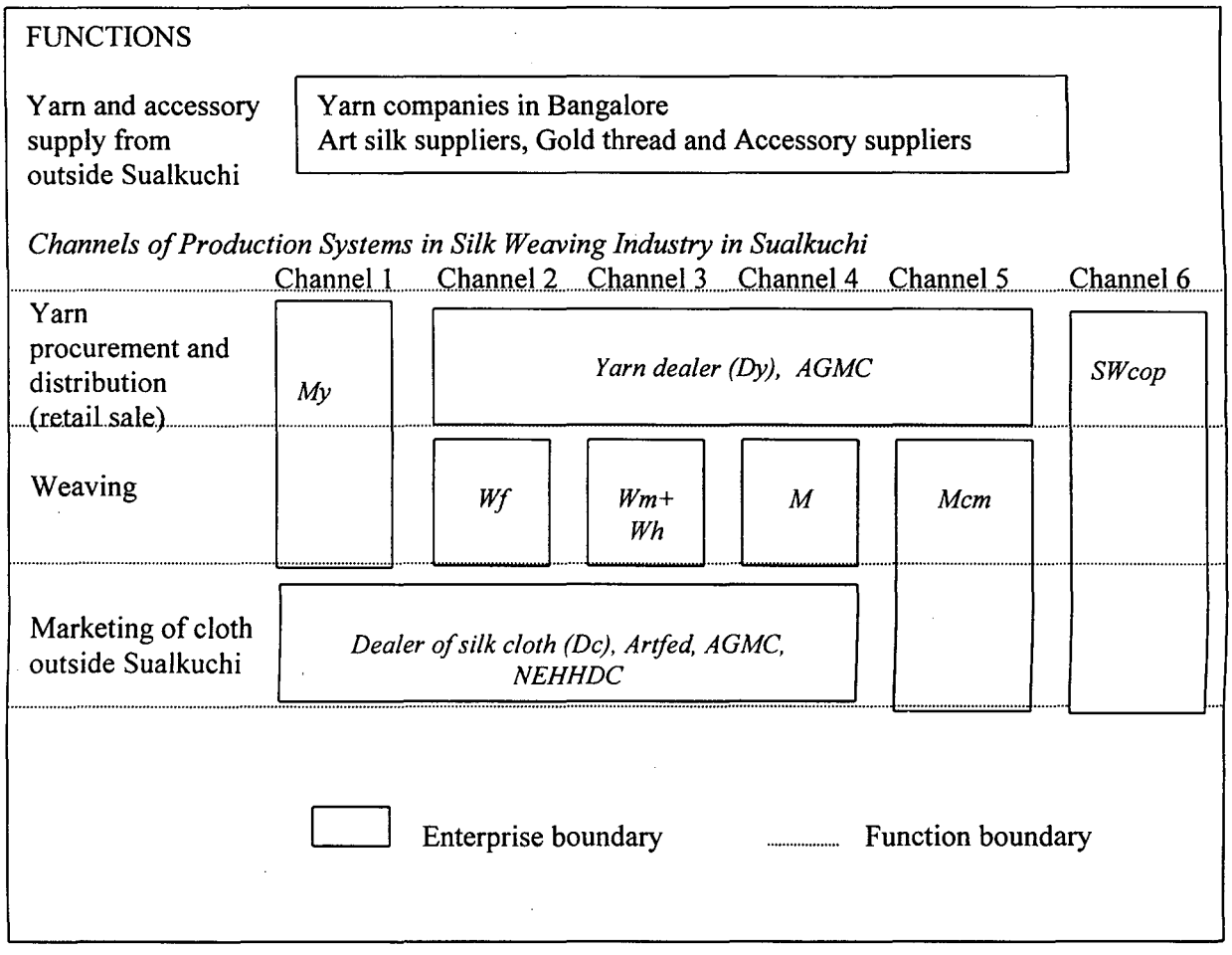
Table 5.3: Distribution of the broad categories of arrangements prevalent between agents of different sectors

Type of arrangements	Private sector & SWcop	SWcop & public sector	Public sector and private sector
Production	×	√	×
Marketing	√	√	√

Note: × means that there is no arrangement; √ means that there is arrangement.
Source: Fieldwork during April, 2001.

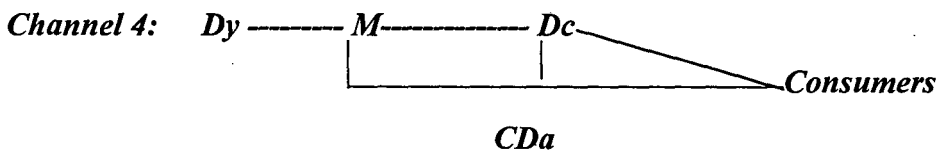
From this totality, we have separated out the agents on the basis of differences in the degree of integration of functions and other agents with whom there exist some kind of arrangements to constitute together particular channels of production/distribution. These are outlined below in a subsector map. It is a reworking of the systems view in Chapter IV.

Figure 5.2: Subsector map of mulberry silk weaving industry in Sualkuchi



Note: Manufactories where weaving of silk cloth is carried out and manufacturers who own these are also yarn dealers involved in retail sale of silk yarn and accessory (*My*); Hired weavers with own looms (*Wh*); Weavers who carry out production with the help of family members without relying on hired weavers and helpers (*Wf*); Master weavers (*Wm*); Manufactories where weaving of silk cloth is the function of hired weavers and helpers and which do not own marketing arrangement (*M*); Manufactories where weaving of silk cloth cloth is a function of hired weavers and helpers and which own marketing arrangement (*Mcm*): Silk weaving co-operative societies engaged in weaving and marketing of silk cloth (*SWcop*); Assam Apex Weavers and Artisans Co-operative Federation Limited (*Artfed*); Assam Government Marketing Corporation (*AGMC*)
Source: Drawn on the basis of fieldwork during October 2000 and April 2001.

In the above subsector map, we have broadly distinguished among the different combinations of agents constituting the channels of production systems. We now attempt to trace the arrangements between the agents within each channel in terms of production and distribution.



In the above sub-sector map, the predominant channel of production is channel 4. This channel is an organisation of yarn dealers (*Dy and My*), manufacturer (*M*) and dealer of silk cloth (*Dc*). Manufactories engaged in the production of silk cloth purchase silk yarn and accessory from yarn dealers on both cash and credit. They engage hired weavers and helpers in the weaving process. In carrying out preparatory processes like drum warping, bobbin and swift winding, drafting and denting, graphing and card punching also, hired workers are engaged. The predominant form of wage payment is piece-rate[4].

Manufacturers in this channel of production have marketing relations with agents in the same channel and also other channels. This is shown in Table 5.4.

Table 5.4: Marketing arrangements of manufactories in channel 4 with agents involved in distribution of silk cloth in the same and different channels.

Agents involved in marketing arrangements
4a - Manufacturers (*M*) have marketing arrangements with *Dc* without involvement of *CDa.*
4b - *CDa* is the link between the manufacturer (*M*) and the consumer.
4c - *CDa* is the link between the manufactory (*M*) and *Dc.*
4d - *M* has marketing arrangements with *Mcm* in channel of production/distribution 4.
4e - *M* has marketing arrangement with *AGMC, Artfed* and *NEHHDC* shown in the same channel 4.
4f - *M* has marketing arrangement with. *SWcop* in channel 6.

Note: Specific marketing arrangements between manufacturers in channel 4 and marketing agents in other channels is discussed in the subsequent pages.

Predominance of smaller manufactories is a characteristic feature of channel 4. These small manufacturers have certain similarities with master weavers (*Wm*), weavers working with the help of family members without engaging any hired weaver or helper (*Wf*) and hired weavers who own looms (*Wh*). Certain common features are outlined below (see Table 5.5):

[4] Some details on piece-rate wage systems prevalent in informal wage contracts between the manufacturers and hired workers who are specialised in different processes are given in *appendix Vi.*

Table 5.5: Features common to small manufactories (*M*) in channel 4, *Wm, Wh (channel 3)* and *Wf (channels 2)*

S. No.	Features
i.	Distress sale is a result of low own capital to hold stock during the season of low demand (May to September).
ii.	Price received for cash transaction during the season of high demand (October to April) is lower in comparison to credit transaction.
iii.	Weaving is done by hired weavers with relatively lower skill in comparison to bigger manufactories as skilled weavers are in a position to bargain for higher amount of advances which the small manufactories, *Wm* and *Wh* are not in a position to pay. Relatively bigger manufacturers (also called *mahajan* weavers in Sualkuchi) having own marketing arrangement (*Mcm*) are capable of paying higher rates for designs, which results in a shift of skilled weavers from other establishments.
iv.	Quality of mulberry silk cloth woven in small establishments is therefore inferior and does not facilitate bargaining for better price in the market.
v.	To know whether small establishments of master weavers, and small manufacturers are the routes of entry for semi-skilled weavers into the silk weaving industry requires further research.
vi.	Inability to purchase yarn in bulk during a single transaction because of low working capital. Hence, frequency of small transactions is high.
vii.	Direct communication with the consumers is limited. That is why, adequate market information is also not available. However, it flows in the form of orders for silk cloth of specific designs and colour combinations from the marketing agents (including *Mcm*).
viii.	Inadequate effort and time spent on accounting. Sometimes, it results in loss of ownership of resources and conversion into wage weavers.

The marketing arrangement of silk cloth produced by *M, Wm, Wh* and *Wf* (in channels 4, 3, and 2 respectively) with *Dc, AGMC, Artfed* and *NEHHDC* are similar. Hence these are also discussed together.

The agent *Dc* distributes the greater proportion of the combined silk cloth production of *M, Wm + Wh, Wf* and *My* through its marketing arrangements. They are stockists of silk cloth who sell the cloth through own cloth stores-cum-showrooms. Dealers of silk cloth purchase it

at lower price during the rainy season, when demand for silk cloth is low, and stock cloth for few months and sell it during the season when the demand is high[5].

Table 5.6: Arrangements of *Dc* in channels 2, 3 and 4 with its suppliers

S. No.	Suppliers	Arrangements
i.	*CDa*	Cash and short duration credit purchase.
		Price is fixed on the basis of bargaining.
ii.	*Wh, Wm, M*	Cash and short duration credit transaction.
		Price fixed on the basis of bargaining.
		Based on orders.
		Advance payment of money for the supply of cloth is prevalent to a limited extent.

One of the major characteristics of *Dc,* with a few exceptions, is that they do not provide advances in the form of yarn to the weavers against security of cloth. There are only about 5 to 6 manufacturers (who are also yarn dealers, own workshop where hired weavers are employed against piece-rate wage) who give advances to weavers in the form of yarn and take back cloth for marketing by paying wages [6]. Weavers work in their own home. We have not included this system in the subsector map because it is not a predominant system of production. However, this system of advances in the form of yarn against the security of cloth is declining in Sualkuchi, an industry, which is dependent on outside supply of silk yarn. It is an issue of interest that needs further investigation. In the subsequent analysis, we focus on the arrangements of the small weaving enterprises (including small manufactories, master weavers, *Wh* and *Wf*) with marketing agencies in the public sector.

AGMC, a sister-concern/subsidiary of the Department of Handloom and Textiles established in 1959, is involved in the supply of mulberry silk yarn to weavers of Sualkuchi, purchase of silk cloth and its distribution through various emporia. Purchase of silk cloth from weavers and *M, Dc, Mcm* of Sualkuchi is done under three terms:

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[5] According to the branch manger of the Pragjyotish Gaonolia Bank, Sualkuchi, often the profit margin is as high as 20 per cent during a period of two to six months.

[6] Weaving and designing charges are calculated on the basis of piece-rate which is same for weaving a particular cloth but vary according to the designs. To this amount of weaving and designing charges, an additional equal amount is added which includes the preparatory charges and a commission for supervision. On this basis, also called *double system*, wage is computed.

1. Cash purchase
2. Credit purchase: It is the major arrangement; duration of credit is 30 to 45 days.
3. Consignment basis: Payment is made after sales. Unsold goods are returned to producers.

AGMC has to operate on formal terms with the weavers and manufacturers whereas the *Dc* and *Mcm* (known as *mahajans* in Sualkuchi) are on more informal terms with the producers because of the advance system and their long-term relationship with the suppliers.

Another public sector organisation involved in marketing of silk cloth is the North Eastern Handloom and Handicrafts Development Corporation *(NEHHDC)*. With Ministry of Textiles holding the share capital, the Corporation was established in 1977. It provides marketing support to manufacturers of Sualkuchi through showrooms named as *Purbasree* located in few major cities in India against payment of a nominal charge for using the infrastructure. Its users are mostly *Mcm* and *Dc,* who purchase silk cloth from other master weavers, weavers and manufactories. Earlier the Corporation was involved in purchase of silk cloth. But, it has been discontinued as the marketing arrangement in Sualkuchi is advanced and hence, the fund that was otherwise used to procure silk cloth is now used for other handicrafts. It does not have any involvement in supply of yarn.

Artfed has production and marketing arrangements with 50 to 60 individual weavers in Sualkuchi. On the total value of cloth, 60 per cent is paid in terms of yarn and the remaining 40 per cent is paid in cash. There is no price fixation before production.

In the discussion above, we observed that channels 4, 3 and 2 together constitute a dis-integrated production system where yarn supply, weaving of cloth and its marketing are functions of separate firms. Further, this system is constituted by the relatively smaller weaving enterprises in comparison to channel 5 and it is most predominant in terms of number of weaving enterprises. In the absence of in-depth understanding of these channels of production, we cannot strongly argue out the strengths and weakness of this system and their competitive position in relation to bigger manufactories. However, on the basis of a few

observations mentioned above and the insights gained from our review of literature in Chapter I we can infer the relative competitive position of these small producers.

Small weaving enterprises are participants of vertical production/distribution channels. They purchase yarn from a variety of suppliers and market silk cloth through different firms. They face competition from both small and large weaving manufactories, which are vertically integrated to different degrees. One of the major disadvantages of this system in relation to the channel 5 is that the small producers purchase silk yarn of lower price[7]; produce low quality cloth for a low income group of consumers. In addition to the use of low quality yarn, they engage relatively low skilled weavers in weaving, which is another reason for inferior quality of cloth. The small manufactories and master weavers are not in a position to engage skilled weavers as the skilled weavers demand higher amount of money advances. They also have lower access to information in comparison to the bigger manufactories with own marketing arrangement. Information for production decisions is available to them in the form of orders placed by *Dc, Mcm and CDa.* Boomgard et al (1988) found that under such situations, the small producers are most likely to have under utilised labour, and miss sales opportunities. Stagnant demand, low prices and low remuneration are the major characteristics of such a channel of production. According to them, little cost reduction is possible either in input quality or in labour costs, so negative economic costs push these firms out of business. As these micro and small enterprises can operate at the margin, capital conservation and risk aversion are also important characteristics of this channel. The use of itinerant retailers, consignment sales, and family labour are all manifestations of these concerns. This dis-integrated channel in Sualkuchi is very much similar to that mentioned by Boomgard et al (1988), especially with respect to the manifestations in the form of consignment sales arrangement of *AGMC,* prevalence of *CDa* (itinerant traders) and involvement of family workers. Our observation on the prevalence of distress sale in this system is followed by the limited capacity of the small enterprises to produce for inventory, which is a major disadvantage in comparison to the manufactories with own marketing arrangements. Although marketing infrastructure of agencies like *NEHHDC* is available against payment of nominal charges, these are not accessible since small producers cannot compete in the wider national market without inventory and with the low quality of silk cloth that they produce.

[7] We have observed considerable variation in the price of silk yarn in section 5.2.

Channel of Production/Distribution 5

This is the most dynamic production system in Sualkuchi, which has experienced some growth during the last decade. In this channel, the manufacturer with own marketing arrangement owns relatively larger manufactory (which is already observed in Chapter III). A number of cloth stores-cum-showrooms of silk cloth located in Guwahati and other towns in Assam are owned by such agents. Integration of marketing function with weaving is a later development in this system (see Chapter III). The agent *Mcm* has to get assured supply of silk cloth from other producers, as its own production is not sufficient for meeting the costs for running the retail business profitably. It has supply relations with *M, Wm, Wh* and *Wf;* one of the arrangements is to supply cloth at a pre-fixed price for a short time period irrespective of the price of yarn[8]. Purchase of silk cloth at market price on cash and credit is another mode of transaction, and the third one is based on orders of specific designs and colour combinations placed by the *Mcm* to the suppliers at a mutually agreed upon price for a short duration. In this case, the supplier has the freedom to supply cloth to other *Mcm* or *Dc* if he/she is in a position to bargain for a higher price. Among these three forms, the latter two are more prevalent in Sualkuchi. An important reason for such arrangements of *Mcm* with *M, Wm, Wh* and *Wf* for supply of silk cloth is that the market for the silk cloth is becoming increasingly competitive as a consequence of the establishment of a large number of retail cloth stores-cum-showrooms during the last decade in various towns in Assam. Therefore, it is necessary to keep enough stock which would provide a wide range of choice to customers. This means that *Mcm* cannot satisfy the entire stock requirement in their cloth store-cum-showrooms from own production of silk cloth in the manufactory, which in turn indicates a potential growth constraint of the manufactories in the channel 5.

Another interesting feature of *Mcm* in this channel is its involvement in product innovations based on new designs. Such designs are purchased from professional designers and are also developed by designers in own manufactory. However, once a product with a new design is developed and displayed in the showroom for sale, other enterprises imitate it and produce similar designs by incorporating minor changes.

[8] As informed by a few cloth dealers/salesmen during field work in 1999.

Channel 5 has advantages over other channels because it has inventory to fulfil peak demand. The manufacturers (*Mcm*) in this channel have market information on customer choice and also on potential markets, access to the channels of distribution catering to markets outside the State in both private and public sectors. Further, it has ability to bring in changes in products and to control quality. They can buy inputs in bulk, hire labour and achieve some economies of specialisation (Boomgard et al, 1988). Because of its supply arrangements with other small producers, it has flexibility in managing production. It also has advantages in administrative and management costs including handling and carrying charges, which arise from scale of production/business as it is relatively higher than the small manufacturers without own marketing arrangement. Since the production and marketing functions are integrated, the margin obtained by *Mcm* for its own production is likely to be higher in comparison to *M* in channel *4* where the retailer's margin is owned by *Dc*. Its strength in comparison to the dealers of cloth (*Dy*) is in fulfilment of a portion of total supplies from own production while other supply arrangements are common to both. Because of it, *Mcm* face less uncertainty in supply of silk cloth in comparison to *Dc* who are fully dependent on outside supplies. Under such relatively disadvantageous position, it is not surprising to observe a system of money advances followed by the *Dc* although to a limited extent (see Table 5.6). Better supervision is an important factor, which determine quality of silk cloth. Another important factor is the availability of skilled weavers. Both of these are available to *Mcm*. Contrarily, *Dc* are dependent on small manufactories who have limited ability to employ skilled weavers. These smaller manufactories are in a relatively disadvantageous position to produce high value silk cloth. Hence, *Dc* whose source of supply is small manufacturers and weavers are at a disadvantageous position to compete with *Mcm* in high value silk cloth.

Channel of Production/Distribution 6

Co-operative mode of organisation contributes to about 30 per cent[9] of total production in Sualkuchi. Shareholders of silk weaving co-operative societies (*SWcop)* are weaver members (*Wcop*) but all *Wcop* are not shareholders. Details about the wage rate under this channel are in *appendix Vii*. At present, only about two to three silk weaving co-operative societies are engaged in production on the basis of the system of yarn advances. The remaining co-operative societies are no more engaged in the supply of yarn and they are engaged only in

[9] According to Production Manger, *Artfed*, Guwahati.

marketing of cloth, which is purchased from the members as well as non-member weavers. Management of the *SWcop* is a constraint in this channel. A reason for not practising the system of advancing yarn at present is lack of working capital, as government did not pay the rebates and commissions during the previous years[10]. As a result, whatever capital they have at present is invested in purchase and marketing of silk cloth. They have had arrangements for marketing of silk cloth besides supply of yarn with *Artfed* and *AGMC* as shown in the following Table 5.7:

Table 5.7: Type of transactions between *SWcop* and marketing agencies in public sector and between *SWcop* and other private agents, member weavers

Name of the society*	Marketing agencies in the public sector and other agents with which *SWcop* have arrangements	Mode of transaction
Pragjyoti Industrial Weaving Co-operative Society Limited	Excess silk cloth production was sold to *Artfed*	Cash and credit In the form of yarn
The Assam Co-operative Silk House Limited	*Artfed* and *AGMC* Non-member weavers	„ A portion of the value of cloth is paid in terms of yarn.
	CDa outside the State for marketing *sarees* and plain cloth	On commission
	Wcop	Yarn advance Price agreement

Note: * At present, both these societies are not having any marketing arrangements with *Artfed* and *AGMC* because of problems in receiving payments.

Thus, a feature of *SWcop* channel of production is its arrangements with other formal marketing organisations under the public sector. *Artfed*, which is also a participant in this channel, has production and marketing arrangements with silk weaving co-operative societies and weavers (discussed with channels 5, 4, 3 and 2). For the supply of cloth, it has tie-up with four co-operative societies in Sualkuchi to whom yarn is advanced and from whom cloth is collected against payment of wages. Price of cloth, which is paid to the societies, is fixed on the basis of consumption of yarn, production cost, wages and profit margin of producers.

[10] As per Secretary of *Pragjyoti Industrial Weaving Co-operative Society.*

During recent years, sales of silk cloth by *Artfed* in both quantity and value has increased. *Sarees,* as dress material, have a demand outside the State. Demand for continuous border *sarees* is, however, higher whereas its production is much lower in Sualkuchi. Even when both continuous border and stitched border *sarees* are considered together, its share in silk cloth production is low and remained stagnant. However, the market for *sarees* is much larger in comparison to other traditional dress materials produced in Sualkuchi.

A distinguishing feature of channel 6 is that the weaver members have to follow standards pertaining to the size dimensions of silk cloth. However, it is a weakness since the private producers by changing the size of cloth a little can compete in cost for the same product. In channel 6, wage payment is determined not merely according to double wage system but due consideration is also given to the quantity of yarn consumed per piece of dress material while computing the wage. Hence, the quality deterioration arising out of light beating while weaving the weft is checked to some extent. While light beating reduces the cost due to lesser consumption of yarn, quality of cloth is relatively inferior. Therefore, producers in other channels are in a position to compete better since consumers can hardly make out and/or look for these differences. This is a weakness of channel 6 vis-à-vis other channels.

Strength of this channel of production lies in its ability to offer better share out of profits to its member weavers by way of dividends. Occasionally, bonus is also given to its members. In case of certain well performing silk weaving co-operative societies, employees are also share holders which is a significant factor underlying their better functioning. In marketing of silk cloth, this channel has an access to outside the State market through the emporium of *Artfed* located outside the State. *Artfed* has even developed export market linkages although it is predominantly for *muga* silk. Access to such marketing arrangements to the *SWcop* could provide a basis for the development of export market for mulberry silk cloth produced in this channel. However, ability to weave quality products and product differentiation are major constraints in competing these potential markets. In handloom weaving, better supervision, uniform weaving and designing are the major determinants of quality. Contrarily, supply relations of *Artfed* with individual weavers and the declining arrangements with *SWcop* do not go together.

Channel of Production 1

Around 25 out of 30 yarn dealers are also manufacturers who have small workshops and at the same time they are also involved in retail business of silk yarn and accessory. A few of such agents with integrated functions of weaving and yarn supply, who were interviewed during the field work, is presented in *appendix Viii*. In the few instances, integration of yarn procurement and its retail sale with production is a comparatively later development, which can be inferred from the year of commencing yarn business. Growth in the number of such agents indicates decentralisation. The major advantage of this channel is an assured availability of yarn at a cheaper rate, as the retailer's margin in yarn supply need not be incurred. Hence, production is possible at a lower cost through which it can withstand competitive pressures, survive and grow. However, small number of owned looms reported by some of the yarn dealers (*appendix Viii*) suggest growth constraints in this integrated system of retail yarn sale and silk cloth production.

In this section, we observed channels of production/distribution of silk cloth in Sualkuchi, which are integrated to different degrees although as a whole the entire production system in Sualkuchi is a dis-integrated one, as it does not produce inputs of production including yarn. Among the various channels in Sualkuchi, Channel 1, characterised by integration of production and retail sale of inputs appears to have grown in terms of number of agents, whereas we do not have any evidence to say that because of integration, production capacity in terms of number of looms has increased. That Channel 6, a channel of integrated yarn procurement, weaving and retail sale is not functioning satisfactorily, is indicated by the declining relations of silk weaving co-operative societies with *Artfed* and their departure from yarn procurement and production functions, while confining themselves primarily to the marketing of silk cloth. Channel 5 with integrated weaving and retail sale is, however, the most dynamic system, which has experienced growth during the last decade. At the same time, this channel has silk cloth supply relations with small producers, which indicates that producers have relied on suppliers instead of increasing own production further. There are various reasons to explain this. Mead (1984) has explained (in chapter one) regarding why most production/distribution systems are not combined together into fully integrated firms. The extent of vertical integration and the nature of contracts are strongly influenced by transaction and information costs, especially in the presence of asymmetrically held

information and variable market power. The resulting institutional relationships affect the competitive position of micro and small enterprises, the ease of co-ordination and the obstacles to growth in different channels (Boomgard et al, 1992).

5.4. Unskilled Entrants and Graduation into the Class of Weavers

A process of gradual skill formation and an upward movement along the trajectory of acquisition of ownership of looms and weaving establishment is evident in the weaving industry. A worker starts working as a helper, becomes a weaver, then a master weaver and/or manager of a weaving factory (or bigger manufactory) and he/she finally becomes owner of an establishment. Manufacturers and master weavers in Sualkuchi have gone through this process. Workers from the nearby villages as well as from trading and other community who joined the industry as helpers have become master weavers and manufactory owners in course of time. This process is evident at present from the existence of wage earning weavers who besides working as hired weavers in bigger manufactories work in their own looms during the non-working hours from 12.00 noon to 3.00 p.m. and after 8.00 p.m. Besides weaving with own loom, such hired weavers who own looms (*Wh*)[11] also employ other hired weavers/apprentices who do not own looms.

Hired Helpers – their Function, Wage and Acquisition of Weaving Knowledge

In Sualkuchi, weaving is done in fly shuttle handlooms. *Dobby* is used for designing of cloth. In this process, the involvement of helpers and weavers is predominant. Major functions of helpers include bobbin and swift winding, providing *mohura* (bobbin where weft yarn is wound to be used in the shuttle) for supplying weft yarn uninterruptedly in such a manner that weaving is not disrupted. In the small manufactories and master weaver system, both family members and hired workers do the work of helpers. Hired helpers are often children who are aged around 15 years and are paid monthly stipends. It varies between rupees three hundred to rupees five hundred per month in addition to the provision of food, lodging and clothing. Graduation to class of weavers depends on their ability to acquire the skill and as soon as they acquire such skill they prefer to be weavers as that offers them the opportunity to earn more.

[11] According to a weaver, the proportion of such weavers in Sualkuchi is less than ten per cent of all hired weavers.

Semi-skilled Weavers: Apprenticeship

Apprenticeship for semi-skilled[12] weavers is for a period of around six months. At the beginning, they are allowed to weave plain silk cloth without designs, and subsequently they start weaving silk cloth with designs. During the period of apprenticeship, no regular wage is given to the weavers. However, they are provided with food and shelter. When the period of apprenticeship is over, a weaver can earn a monthly income of around rupees one thousand when he/she is a beginner. A measure of weaving skill of a weaver is his/her ability of uniform beating upon which depends the quantity of advances paid to a hired weaver on joining a manufactory.

Information on the entry of semi-skilled weavers into the weaving industry is not available; hence it calls for further inquiry.

Skilled Weaver: Employer-Employee (Production/Labour) Relations

Once a weaver acquires the necessary capabilities of weaving and designing, before joining a manufactory, he/she enters into an informal wage contract with the manufacturers which is based on the system of advances and its amount varies in the range of rupees two thousand to rupees ten thousand. The amount of advances also varies between male and female weavers in the range of rupees four thousand to ten thousand for male weavers against a range of rupees ten thousand to rupees six thousand for female weavers. The variation in advances is presumably due to the differences in weaving capacity and skill in weaving. While the former relates to speed, the latter is a function of uniform beating ability and designing capability. Such advances paid to a hired weaver are adjusted against the weekly wage by deducting a small portion. Renewal of these informal labour contracts is manifested in the form of another advance, which is taken by the hired weavers at the time of vacations during October and April. Default accounts are also cleared during this time. And it is during this time that the weavers enter into new agreements with other manufactory owners in case of workplace shift. Instances where the weaver after obtaining advances before the vacation does not return to the place of work and in situations when a weaver leaves an employer as soon as another

[12] Workers who migrate to the weaving industry with background of cotton weaving in fly shuttle looms but have to learn silk weaving before they start working as silk weavers.

manufactory owner offers him/her a higher amount of advance are quite high. In such circumstances, there is no mechanism to enforce the wage contracts. In the absence of any registration system of new entrants as well as other weavers, it becomes difficult to know the whereabouts of hired weavers and their employers.

Conflicts between the hired weaver and the employer (*Wm, M, My, Mcm*) arise from the differences in accounting weaving and designing charges in the absence of maintaining records books unlike the *double accounting system* followed in other workplaces. In some workplaces, there is a system of maintaining two record (double accounting system) books against each weaver for accounting advances taken, wages due (number of pieces of cloth woven, piece rate and designing charges per piece) per week, and amount recovered out of the advances, balances and payments made each week. One book remains with the employer and the other with the weaver. The problem of weavers' leaving and joining another weaving establishment appears to have become common in Sualkuchi. It has compounded because of scarcity of weavers in relation to the number of looms, formation of a class of wage weavers who have migrated from nearby districts to Sualkuchi and the resulting increase in their bargaining power as the industry in Sualkuchi is dependent predominantly on their productive power.

Variations in designing charges are another reason for hired weavers' shifting from one place of work to another. Owners of bigger manufactories (called *mahajans* in Sualkuchi) pay relatively higher designing charges to skilled weavers in order to attract them to their manufactories. This is one of the major dynamics of the subsector and therefore we illustrate this phenomenon through the following discussion:

Wage that is paid to hired weavers in manufactories has two components: (i) piece rate for weaving plain dress material; (ii) designing charges. Piece rate for weaving plain cloth varies according to the type of dress material. Following is an approximation of the current piece rates for weaving plain weaving component of dress materials without designs prevalent for different types of dress materials:

Table 5.8: Weaving charges for plain cloth

Type of cloth	Piece rate for weaving plain cloth (in Rs.)
Saree	150
Mekhala	20
Chader	25
Shirting piece	25
Blouse piece	20 to 25
Dhoti	100
Dara chader	25

Source: Fieldwork during April 2001.

Wage rate for designed cloth includes designing charges over and above the piece rate for weaving plain component of it. Following is an approximate picture of designing charges:

Table 5.9: Designing charges in manufactories

Type of design	Art silk (in Rs.)	Gold thread (in Rs.)
Per 100 *muthi* in *ful*	3.50	5.00
Per 100 *muthi* in *buta*	0.50	0.80

Note: *ful* and *buta* are designs used in different portions of the dress material.
100 *muthi* means 100 cards are used in the design i.e. 100 times movement of the shuttle.
Source: Fieldwork during April 2001.

Designing charges although mostly uniform throughout the weaving establishments (*Wm, M, My, Mcm*) in Sualkuchi, show some variations as well. For example, designing charges per hundred cards (equal to one hundred *muthi*) in case of *buta* varies from a low of forty paise in smaller manufactories to even sixty paise in bigger manufactories. This shows that designing charges are almost fifty per cent higher in bigger manufactories. They are in a position to compete with small manufactories even after paying higher designing charges. Here we find one of the major dynamics of the subsector, which is in relation to the functioning of bigger manufactories vis-à-vis smaller manufactories and master weaver system. The higher rate for designing charges together with greater amount of money advances paid by the bigger manufactories enable them to attract skilled weavers which results in product differentiation between the bigger and smaller manufactories. What it also suggests is that these manufactories are not training up the unskilled weaver. The entrants are trained up by the smaller manufacturers and master weavers who can pay relatively lower design charges and smaller amount of money advances. The bigger manufactories are paying higher wage rates because they are producing high value products, which they are in a position to market.

Therefore, quick designing is the crucial component around which the major dynamics of the subsector revolve. A look on price range of a few products reveals that differences in price of the same product which is due to differences in quality and quantity of designing result in product differentiation (Table 5.10):

Table 5.10: Price range for dress materials of silk

Name of dress material	Price range (in Rs.)
Brocket	1800 to 2500
Contrast	2200 to 3900
Side *pari*	1200 to 1600
All over *jora*	1200 to 3200
Dig bani coloured set	1800 to 3200

Source: Field work during April, 2001.

Difference in the maximum and minimum price of silk dress materials is fifty to cent per cent in most varieties (Table 5.10). It means that for the same kind of product there is enormous difference in the cost, which is explained by quality of weaving and designing combined with the amount of designing done in the cloth. Clearly, for weaving high value products skilled weavers are needed who are attracted towards the bigger manufactories once they offer higher amount of advances and designing charges.

The following case study is an illustration of how innovative designs survive and grow:

> There are about six to seven manufactories, which specialise in the weaving of Khasi garments with ethnic designs. The total number of looms would be more than fifty. The manufacturers are near to distant family relations. Here is about one of them.
>
> *Manufactory and the manufacturer:* The establishment has twelve fly shuttle looms with jacquard. Eight of the twelve looms are housed in a three-storied building and the remaining four looms are housed in a *Assam type* building located on other side of the narrow muddy road passing by the front of the establishment at a distance of less than hundred metres. The former RCC building is not a large building. Its ground floor is used as a residence.
>
> The proprietor has formal education up to matriculation known as Middle Vernacular (M.V.) at that time. He qualified M.V. in the year 1969. Thereafter, he took training in mechanical stream in Industrial Training Institute (I.T.I). He joined as a manager of a silk weaving co-operative society of hundred shareholders in Shillong, the then State capital of Assam. It was during his stay in Shillong that he developed friendly relations with *Khasi* people. He learnt about *Khasi* ethnic dress and designs through them. Later, in the year 1972, he moved to Guwahati when the capital of Assam shifted to Dispur. After the expiry of its president and secretary, the silk weaving society became defunct and he left his work from the society. But, in the meantime, around thirty years from now, he established his own weaving workshop. According to him, had he continued working in the silk weaving co-operative, his current salary including the increments would have been around rupees nine thousand. With that amount of salary, it would not have been possible for him to construct the building, which

he has been using as a residence cum workshop. He felt that the salary given by government was not enough. His family includes his wife, a son and two daughters, one of who is married. Father-in-law had a *Khasi* silk garment-weaving establishment since hundred years back.

Designs at the two ends (across the weft) are woven with the help of throw shuttle whereas designs along the two sides of the warp are woven with the help of jacquards. These jacquards used in weaving *Khasi* designs are not available in the market at present. These are special in the sense that only the manufacturers of such establishments know its technique of using through adjustment and repairing.

Weavers and helpers and their wages: There were ten weavers and four helpers working in the workshop including both buildings. These weaves were working since ten to fifteen years. It is difficult to find such weavers who are trained in this typical weaving of ethnic designs. The manufacturer had to train the weavers. However, none of them have left his workshop in the past. Wages are paid on weekly basis. It is according to piece-rate. The rate varies from rupees eighty to rupees one hundred and twenty per piece for *dhara* and *rendiastem* depending up on the designs. During the first part of October, 2000 the weavers were being paid at the rate of rupees ninety per piece. In a time span of two days, a weaver is in a position to weave three pieces of dress. Helpers are paid a fixed monthly wage, which varies from rupees three to six hundreds. In addition to the wages, tea, snacks and light refreshments including fruits are provided to the weavers and helpers. But, they have to arrange their meals and shelter by themselves. One of the helpers resides in the workshop building of the manufacturer.

Linkages with yarn suppliers and traders of silk cloth: Five-ply yarn (14/15 for weft, 17/18 or 18/19 for warp) used in weaving *Khasi* dress materials is purchased from local yarn *bhander* in Sualkuchi. Yarn is obtained on credit for a period of three months and the entire amount even up to one and a half lakhs is to be cleared exactly on the last day of the three months or the first day of the next three months period. Price of mulberry silk yarn was rupees one thousand five hundred and fifty per kilogram at that time. From one kilogram of yarn, three pieces of any one of the three types of dress materials can be woven.

Agents from Shillong come to the establishment and collect the ordered cloth pieces by paying cash. But, other establishments producing the same *Khasi* dress materials have to carry them to Shillong for its disposal. This is because of the differences in quality.

New products: Recently, the manufacturer has introduced *Khasi* ethnic designs into *mekhala* and *chader*. For such cloth, customers are ready to pay higher price. Hence, the future plan is to expand its production.

For marketing within the State, bigger manufactories do it themselves through own showrooms-cum-cloth stores. For marketing outside the State, they have accessibility to the marketing infrastructure provided by formal agencies in the form of *Purbasree* (showrooms) of North Eastern Handloom and Handicrafts Development Corporation *(NEHHDC),* emporia of Assam Government Marketing Corporation *(AGMC)* and distribution outlets of Assam Apex Weavers and Artisans Co-operative Federation Limited *(Artfed).*

Besides the actual weaving hired weavers take part in bleaching/degumming, warp winding and beaming. The wage weavers have to work free of wages i.e. they are not paid for taking part in these processes. These processes takes about a week. In these activities as well as in the

process of yarn drying after boiling the silk yarn with soda and soap, they involve themselves as improper completion of these processes could create difficulties for them later while weaving.

Hired Manager Weaver

Around 5 per cent of the manufactories are managed by hired managers. They worked initially as helpers, and then became skilled weavers and then managers. Monthly wage is paid to the hired managers, which varies from rupees two thousand five hundred to rupees four thousand per month. It does not include food and housing facilities/accommodation. Major functions of hired managers include looking after machinery, helping the weavers and helpers and taking care of the processes.

5.5. Summary

Yarn has to come to the silk industry from outside. Although there are two distinct channels of its supply, there is no significant difference in terms of prices or supply or quality. There is nothing much to differentiate among the channels with a limited availability of information on the industry structure. System of yarn advance against the security of cloth is limited in private sector in Sualkuchi and it is declining further although the industry is dependent on supply of yarn from far away places in South India. Sale of silk yarn on short duration credit is prevalent in the industry. Structure of the silk weaving industry consists of the private agents, silk weaving co-operative societies and government agencies. We have outlined six channels of production/distribution in the industry on the basis of differences in the degree of integration of functions– yarn procurement, weaving and retail sale. Different channels have their strengths. Channel 4 has better control over production as it is predominant in terms of number of manufactories but for sale it is entirely dependent on others. Channel 5 with integrated production and trade can supply according to the taste of consumers. It is the most dynamic channel of production. For marketing within the State, it has its own arrangement in the form of stores-cum-showrooms of silk cloth in different towns. It has to depend on the marketing infrastructure of the formal agencies for the wider national market. Innovation in designs is crucial for survival and growth. Channel 5 takes advantage of the best weavers and grows.

Chapter VI

SUMMARY AND CONCLUSIONS

The study is on the *Structure of the Silk Industry in Sualkuchi*, a historically known centre of silk weaving in Kamrup district of Assam in India at least since the seventeenth century. Such a study is interesting since it is an instance of vertically dis-integrated production system. We have adopted, in a limited way, the subsector approach developed by Boomgard et al (1992) to understand the dynamics of this industry.

To start with, our objective was to study the broad trends in size, growth and location of the silk industry of Assam with the help of secondary sources of information including Census of India. It is observed that the silk industry in Assam produces four varieties of silk cocoons and raw silk. These are *eri, muga*, mulberry and oak tasar silk. Oak tasar is a comparatively recent introduction in the State. Out of the remaining three types of silk produced in the State, the share of *eri* silk in the total silk cocoon and raw silk production is highest, followed by *muga* and mulberry silk. *Eri* spun silk production was slightly more than 80 per cent of the total raw silk produced in the State while the share of mulberry silk was only around 4 per cent during the period 1988 to 1996-97. There was a sudden decline in all the three types of silk cocoon and raw silk production during the year 1996-97. Although production of silk cocoons takes place both in government farms and homestead land in private sector, its share is not only very small in the government sector but has also declined further over the period. In terms of consumption of silk yarn, data show that the consumption of mulberry silk yarn is highest among all varieties of silk yarn, which are consumed in Assam. However, production of mulberry raw silk was less than 5 per cent of its consumption in 1998-99, which means that there is a wide gap between the production and consumption of mulberry silk yarn in the State. In the case of *eri* spun silk, there is a surplus production. Location of the industry in terms of area under cultivation shows that during the period 1991 to 1995, North Lakhimpur, Karbi Anglong and Sibsagar in case of mulberry silk, Kamrup and Karbi Anglong in case of *eri* silk, and Goalpara and North Lakhimpur in case of *muga* silk were the most important districts.

Analysis of Census data on workers showed that in all processes of the silk industry, there is a growth in employment since 1931 to 1991. In the initial processes of silkworm rearing, silk

cocoon and raw silk production, there is an increase in the proportion of main workers. Among all other processes of the silk industry, it is silk spinning and weaving other than in mills where the greater proportion of all workers is engaged and this process is concentrated in Kamrup district. Spinning and weaving of silk in handlooms is predominantly a household industry. Kamrup district does not produce mulberry silk, however, weaving sector is concentrated in Kamrup district. In the district, Sualkuchi is the most important commercial silk weaving cluster. Hence, our next objective was to study growth of the industry in Sualkuchi in terms of number of workers, looms and weaving establishments.

Available secondary information on the silk industry in Sualkuchi indicates that the industry is growing and the growth appears to be comparatively higher during the previous two decades. A tendency towards the growth of bigger manufactories is evident which reveals the continuing transformation from household industry to non-household industry. Transformation from household to non-household industry is also substantiated by the growing share of non-household industry in the State from 11.8 per cent in 1961 to 28.3 per cent in 1991. The period since the year 1961 is also marked by the growth of many weaving establishments in Sualkuchi having more than twenty looms, in one instance it was as high as sixty looms in the year 1986.

Transformation of the silk weaving industry is more clearly manifested in the growing dependence of master weavers and manufacturers on hired weavers and hired helpers. According to Das (2000), at present, around fifteen thousand wage paid weavers are engaged in reeling and weaving of *muga* and weaving of mulberry silk fabrics. Eighty per cent of the weavers in the town are immigrant female weavers greater proportion of whom belong to *Bodo* community in Assam. There are around three thousand master weavers and manufacturers in the town. This shows that a class of wage-earning weavers has emerged in Sualkuchi. A production system characterised by the integration of weaving and sale of silk cloth is also evident during the 1990s.

While the industry produces all the varieties (mulberry, *muga* and tasar) of silk fabric, mulberry silk weaving is most predominant here, although Sualkuchi does not produce mulberry silk yarn. Out of 12500 commercial looms in Sualkuchi, more than 80 per cent weave mulberry silk. The large gap between the consumption and production of mulberry silk yarn in Assam informed that Sualkuchi has silk yarn supply arrangements with important

mulberry silk yarn production centres outside the State. Therefore, it was interesting to study structure of the industry in terms of different production systems and understand its dominant characteristics in the use of family labour, hired workers and nature of its organisation.

Production systems in Sualkuchi, at present, are similar to the lower forms of production that evolved elsewhere in India during the colonial period and in England before the evolution of the factory system. In the silk industry, the production system is characterised by the developing system of manufacture in the form of manufactories/workshops. This is evident from the growth in the non-household sector, specialisation of workers in various technical processes of production and existence of manufactories working with factory discipline with respect to hours of work and vacations. There is a clear division of management function and weaving. Employment of salaried managers in bigger manufactories is a further development in the division of functions. Thus, as observed in the literature, coexistence of various forms of production, which is a feature of the lower forms, is evident also in Sualkuchi. Independent cottage system, domestic system of master weavers, certain forms of putting out or dispersed manufactory system, manufactories employing hired weavers and helpers and also hired managers in some instances are the important production systems in the industry. However, a distinguishing characteristic of all these production systems in Sualkuchi is that the independent cottage weavers, the master weavers, the manufactory owners or manufacturers and the dealers have the traditional technical knowledge of the production process of silk cloth.

Yarn has to come to the silk industry from outside. Although there are two distinct channels of its supply, there is no significant difference in terms of prices or supply or quality. There is nothing much to differentiate among the channels with a limited availability of information on the industry structure. System of yarn advance against the security of cloth is limited in private sector in Sualkuchi and it is declining further although the industry is dependent on supply of yarn from far away places in South India. Sale of silk yarn on short duration credit is prevalent in the industry.

A system of money advances is widely prevalent in the informal wage contract system between the manufacturers and hired weavers and also between the master weavers and hired weavers. The amount of advances varies between male and female weavers. Payment of wages to hired weavers is made on weekly interval of time whereas, in case of the hired

helpers, it is made in the form of a monthly stipend with accommodation and food. In the co-operative form of production, the system of advancing yarn is predominant. A process of gradual skill formation and an upward movement along the trajectory of acquisition of ownership of looms and weaving establishments is visible in the weaving industry. The problem of weavers' leaving and joining another weaving establishment appears to have become common in Sualkuchi. It has compounded because of scarcity of weavers in relation to the number of looms, formation of a class of wage weavers who have migrated from nearby districts to Sualkuchi and the resulting increase in their bargaining power as the industry in Sualkuchi is dependent predominantly on their productive power. Variation in designing charges is another reason for hired weavers' shifting from one workplace to another.

Structure of the silk weaving industry consists of the private agents, silk weaving co-operative societies and government agencies. We have outlined six channels of production/distribution in the industry on the basis of differences in the degree of integration of functions – yarn procurement, weaving and retail sale. Different channels have their strengths. Channel 4, a dis-integrated system of production, has better control over production as it is predominant in terms of number of manufactories but for sale it is entirely dependent on dealers of silk cloth who have their own showrooms in towns outside Sualkuchi and wholesale cloth stores in Sualkuchi.

Channel 5 with integrated production and trade can supply according to the taste of consumers. It is the most dynamic channel of production, which has experienced growth during the last decade. For marketing of cloth within the State, it has its own arrangement in the form of stores-cum-showrooms of silk cloth. It has to depend on the marketing infrastructure of the formal agencies for the wider national market. At the same time, this channel has silk cloth supply relations with small producers, which indicates that producers rely on suppliers instead of increasing own production further. It means that there are constraints in further growth of the manufactories characterised with integrated production of mulberry silk cloth and its retail sale. Channel 5 is, however, able to take advantage of the best weavers and grows. Designing charges are almost fifty per cent higher in big manufactories, which constitute this channel of production and distribution. These big manufactories are in a position to compete with small manufactories even after paying higher designing charges. Here, we found one of the major dynamics of the subsector, which is in relation to the functioning of bigger manufactories characterised with integrated functions of

weaving and retail sale vis-a-vis smaller manufactories and master weavers in the channels of production 2, 3 and 4. The higher rate for designing charges together with greater amount of money advances paid by the bigger manufactories enables them to attract skilled weavers. It also suggests that these manufactories are not training up the unskilled weavers. The small manufacturers and master weavers train-up the entrants although they can pay relatively lower designing charges and smaller amount of money advances in comparison to the bigger manufactories. The bigger manufactories are in a position to pay higher wage rates because they produce high value products, which they are in a position to market. For the same kind of product, variation in the price is wide. Differences in the maximum and minimum retail price for the same variety of dress material is fifty to even cent per cent. It means that for the same kind of product there is enormous difference in the cost, which is explained by the quality of weaving and designing combined with the level of designing done in a piece of cloth. Clearly, for weaving high value products, skilled weavers are needed. Skilled weavers are attracted towards the bigger manufactories in channel 5 once they are offered higher amount of money advances and designing charges. This process has also resulted in product differentiation between the bigger and smaller manufactories. Therefore, the major dynamics of the subsector revolve around quick designing. Innovation in designs is crucial for survival and growth.

REFERENCES

Anderson, D. (1982): Small Industry in Developing Countries: A Discussion of Issues, *World Development*, 10, (11).

Baishya, P. (1972): Silk Industry in Assam Town, Its Problems and Prospects, *Yojana*, August 1.

Baishya, P. (1989): *Small and Cottage Industries: A study in Assam*, Manas Publications, Delhi.

Baishya, P. (1998): The Silk Industry of Sualkuchi: Its History and Technology, *Singkhap*, Assam Sambai Resham Pratisthan Limited, Guwahati.

Baishya, P. (2000): Sualkuchir Artha Samajik Drishya, Eti Dristipat, *Smaranika*, Kamrup Jila Sanbadik Santha.

Boomgard, James J., Stephen P. Davies, Steven J. Haggblade and Donald C. Mead (1992): A Subsector Approach to Small Enterprise Promotion and Research, *World Development*, 20, (2).

Census of India, 1931: *Occupation or Means of Livelihood*, Part I -- Provincial Summary, Volume III, Assam, Part II – Tables, Office of the Registrar General, New Delhi.

Census of India, Paper No.5, 1956: *Means of Livelihood and Industries Tables*, Assam – 1941 census: On Y sample, Office of the Registrar General, New Delhi.

Census of India, 1961: *General Economic Tables,* Volume I, India, Part II – B (iii), Office of the Registrar General, New Delhi.

Census of India, 1961: *Report on Industrial Establishments,* Volume I, India, Part IV-A (ii), Office of the Registrar General, New Delhi.

Census of India, 1961, Part C: *Household Industries in Assam,*. Volume III, Assam, Part 1A – General Report, Office of the Registrar General, New Delhi.

Census of India, 1961: Vol. III, Assam, Part 1 A – *General Report.*

Census of India, 1961: *Selected Handicrafts of Assam* (1966). Volume III, Assam, Part VII-A, Office of the Registrar General, New Delhi.

Census of India, 1971: Table B-IV Part A – *Industrial Classification of Persons at Work Other than Cultivation as Main Activity by Sex and Divisions, major Groups and Minor Groups.* Series 1, Part II-B (ii), General Economic Tables, Office of the Registrar General, New Delhi.

Census of India, 1991: Table B 14 (F): *Industrial classification of main workers and marginal workers other than cultivators and agricultural labourers by sex and by section, division and group,* Series 1, India, Part III B – B Series, Economic Tables, Volume 5, Office of the Registrar General, New Delhi.

Census of India, 1991: *Economic Tables*, Volume - 3, Tables B-15 (i), Series 4 – Assam, part III B – B Series, Office of the Registrar General, New Delhi.

Central Silk Board (1998-99): *Present Status of Sericulture in North Eastern Region*, Office of the Director (North East), Regional Development Office, Guwahati.

Chowdhury, S.N. (1982): *Muga Silk Industry*, Directorate of Sericulture, Government of Assam.

Chowhury, S.N. (1992): *Silk and Sericulture*, Directorate of Sericulture, Assam.

Das, B.R. and Sarat Chandra Mahanta (eds) (1997): *Singkhap*, Assam Samabai Resham Pratisthan Limited, Guwahati, 1998.

Das, N.C. (1986): *Development of Handloom Industry: Organization, production and* Marketing, Deep and Deep Publications, New Delhi.

Directorate of Sericulture (1993): *Hand Book on Assam Sericulture at a Glance,* Guwahati.

Directorate of Sericulture (1995): *Hand Book on Assam Sericulture at a Glance,* Guwahati.

Das, K. (2000): Labor Standards, Regulation Theory and Regional Response: A Study of Three Towns, *Indian Journal of Labour Economics,* 43, (4).

Government of India (1942*): Report of the Fact-Finding Committee (Handlooms and Mills)*, Manager of Publications, Delhi.

Grosh, B. and Gloria Somolekae (1996): Mighty Oaks from Little Acorns: Can Microenterprise Serve as the Seedbed of Industrialization? *World Development*, 24, (12).

Haynes, D. (1996): The Logic of the Artisan Firm in a Capitalist Economy: Handloom Weavers and Technological Change in Western India, 1880-1947, in Stein (Burton) and Sanjay Subrahmanyam (ed), *Institutions and Economic Change in South Asia*, Oxford University Press, Delhi.

Hoselitz, B.F. (1959): Small Industry in Underdeveloped Countries, *Journal of Economic History*, 19, (4).

Kalita (1998): Sualkuchir Tant Silpar Itihas in Das, B.R. and Sarat Chandra Mahanta (ed) *Singkhap,* Assam Samabai Resham Pratisthan Ltd., Guwahati.

Kalita, A.C. (1998): Sualkuchi aru iyat samabaiar kramabikas in Das, B.R. and Sarat Chandra Mahanta (ed) *Singkhap,* Assam Samabai Resham Pratisthan Limited, Guwahati.

Kashyap, S.P. (1988): Growth of Small-size Enterprises in India: Its Nature and Content, *World Development*, 16, (6).

Kundu, A. (1980): Pattern of Organization of the Handloom Industry in West Bengal: Part One, *Social Scientist,* 9, (1)

Kundu, A. (1980): Pattern of Organization of the Handloom Industry in West Bengal: Part Two, *Social Scientist,* 9, (1).

Levkovsky, A.I. (1966): *Capitalism in India: Basic Trends in its Development,* Peoples Publishing House, Delhi.

Borgohain-Sarma, M and Monica Chaudhuri (nee Mukhopadhyay) (1998): Reeling Recipe, *Indian Silk,* Central Silk Board, Bangalore.

Mantoux, P. (1961): *The Industrial Revolution in the Eighteenth Century: An outline of the beginnings of the modern factory system in England*, Jonathan Cape Ltd., London.

Mead, Donald C. (1984): Of Contracts and Subcontracts: Small Firms in Vertically Dis-integrated Production/Distribution Systems in LDCs, *World Development*, 12, (11/12).

Mead, D.C. and Carl Liedholm (1998): The Dynamics of Micro and Small Enterprises in Developing Countries, *World Development*, 26, (1).

Mishra, S.N. (1999): *Silk Map of North East India: Estimated Information*, Demonstration Cum Technical Service Centre, CSTRI, Central Silk Board, Sualkuchi.

Nabli, Mustafa, K. and Jeffrey B. Nugent (1989): The New Institutional Economics and Its Applicability to Development, *World Development,* 17, (9).

Nagarajan, G., Richard L. Meyer (1995): Incorporating Finance into a Modified Subsector Framework: The Fertilizer Subsector in the Gambia, *World Development*, 23, (7).

North Eastern Institute of Bank Management (2000): *District Potential Survey of Rural Non Farm Sector in Kamrup District*, Guwahati.

Rakowski, Cathy A. (1994): Convergence and Divergence in the Informal Sector Debate: A Focus on Latin America, 1984-92, *World Development,* 22, (4).

Richardson, G.B. (1972): The Organisation of Industry, *The Economic Journal, 82, (327).*

Roy, T. (1993): *Artisans and Industrialisation: Indian Weaving in the Twentieth Century,* Oxford University Press, Delhi.

Schmitz, H. (1982): Growth Constraints of Small–scale Manufacturing in Developing Countries: A Critical Review, *World Development*, 10 (6).

Sharma, Vijay Prakash and D. Chakravorty (1999): Challenges for Silk, *The Indian Textile Journal.*

Staley, E and Richard Morse (1965): *Modern Small Industry for Developing Countries*, McGraw Hill Company and Kogakusha Company Limited, Tokyo.

Appendix IIi

The Process of *Muga* Reeling

(as published in the Indian Silk, January, 1998)

"*Muga* cocoons are reeled by hand through the use of simple tools known as *Bhir* or *Bhowri*. Earlier several simple charkas like Trivedi machine were developed but the users of Sualkuchi have accepted none of them. *Bhir* is a simple tool. It consists of an open deep frying pan made of iron to serve as a reeling basin and a wooden stand with a slim cylindrical rod attached to a large wooden or iron wheel at one end. Two persons can reel 500 *muga* cocoons in a day on this tool and will earn about Rs.25. Prior to reeling, the cocoons are soaked in an iron deep frying pan containing alkaline solution. The cooking recipe and technology resorted to by the reelers vary from unit to unit.

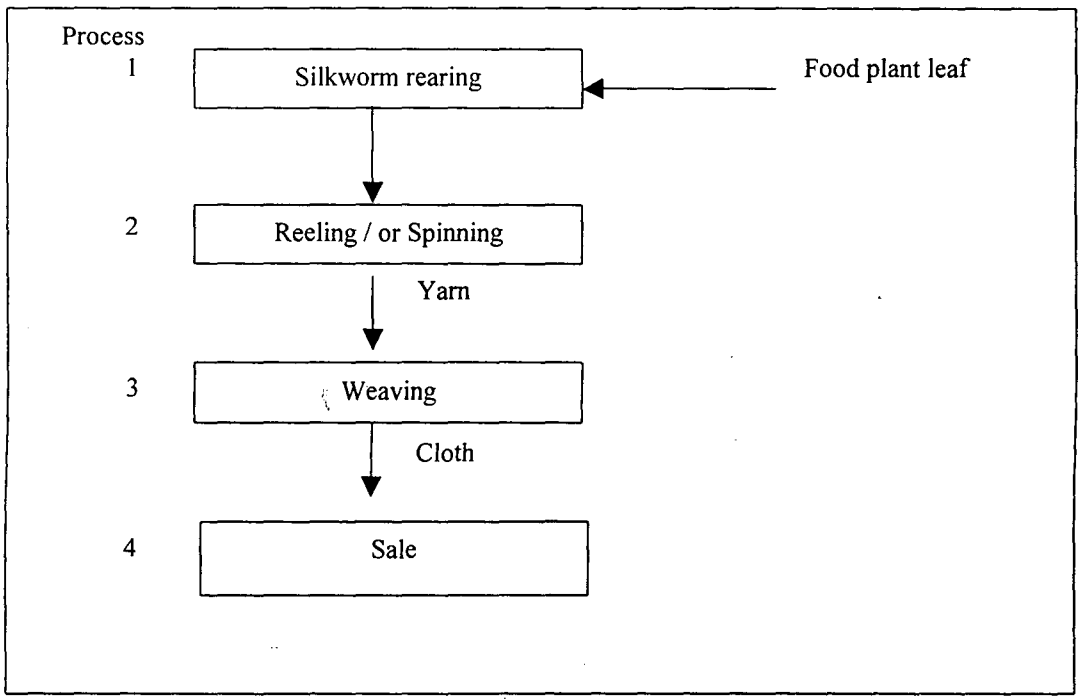
Approximately 40 gm of Na_2CO_3 is mixed in six to seven litres of water where 500 cocoons are cooked for 15 to 20 minutes till the cocoons become soft and slippery. The cocoons are deflossed one by one manually, till a single filament is traced. The deflossed cocoons are placed floating in the reeling water basin, which is kept over an open fire to keep the alkaline solution in the basin warm. The filaments from 5 or 6 cocoons are passed over to left arm of the other person who gives the twist by hand and taken through a loop on a wire or over a slender smooth stick fitted on top of the reeling basin. It is again picked by the right hand and rolled over the left forearm of the reeler to impart two to three twists per inch. Then the filament is wound on the bamboo reel fitted to the cylindrical rod of the *Bhir*. The reeler and helper sit on the ground facing each other. The helper controls the uniformity and the number of filaments in the yarn. For warp, filaments from 7-8 cocoons and for weft, filaments from 5 or 6 cocoons are used. The reeled yarn is dipped in water and re-reeled into wooden frame of 1.28 meters size, forming hanks of about 40 to 50 grams. These hanks are smaller than in size and lesser in weight than that of mulberry hanks. The yarn in the hank is without any diamond formation, as the re-reeling device does not have the traverse system. There is a need to standardise the hank size and the yarn should be made free from Na_2CO_3."

Preparatory processes and weaving are similar to that of mulberry silk.

Appendix IIIi

Production Processes of Silk Industry carried out in Sualkuchi

An outline of the production process in silk industry is drawn below.



Assam's silk weaving industry is concentrated in a small town named Sualkuchi about 33 kms to the west of Gauhati, the State capital of Assam, on the northern bank of river Brahmaputra (Baishya, 1972). It comprises *Sualkuchi village, Sualkuchi Parbat, Bamun Sualkuchi, Kaibartapara, Keutpara, Sonaripara, Napara, Bhatipara and Srihati.*

Mulberry silk: Only process 3 is carried out in Sualkuchi.

Mulberry silk yarn is brought from Mysore and Bangalore and the only fabric is woven in Sualkuchi and sold in the name of "Assam Silk" (Baishya, 1972 and 1998). Process 3 includes hanking, dehanking, boiling for degumming, dyeing, preparatory processes and weaving. Preparatory processes are explained below.

Preparatory processes carried out in Sualkuchi

Census of India 1961, Volume III, Assam, Part VII A, *Selected Handicrafts of Assam,* described the preparatory processes, which is written below as it was published. During the fieldwork, the preparatory processes explained below were corrected and verified by

Technological Service cum Training and Demonstration Centre, Central Silk Board Sualkuchi. The technical preparatory processes have hardly undergone any remarkable change from 1961.

"The operations involved in the preparation of the warps for most of the silk fabrics comprise of bobbin winding, warping, beaming and looming. The first process commences with the preparation of warper's bobbin. It is generally done on traditional charkas.

For silk weaving at Sualkuchi, it is seen that *drum warping* is very popular. It is perhaps better in any circumstances and, moreover, a time saving device too. It can be done indoors and in small space. A hook creel is used for placing a good number of bobbins, say 80 to 120, and warping is carried on with many threads at a time. The drum is a big reel of 1½ to 5 yards in circumference, which is made to revolve horizontally, fixed in a suitable framework. The bobbins are placed in a hook-creel by the side of the drum. The ends are taken from the bobbins and drawn separately through eyes of a row of needles arranged in a "heck". This arrangement helps in forming lease. The warp is to wound on the horizontal drum spirally and the heck slides up and down. When the warp is cut off and unwound, it is brought to the form of a ball for next operation.

Then follows the operation of *beaming*. The act of spreading the warp yarns and winding evenly and tightly upon a weaver's beam is called *beaming*. The warp ends are passed through a reed and the sheet of yarns is wound in tension upon them.

Drafting, denting, tying-up of *healds*, etc., comes under *looming* or *getting*.

Drafting: Drawing the warp ends through the healds in a pre-destined plan according to the nature of the weave is called drafting. There are various kinds of drafting: straight, pointed and mixed. Four healds in a set are numbered 1,2,3,4 from the weaver's side. For plain weaving the warp threads are to be drawn in the order 1,3,2,4. That is the first thread through an eye of the first heald, the second thread through that of the third heald, the third thread through that of the second heald and the fourth thread through an eye of the fourth heald.

Denting: The process of passing the warp threads through the opening of the reed (dent) by two in general and more or less, according to the character of a pattern is known as denting.

Tie up and shedding: The healds are generally tied up round a top pulley or roller, so that when a treadle is pressed, the connected shaft is pulled down, thereby the tied-up shaft is pulled up.

Looming of the warp being accomplished, preliminaries to actual weaving should be taken in hand. As one of the treadles is depressed by foot, the healds connected to it go down, while those connected with the other treadles go up, forming an opening in the warp known as shedding. The shuttle moves through this shed and weaves.

The weaving of silk at Sualkuchi is done by fly-shuttle looms. Prior to introduction of fly-shuttle looms, the local weavers used throw shuttle looms and they also did the designing with traditional tools. They now use dobby machines, which are attached with the fly-shuttle looms, for the purpose of making designs. It is rather encouraging to notice that a complete switch over to fly shuttle looms has taken place replacing the old throw shuttle looms, which is not economic for commercial production."

***Muga* silk:** Processes 2 and 3 takes place in Sualkuchi.

Process of silk worm rearing and cocoon production (process 1) takes place only *muga* farm of the department of sericulture located in Sualkuchi, which was established in the year1970. It has an area of 25.85 hectares out of which 22.9 hectares are under plantation. There are 2230 number of trees of food plants out of which 1910 are Soalu trees and the remaining 320 are Som trees. During 1992-93, 27 thousand seed cocoons are produced and 36 thousand reeling cocoons were produced (Handbook of Assam Sericulture at a Glance, 1995).

Excepting the Village Grazing Reserves, rearing of silkworm for production of *muga* silk cocoons is not practised at Sualkuchi. *Muga* silk cocoons are brought from other places. However, reeling of *muga* cocoons is carried out at Sualkuchi. This is also evident from the following:

"*Muga*, described by Kautilya as *Dakula* "as red as the rays of the sun" is produced by the cultivators of Sibsagar, Lakhimpur and Goalpara districts as a subsidiary source of income. The weavers of Sualkuchi bring *muga* silk cocoons from there, reel them in a traditional wooden wheel (*Bhouri*) by lukewarm heating process in a basin and weave the golden thread by fly shuttle" (Baishya, 1972). According to Baishya (1998), in Sualkuchi, *muga* cocoons are

supplied from upper Assam, Boko area of South Kamrup and Garo hills of Meghalaya. The cocoons are reeled here and in neighbouring villages and traditional fabric are woven in the fly shuttle looms out of the yarn.

"The *muga* cocoons, which are golden brown in colour are not available in Sualkuchi or its vicinity. They are procured form the rearers in the remote villages of the upper part of Assam. ..... The reeling is normally done by the females in the work shed of the weaving units or in the houses of reelers of Sualkuchi and surrounding villages. Apart from Sualkuchi, places like Palasbari and Bijoynagar also contribute to the *muga* silk business. The good cocoons are reeled into yarn for fabric" (Mamta Borgohain-Sarma and Monica Choudhury nee Mukhopadhyay, 1998).

There is a *muga* reeling unit of the Central Silk Board in Sualkuchi. It was established in the year 1984. It has 10 basins (Handbook on Assam Sericulture at a Glance, 1995).

Tasar silk: Like mulberry silk, processes 3 and 4 are only carried out at Sualkuchi. "Of late, blended fabrics have come into the market. The *muga* weaving units are using tasar yarn along with *muga* to reduce the cost of production." (Mamta Borgohain-Sarma and Monica Chaudhuri nee Mukhopdhayay, 1998)

***Eri* silk:** Only process 4 is carried out at Sualkuchi. *Eri* silk cloth is woven in villages of South Kamrup especially Rampur, Palasbari, Chaygaon area.

Appendix IVi

Number of Agents Involved in the Production Systems in Sualkuchi Silk Weaving Industry

S. No.	Category of agents / participants	Approximate number*
2a.	Pure yarn and accessory dealer (*Dy*)	5
2b.	Yarn & accessory dealer + Manufactory (*MDy*)	15
2c.	Yarn & accessory dealer + Manufactory + Cloth dealer (*MDyc*)	5
2d.	Yarn & accessory dealer + Manufactory + Cloth dealer involved in putting out system (*Mywc*)	5
3a.	Co-operatives and public sector enterprises dealing in silk yarn, accessory (*SWcop, Artfed, AGMC*)	4
4a.	Showrooms of *A*rtfed	56-57 in India (4 outside Assam)
4b.	Emporia of Assam Government Marketing Corporation (*AGMC*)	17 (within Assam) + 4 (2 in Calcutta, 1 each in Patna, Delhi, Bombay)
4c.	Showrooms (Purbasree) of *NEHHDC*	6 (Calcutta, Delhi, Bangalore, Madras, Guwahati, Shillong)
4d.	Assam Samabai Resham Pratisthan Limited	
	Retail outlets	5
	Factory	1
4e.	Assam Co-operative Silk House Limited	
	Cloth stores cum showrooms	10 (1 in Shillong, 5 in Guwahati: Dispur, Ganeshguri, Fancy bazar, Panbazar)
	Weavers	600-700 (cotton + 200 silk)
	Share holders	265
	Purchase of *pat*	3000 kg valued at Rs 40 lakhs
4f.	Pragjyoti Industrial Weaving Co-operative Society Limited.	
	Sale depots	2 (Panbazar and Fancybazar)
	Number of working looms owned by weavers	2200
	Employees	6 (2 managers, 3 salesmen, 1 secretary)
	Member weavers of Pragjyoti Industrial Weaving Co-operative Society Limited.	240 (general members)
	Total weavers	2400 (1400 female; 700 sc)
7a.	Weaving establishments based purely on family workers (*Wi* + Dependent cottage weavers)	300 to 350
7b	Weaving establishments engaging both family and hired weavers and helpers (*Wm*)	600 to 700
7c.	Weaving establishments employing hired weavers and helpers, family management (*M*)	1950 to 2275
7d.	Weaving establishments employing hired weavers and helpers, and hired managers (*M*)	150 to 175
9a.	Hired weavers with own looms (*Wh*)	750
9b.	Hired weavers without own looms	14250

Note: Not based on any survey but arrived at through informal discussion with different participants in the industry as well as certain articles and publications.

Source: Based on informal discussion with Subsector participants.

Appendix Vi

Production Arrangements for Carrying-out Processes of Mulberry Silk Weaving in Manufactories of the Sualkuchi Weaving Industry

Degumming: Degumming is the process of removing the gummy substance known as crecithin from the yarn. For degumming mulberry silk yarn, it is boiled with soda and soap for an hour. In the process of degumming, as a result of the removal of the gummy substance - crecithin, a kilogram of mulberry silk yarn loses weight to the extent of around 250 to 300 gm. Following is an approximate quantity of materials used in boiling:

Soda – 200 to 250 gm per kg of yarn

Soap - 250 gm per kg of yarn

Dyeing of Yarn Used in Warp: Mulberry silk yarn that is used in the warp is dyed at home. Whereas, for weaving the weft dyeing is not needed, as dyed weft yarn is available in the market. As coloured warp yarn is not available in sufficient diversity hence home dyeing of yarn becomes necessary.

Price of per kilogram dyes/colour varies from Rs.700 to Rs.1400. For dyeing 3 kilograms of yarn 300 grams of colour is used.

Yarn dealers have the knowledge on dyes and the required quantity of dyes. Master weavers and manufacturers too know the technique of yarn dyeing. However, to those producers who lack knowledge on dyes and who do not know about the quantity of dyes required for a definite quantity of yarn, the yarn dealers and manufacturers suggests the appropriate quantity of dyes required.

Earlier, when coloured yarn was not at all available in the market, producers used to dye mulberry silk yarn for both the warp and weft themselves. Availability of coloured yarn in the market is stated to be one of the most important reasons for the dispersion of silk weaving outside Sualkuchi. Excepting the master weavers and manufacturers of Sualkuchi, many did not know the art of dyeing. Hence, the earlier industry was localised in Sualkuchi.

***Bobbin and Swift Winding*:** It is done by workers in Sualkuchi and Bangsar on a piece rate in their own home. The piece rate for bobbin and swift winding is Rs.50 per 250 gm yarn or

Rs.200 per kg for coloured yarn (e.g. black colour). In case of other light colours such as white and yellow, the rate varies between Rs.180 to Rs.190 per kilogram of yarn, which is lower than the bobbin and swift winding charges for black or other dark coloured yarn. The winding and swifting charges for 750 gm yarn varies from Rs.150 to Rs.165. For black coloured yarn labour charges are higher. During bobbin and swift winding of a kilogram of yarn, around 100 to 150 gm yarn is lost.

Drum Warping: In Sualkuchi, drum warping is the most predominant method of warping. Two workers are required to complete warping. One is called the warper and the other is called bobbin watcher. Drums are available against a service charge of Rs.20 per day. Similarly, hired warpers and bobbin watchers are also available in Sualkuchi. Following is the wage rate for warpers and bobbin watchers:

		Wage rate
Drum warper	=	Rs. 100 per day
Bobbin watcher	=	Rs.50 to Rs.60 per day

Drafting and Denting: Drafting charge is Rs.180. All other expenses in the process of drafting are incurred by the drafters.

Designing including Graphing, Card cutting and Lacing: Graphing and designing charges vary between Rs.2000 to Rs.5000. It includes the following components:

- Graphing and drawing charges is Rs.100/- to Rs.150/- for simple designs whereas for complex designs such charges are Rs.400/- to Rs.500/-.
- Designer's charge varies from Rs.200/- to Rs.1000/-.
- Lacing and punching are done by hired workers on piece rates.
- Lacing charge is Rs.10 per 100 cards.
- The piece rate for card cutting/punching is Rs.30 to Rs.40 per 100 cards. The cost of 100 cards is Rs.35.

The tools used for designing are Dobby and jacquards. These are attached to ordinary fly shuttle looms with wooden frame. In most cases, one dobby is attached to one loom as stitched-bordered cloth is predominantly produced in Sualkuchi. However, wherever continuous or band bordered *sarees* or *chaders* or *Khasi* dress is produced two jacquards /

dobby are used. One of the two jacquards is engaged in designing side borders while the other is engaged in designing the rest of fabric simultaneously.

Appendix Vii

Weaving and Designing Charges Paid by Pragjyoti Industrial Weaving Co-operative Society Limited, Sualkuchi to its Weaver Members

The following information on the weaving charges pertains to an earlier period when the society had production arrangements with its member weavers. At present, the society is involved only in marketing of silk cloth because of lack of working capital.

***Weaving Charges*:** Weaving charges are paid to the weavers on delivery of cloth. It has two components – designing charges and weaving charges for the plain component of designed cloth. For plain cloth, the design component is not there and hence designing charges are not paid. Desgning charges for *muga* silk are also same as mulberry silk but for weaving plain cloth, weaving charges are different from mulberry silk. Following is the weaving charges for mulberry silk cloth:

For designed cloth -

- Design charges per hundred card: Rs.3.00 for *ful* and 60 to 75 paise for *buta.*
- Weaving charges per piece -

  Rs.25 to Rs.30 for *chader.*

  Rs.60 for *saree.*

  Rs.20 for *mekhala.*

For plain cloth –

Rs.170 for weaving 10 metre *thaan.*

Rs.200 for weaving 11 metre *thaan.*

***Warping Charges or Preparatory Charges*:** It is paid to master weavers / drum warpers who are specialised in warping. Around 20 master weavers / drum warpers are members of the society. If the weavers do the warping themselves, warping charges are paid to the weavers. For warping 25 *thaan* (250 metre with 32 inch breadth for *mekhala*), preparatory charges vary between Rs.90 to Rs.140. And the warping charges for 22 *thaan* (42 inch breadth for *chader*) is Rs.150. Warping charges are same for both designed and plane cloth. Warping charges for *muga* silk cloth is also similar.

Appendix Viii

Dealers of Yarn, Manufactory with Integrated Functions of Weaving, Yarn Procurement and its Retail Sale and Dealers of both Yarn and Cloth with Integrated Weaving and Retail Sale

S. No.	Yarn/cloth dealer/ manufactory	Year of establishment of sale outlet	Number of own looms	Miscellaneous information
1.	Yarn dealer	-	2 mulberry silk looms	Mahesh Juria from Guwahati supplies yarn. Cloth is supplied to cloth stores against monthly (credit) as well as instant (cash) payment. Lower price is received when payment is on cash.
2.	Dealer of both yarn and cloth (Karunamoi Silkaloi)	1998	8 *muga* silk looms	Shivaji brand of mulberry silk yarn is obtained through agent in Guwahati. Nurulai, Dipak and Batwala brands are obtained directly from Bangalore. 10 to 15 regular customers purchase yarn both on cash and credit. Besides these there are irregular customers also. These customers are from Ramdia, Bangsar, Bathan, Lah, Nalbari and Kakaya. Margin on yarn is around 1 per cent. Also purchase cloth form other producers. Cloth (own production and purchase) is supplied to cloth dealers having retail outlets outside Sualkuchi.
3.	Purely yarn dealer	1994	Nil	Yarn is supplied from Bangalore. There are around 100 customers who purchase it on credit as well as cash. No cloth purchase.
4.	Dealer of yarn as well as cloth (KRB Store)	1985	5 *muga* silk looms	Render, Delux and Batwala companies supply yarn directly from Bangalore against instant (cash) payment. Shivaji *pat* is supplied by agents in Guwahati on a 15 days credit period. There are 10 to 12 regular customers who purchase yarn on cash.
5.	Yarn dealer (Bharati Silk Centre)	1999	4 looms	Shivaji *pat* is supplied by Mahesh Juria of Guwahati on a one week credit duration. 10 to 12 regular customers purchase silk yarn on cash and credit. Repayment of credit is made on weekly and monthly intervals. Cloth produced in own looms is sold to customers who come to the workshop.
6.	Yarn dealer	1999	10 looms	Not engaged in purchase of cloth.
7.	Yarn dealer (Baishya Silk Enterprise)	1994	Nil	Batwala, Render and Mahalaxmi brands of mulberry silk yarn are supplied directly from Bangalore. Around 20 to 25 regular customers purchase yarn on cash and credit (for a week duration).
8.	Production centre of Shri Bansaram Baishya	-	-	The production centre has a collection and distribution counter. It was established with the help of a Central Bank loan. Yarn is advanced to 35 weavers who work with their family members. Cloth is taken back against payment of wage.
9.	Yarn dealer (J. K. Silk centre)	1998	Nil	Yarn, which is supplied from Bangalore and Mysore, is sold predominantly on credit.