

Chapter-V

Structure of the Industries

In making an analytical study of the internal structure of the industries of North Bengal, it is necessary to emphasise here that the problems that are confronted by the cottage and small-scale industries are closely interlinked with each other. Among the aspects that are discussed here special reference is also made to particular characteristics of the industries namely the location, the nature of investment, the number of employment, the volume of production and market.

Definitions. Before proceeding further it is desirable to clarify a ~~XXXXXX~~ few important terms and that have often been used in this discussion.

A : I. Productive Capital.

It is generally termed as the total capital resources available at the beginning of any unit of production. Thus, it includes (i) the fixed capital, in the form of land and building, machinery and tools, transport equipments and other fittings, and (ii) the working capital or floating assets which include stocks of raw materials, finished products in stock, cash balance at hand or in the bank, credit due to the unit and the like.

Methods of Enquiry.

To determine the values of the fixed assets or the block component of the productive capital, the following considerations are necessary :

- (a) Initial cost of land at the time of purchase;
- (b) Present book value of those assets.

Obviously, the choice of any one of them for determining the values of fixed assets depends very much on the feasibility of collecting the requisite data. The difficulties faced in obtaining the relevant data, with any measure of certainty, from the type of industries that are under study are as follows :

- (a) In the case of an organised unit, it is possible to obtain these data from their records and books of accounts;
- (b) But, due to the general absence of accounting habits it is difficult to \forall obtain requisite data for the fixed assets so far as the unorganised units are concerned.

(1) Land and building.

Generally, the value of land and building forms an integral part of the fixed capital assets of an industrial unit, owing to certain difficulties the cost of land and building has not been taken in account in estimating the value of total fixed capital for the cottage industry.

In the first place, for most of the cottage industrial units, the work place and the residence are the same or are so mixed up as to indistinguishable from each other. In either case, the difficulties involved in ascertaining the value of the residence or its part wherein production activities are carried on.

Secondly a substantial portion of the units do not own their industrial premises and work in rented premises. Inclusion of the value of land and buildings in such cases necessitates the onerous task of capitalisation of the value of the land and buildings. It was, however, felt that any attempt either to apportion value to the portion of the premises used as 'workplace' or to capitalise the value of land and buildings obtained, would entail estimates and assumptions which may be arbitrary, if not unreal.

(ii) Working Capital.

The working capital or ^{circulating} ~~flouting~~ capital resources comprise of the following items : (1) cash in hand or in banks, (2) credit due to the unit, (3) stocks of raw materials and fuels, (4) stocks of finished products. Normally, for organised units, the rolling money can be estimated in reference to the duration of a season (about three or six months) the period being determined by the nature of industry and the processes of production and the demand in the market (local or outside). The average amount of working capital required for different industries in this sense, therefore, reflects the varying "operational costs" in value in each industry which depend on the differential prices of raw materials and fuels, practice of purchase and stocking capacities, the requirement of credit facilities by the trade, marketing arrangements, policies accepted by individual units and so on.

Difficulties of Estimation.

On account of the peculiar nature of the production processes and the condition of their day to day working, several difficulties were encountered in estimating the working capital utilised by the various industries under survey. Also for the same reason, it was rather difficult to find the relationship between working capital and the duration of the working period. Most of the artisans and small industrialists among the industries under survey were found to lead a hand-to-mouth existence, and are therefore, compelled to dispose of their produces at the earliest opportunity. Moreover, it was the experience during the present field survey that the majority of the manufacturer had no idea of the utility of the working capital and its volume related to the particular period of time.

2. Installed Capacity.

It is the production potential of a unit of production with its existing set of machinery and plants, the operative conditions of the unit such as the availability of raw materials uniform supply of power and demand for its products.

3. Output.

Output (gross or actual) represents the value of commodities turned out or services rendered by a unit over a period of time. In other words, the value of output is the ex-factory gross (selling) value of the products manufactured by a unit plus the

value of services rendered. Thus, it includes the volume of commodities manufactured and sold during a specific period, plus the stocks of finished goods, the remuneration earned for work done and the services rendered during this period. For presentation of the different types of industries in North Bengal, a classification of two broad groups may be divided :

- A. Resource based;
- B. Demand based.

A. Resource - based.

Industries developed, based on the local products are generally termed as resource based industry. It may, again be divided into three sub-groups :

- 1. Agro-based;
- 2. Animal-based;
- 3. Forest-based.

1. Agro-Based industry.

Mainly deals with the agricultural products. In North Bengal the main agricultural or plantation crops for industries are : Rice, Mustard, Jute, Sugar Cane, Orange, Pineapple, Mango, Mulberry, Tobacco etc. Under this group following industries have been functioning in North Bengal, at present.



Rope making from
Jute hessian
Matigara, Dt. Darjeeling.

Jute - Bailing.

The process of jute bailing has been introduced almost throughout the whole of North Bengal since 1972. Besides, the private units, the Jute Corporation of India, a Government organisation has established in North Bengal in 1974. The jute-bailing units are engaged in purchasing jute from the local MEX market bailing and transported it to the jute mills at Calcutta. There are all together 25 units, with capacity of bailing 40-80 bails of jute per day are functioning in North Bengal for 5 months (November to March). The main centres for jute bailing are : Cooch-Bihar town in the district of Cooch Behar, Maldibari in the district of Jalpaiguri, Samsi and Chanchal in Malda district, Raiganj and Islampur in West Dinajpur district. Each of the unit has an average size of productive capital investment of Rs.5,000 with an employment of 15 to 20 persons.

Jute ropes and twines are also the other products of raw jute. The manufacture of hand made jute rope is a common to most villages in North Bengal. The units are small and mostly family members are the main workers. The product of these units find market in local weekly or bi-weekly market centres or in adjoining urban centres. One mechanised jute twine factory near the Goalpurkur block in the West Dinajpur district was established in 1970.

Dhokra (Jute Carpet).

The practice of manufacturing jute carpet out of jute hessian

is a common practice among the scheduled tribe people of Banshihari block in West Dinajpur district and the of Siliguri Naxalbari block in Darjeeling district. With the help of hand tools, involving 2 to 3 family members and investing Rs. 300 each small unit has developed as cottage based industry. In 1973 the Banshihari Tapasili Silpa, Dhokra and Tentuja Sanabaya samity at Duniapur, 72 km. away from Balurghat Town was established, consisting of 129 members. The co-operative received the financial benefit of Rs. 25,000 from the State Government for fixed capital, while Rs. 3,083 was obtained for working capital as share capital loan. With an employment of 60 artisans the co-operative was able to produce jute curpet, jute bags etc. valued Rs. 4,384 in 1974-75, while ~~xxxxxxx~~^{it} was Rs. 17,749, in 1975-76, showing a satisfactory growth. Besides the local markets the products have good demand in Calcutta, Madhya Pradesh and Bombay. The units are suffering from marketing difficulty. Most of the units are existing as subsistence basis, which compelled them to limit their bargaining capacity with the big traders or middlemen, as such they sell their product at a low profit of margin. The product has an export potentiality.

Madal Making (Local Musical Drum).

~~Madal, a musical drums used by the villagers and tea garden labourers at the time of festival and ceremonial functions. The practice of manufacturing the instrument was started here in 1947 by the Ghashi and Naidas community. The drums are made up of~~



Bamboo-winower
Haidarpara
Dt. Darjeeling.

~~earthen material and leather, available within the area. The units are found functioning in Balapur in the district of West Dinajpur and Hatiguisa Schooldangi in the district of Darjeeling. Apart from the district and outside district they have been sent to Assam also. An artisan can manufacture 1 pair of Madal within seven days with an investment of Rs. 50 with an output value.~~

Rice Mills and Paddy Husking.

About 16 rice mills in West Dinajpur district and 50 units of paddy husking, in Cooch Behar district, are functioning. Apart from these units, rice mills and paddy husking are practiced all over North Bengal. The rice are milling with diesel operated hullar machines on an average each rice mill employs 10 persons, invests a fixed capital of Rs. 100,000 with a production capacity of Rs. 200,000 per annum (November to March). The paddy husking machines are mostly operated by diesel power. The units mostly undertake job works with a capacity of 15 quintals per day, an average investment per unit is about Rs. 10,000. These units give employment 2 to 3 persons. The main problems of these units are the non-availability of paddy during the off-season (April-October)

Rice milling with 'denki'^a (winower) (photo) is a common practice among the village people, mainly for their household

a. An horizontal wooden slab with 2 feet width and 8 feet length fitted with a pivot at the centre, which is attached with a hole at the ground, where paddy has been given for milling.

consumption. Family members are the workers of such units.

Oil mills.

The oil mill units including 8 in Cooch Behar, 8 in Malda and 32 in West Dinajpur district. They use mostly mustard seed as raw material. Mustard oil and oil cake are the main product of the mills. Diesel operated machines are used to crush the mustard seed. The average crushing capacity of these units is about 4 to 5 quintals of seed per day (within 8 hours). Oil mills, also, found in Jalpaiguri and in Darjeeling district, functioning in the urban centres, are of 6 in numbers. But, they can operate only one month due to lack of sufficient supply of raw materials. An average investment of Rs. 100,000 with a total employment of 10 persons the oil mills of North Bengal have the capacity of producing 15 to 16 kg. of oil per day (within 8 hours).

Village oil ghani have often been found on the village areas, comprising mainly with the employment of 3 family members. The capacity of a Ghani is to crush the mustard seed of 37 kg. per day (8 hours) and production of oil being 8 kg. Mainly bullocks have been used to operate the ghani. The oil produced by the ghani, are generally sold in the local weekly market.

Shoti food.

There is a unit producing shoti food in Cooch Behar town in Cooch Behar district. The capacity of the unit is 20 kg. of food per day. It provides employment to 4 persons. The raw materials for the unit, the shoti root, is available in the

b. Made up of from the stem of Jackfruit, Mango and sala trees with 8 feet length having a whole about 8 inches radius on one side for grinding the mustard seed.

district. The market is mainly confined within the district.

Fruit Processing.

The abundant production of Mango, Orange, Pineapple and Tomato have given rise the fruit processing units in the districts of Darjeeling and Malda. There are about 10 units covering in the village areas of old Malda, Manikchak, Kaliachak and Chanchal in the district of Malda engage in making mango slices preserved in brines for export to Calcutta where they are processed into hot and sour pickles (chutney), jelly etc. Each unit with an average capacity of processing 685 M.T. of mangoes in 120 days (May to August), employing about 50 female workers daily. In 1974, 4 units have been set up at old Malda to manufacture hot and sour pickles and jelly etc. Among the 3 fruit processing units in the district of Darjeeling, 2 are situated at Siliguri while the other is at Matigara. They produce mainly canned pineapple, orange, and tomato squash, jam and jelly etc.

The fruit processing units in Malda district are mainly confined to the rural areas where as in Darjeeling district are developed in and around urban centres. Besides the local urban market, the products have demand in Calcutta and Allahabad also. An average capital investment of Rs. 100,000 each unit has employed 50 female workers daily. The units are extremely seasonal in character. The product of these units are of exportable variety.

Khandsari (Molasses).

The processing of gur (Molasses) from sugarcane is carried out in village areas of Malda and West Dinajpur districts. Sugar cane have been planted within these districts. The village people with the help of locally produced implements produce gur (khandsari) on cottage scale basis. Three big units, employing 27 persons each have been located at Balurghat in West Dinajpur district. The production has been consumed within the district.

Cigar Cheroot.

The district of Cooch Behar produces superior quality of tobacco, suitable for making cigar cheroot. In 1972 The Cigar-Cheroot Co-operative Society was set up at Dinhata 20 km. away from Cooch Behar town. The unit produces a variety of cigar cheroot : Ameer, Corona, Dawson, Whifts and Whifts Special etc. The unit received the share capital loan of Rs. 6,000 from the District Industrial office for 60 members. With an employment of 6 female workers the unit has a capacity to manufacture 5,000 sticks daily. The product has been appreciated for its taste, burning quality and flavour. The unit requires suitable building, equipments : Re-drying chamber, Fumigation chamber, Cutting Scissors, Small Tools and Trays etc. Financial help and assistance for marketing the product from the government side will help to expand this industry.

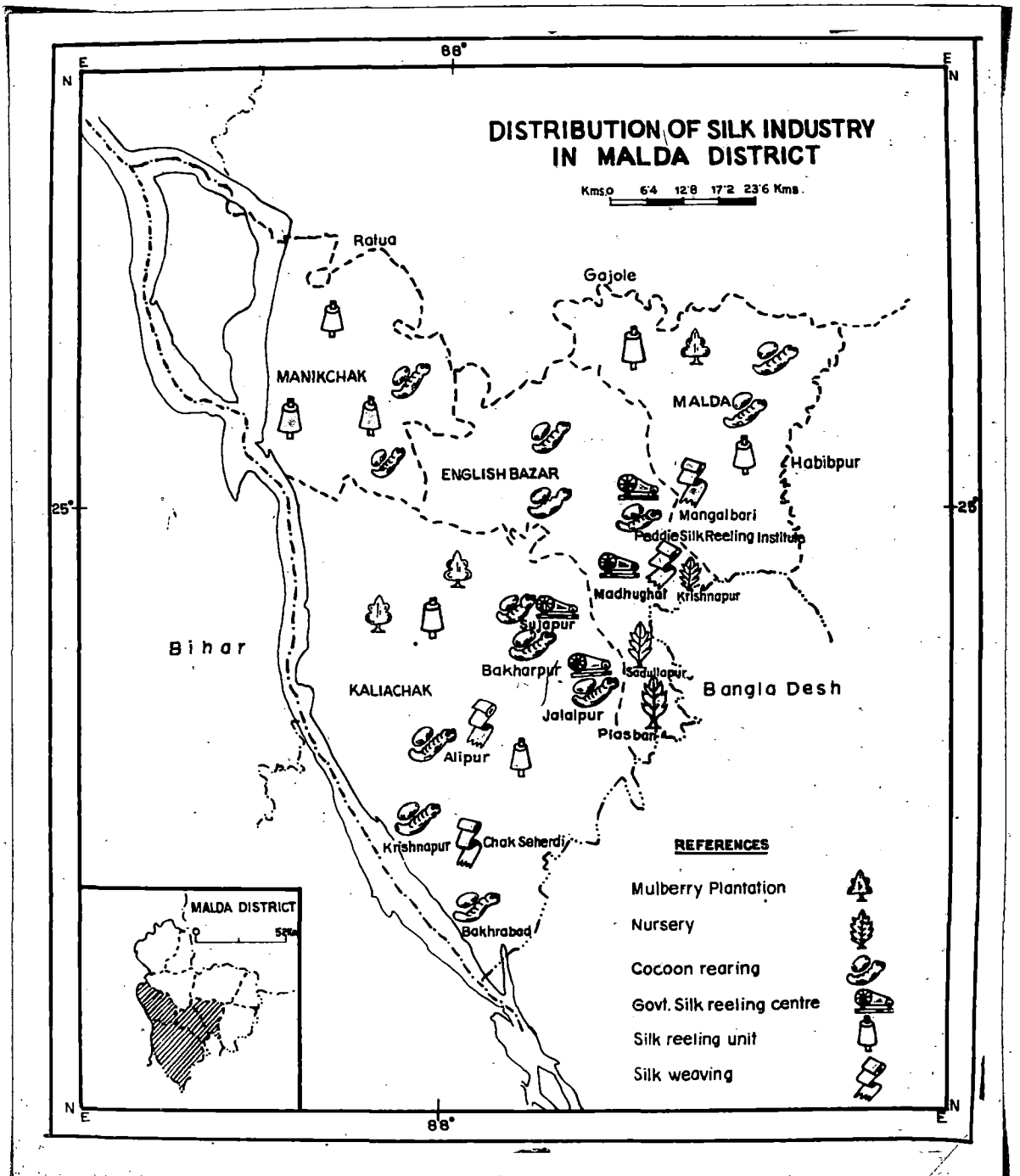


Fig. 15

Seri-culture and Silk Industry.

The rearing of silk worms and the manufacture of silk fabricks became the general occupation in all classes of the people on both banks of the river Mahananda in the neighbourhood of Malda district since 1686. There was an English Silk Factory in the town of English Bazar. In 1836 the factory was abolished⁴.

Since the year 1950 the sericulture and silk reeling have come into prominence, on a commercial scale. Silk worm rearing and silk reeling, the largest agro-industrial activity of Malda district employ about 31,000 families involving a total of 155,000 persons. (Fig.15)

The silk industry have been divided into three different stages.

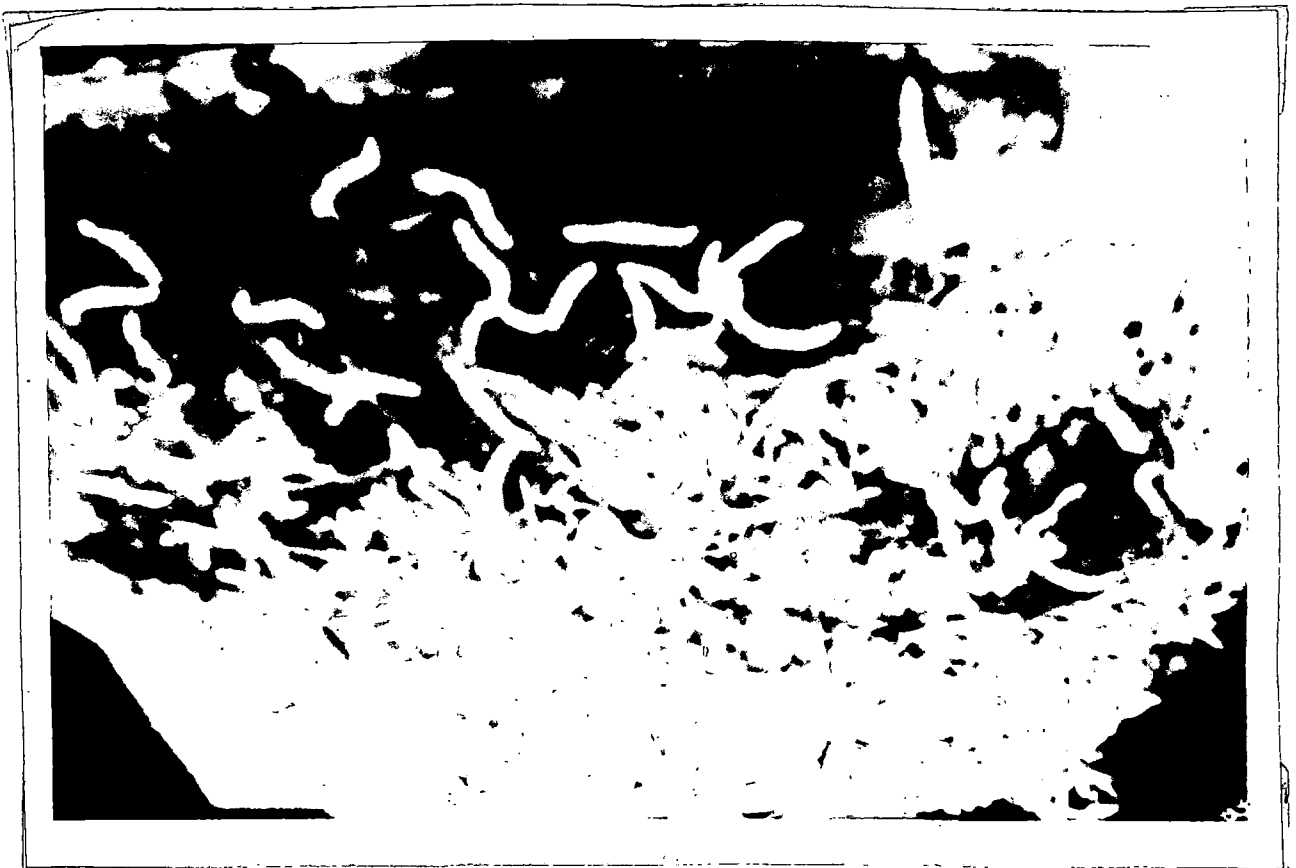
1. Rearing of silk worms;
2. Silk reeling; and
3. Silk weaving.

1. Rearing of Silk worms.

The rearing of silk worms depend upon the plantation of mulberry plants, because the green leaves are the only food for silk-worms. Mulberry cultivation therefore, occupies an important place in the economy of Malda. The total area devoted to mulberry cultivation in Malda district is 13,700 acres (1977), where as in West Bengal the total acreage under mulberry cultivation is 17,643 acres. The district of Malda, therefore,



Mulberry Plants at Nursery beds
Sarium, Dt. Jalpaiguri.



Larva or Silk worms at their early stage (below 10 days)
Sarium, Dt. Jalpaiguri.

constituted about 77 percent of the total area under this crop in West Bengal. The largest concentration of mulberry plantation is in the southern part of the district where the land is high, composed of sandy loam and thus unsuitable for paddy culture. The average yield per acre, is about 11,100 kg. of leaf per annum, with an average expenditure of Rs. 1,5000. The cost and profit per acre of mulberry plantation is shown below :

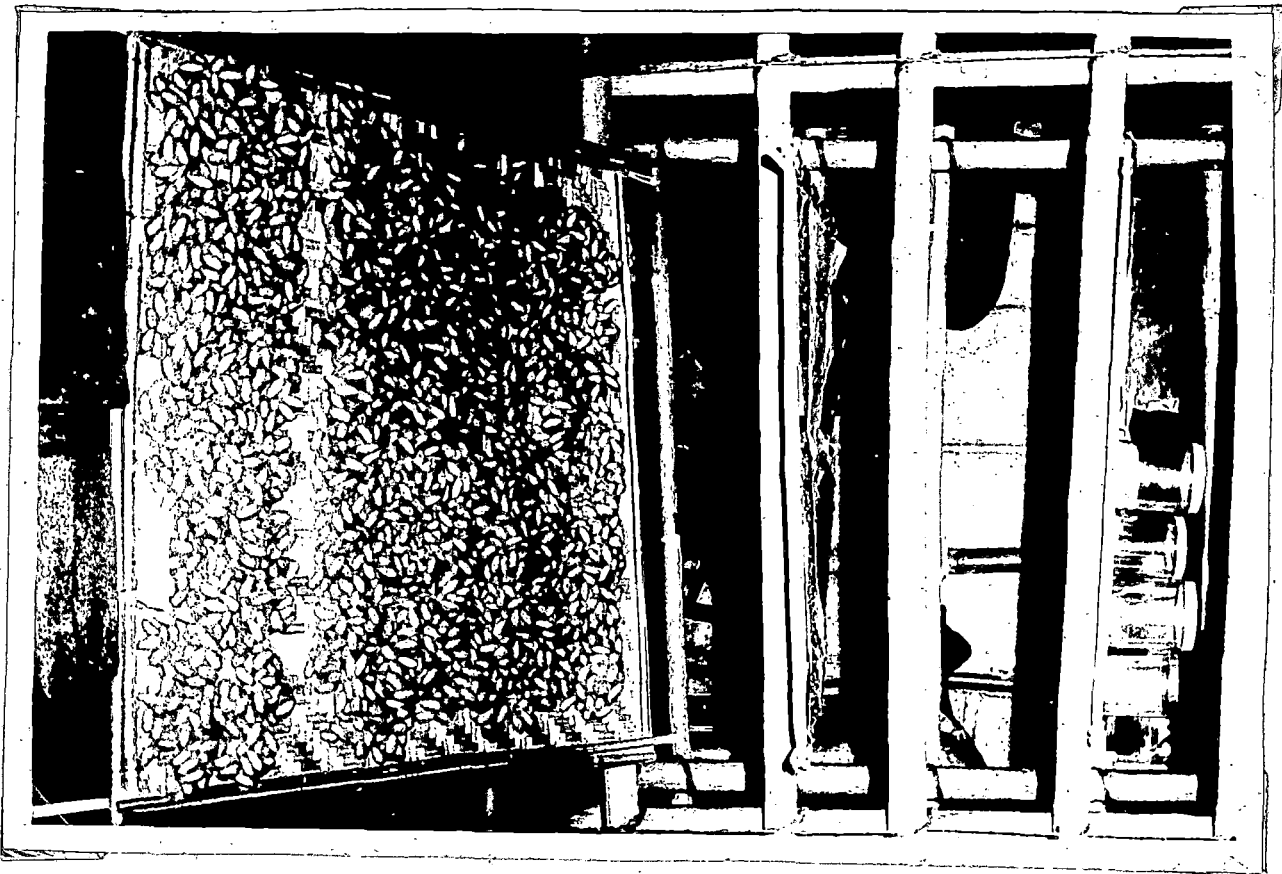
Cost and profit per acre of Mulberry cultivation⁵

1. Yield per acre	11,100 kg. leaf	
2. Cost of cultivation per acre	Rs. 1,500.	
3. Rearing cost (including family labour)	Rs. 1,800	The gross income per acre is :
4. Cocoon production from 1 acre (i.e. 300x300 of leaf) 11,100 Kg.	Rs. 360 kg.	360 X 18 - Rs. 6,480/-
5. Selling price per kg. of cocoons	Rs. 18	The net profit per acre of mulberry plantation is : 6,480/- (1,500/- 1,800/- - Rs. 3,180/-

The Central Nursery at Piasbari, 15 km. away from English-bazar, established in 1913, is distributing the improved quality of eggs among the reares. The farm is able to produce the Japanese variety of F₁ group only, during the winter season because the climatic condition of Malda is not suitable for rearing the exotic races during other seasons of the year. As such, seed farms have



Pupa or Silk worms (20-22 days) on bamboo-woven round, compartmentalised plates, Sarium, Dt. Jalpaiguri.



Silk Cocoons (42 days old) Sarium, Dt. Jalpaiguri.

been established by the state government in the hill areas of Kalimpong and Kurseong from where the eggs of the Japanese races are brought to the plains of Malda and Murshidabad. Besides, the seed farm at Piasbari, there are also three other nurseries namely, Krishnapur Nursery, Sadullapur Nursery and Amrity Nursery, in Kaliachak Police station, offering disease-free eggs among the rearers.

2. Silk reeling

The mulberry planters are usually the rearers of silkworm and the members of the reares' family adopt the reeling of silk as their seasonal occupation. An estimated number of 6,000 reelers and winders and 10,000 spinners of Silk and Matka are scattered in as many as 499 villages of Kaliachak, Malda, Manik-chak and Englishbazar police stations. The total production amounts to 250,000 kg. of silk yarn, accounting for about 75 percent of the total production of the state, which brings about Rs. 6 crore annually for the district.

Reeling of silk, in most of the places is done in small units with country charkhas (hand operated reeling machine), are of inferior quality. There are altogether 3,500 country charkhas in the district. Improved mechanised machines have been applied in State Filature at Madhughat 9 km. away from Englishbazar. The unit is equipped with 100 basins. Another reeling institute has been established by the government known as Paddie Silk Reeling Institute with 20 basins in Englishbazar. With a view to produce

quality silk through trained operators, a training-cum-production centre was established in this institute. The institute is engaged in imparting training to reelers for better reeling technology in order to meet the need for trained hands at State Filature, Madhughat. The institute also provides teating facilities for raw silk and operates a twisting plant of 24 spindles. Besides, there are also about 100 improved machines operating in the private sector. Production of silk yarn in the Malda district has been shown in Table.46.

Table-46⁵

Production of silk yarn in Malda district

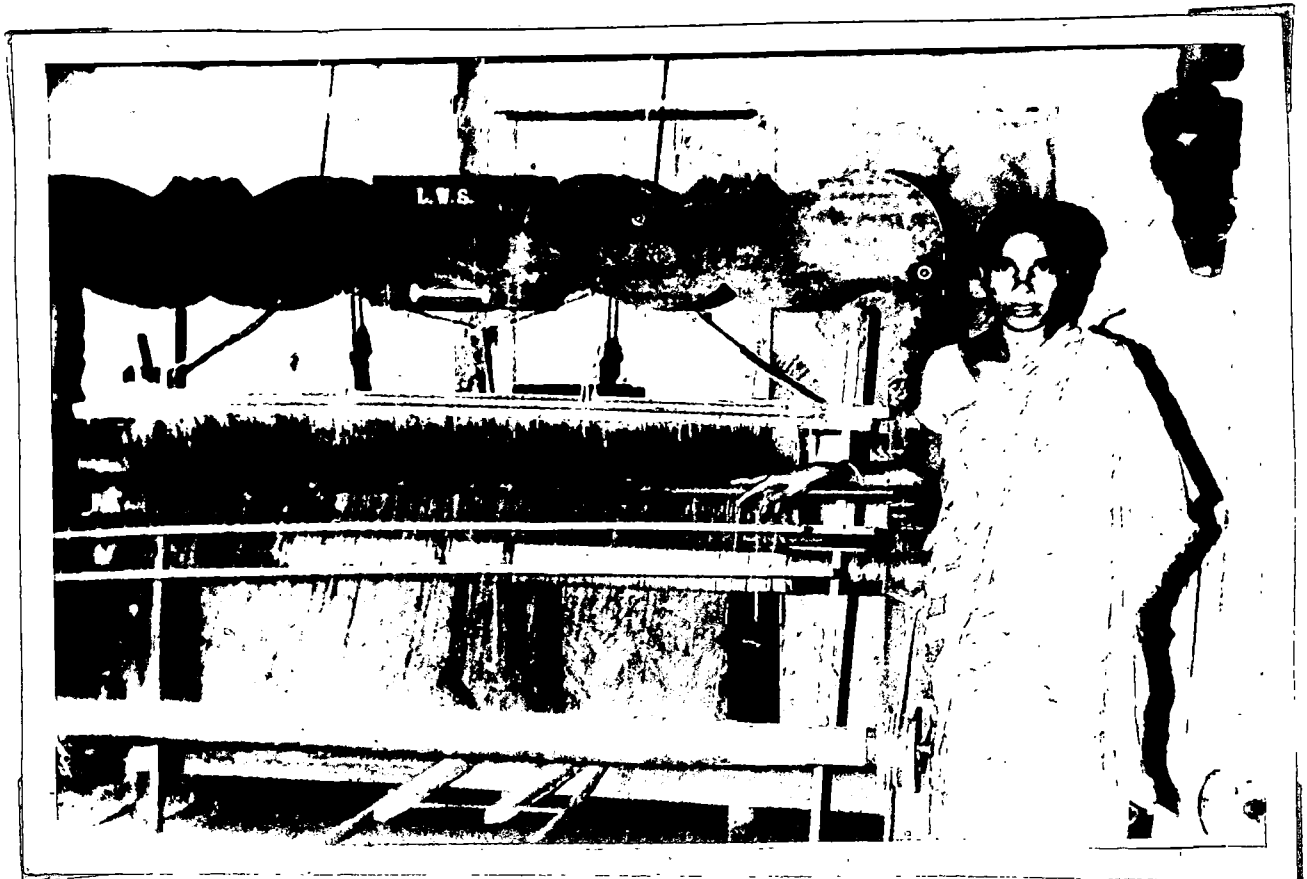
Year	Districts production (Kg.)	State's production (Kg.)	Percentage of the district
1974	250,000	316,000	79.11
1976	255,000	350,000	72.85

The growth rate of production of silk yarn in Malda district shows that in 1974 the production was 255,000 kg. constitute about 79.11 percent for West Bengal but it comes down to 72.85 percent in 1976.

The average production rate, therefore, shows 75 percent which confirm our earlier contention. The yarn produced here



Silk reeling done mostly by female labour
Sarium, Dt. Jalpaiguri.



Silk Weaving on Semi-Automatic loom
Sarium, Dt. Jalpaiguri.

are of much superior quality with a bright lusture as compared with other silk producing areas of the / country.

Silk reeling with cocoons of Japanese variety of F¹ (Japanese X/ indigeneous), in / considered to be more advantageous in comparison to Nistari or indogenous group. Experiments conducted by the sericultural states show that the yield of mulberry could be increased by resorting to cultivation of mulberry grafts with improved variety, since the cost of production of mulberry has a great bearing on the cost of cocoon. However, the short supply of Japanese races of silkworms is the limiting factor, which requires a faster growth.

About 30 percent of the silk yarn produced in Malda finds its market in Benaras, Bhagalpur and other places of the country engaged in silk weaving, the balance is being consumed by other districts of West Bengal, Murshidabad, Bankura and Birbhum.

3. Silk weaving.

There is only one mechanised weaving centre established in 1962 by Rehabilitation Industries corporation Ltd. (R.I.C.), a Government undertaking unit at Englishbazar with an employment of about 90 workers. The centre is well equipped with power driven, doubling, twisting and winding machines. It has 68 looms of different types engaged in weaving Kora Thans, Garad, Matka etc. The table below show the production of the silk in the unit.

Table - 47⁶

Production of silk in R.I.C. at Malda

Year	Quantity produced (Mts.)	Cost of production (Rs.)	Sale value (Rs.)	Percentage or profit
1973-74	30,710	3,17,200	4,32,000	73.4
1974-75	49,100	5,41,000	9,67,2000	55.9

The table above shows the relationship between the cost of production and percentage of interest obtained from the quantity produced for 1973-74 and 1974-75. The rate of silk production increased to 60 percent from 1973-74 to 1974-75. The percentage of profit being 73.4 for the same year while it is only 55.9 percent in 1974-75, proves a deteriorating market value.

The Kora Thanjs are sent to Calcutta for second stage of processing, bleaching, dying, and printing. The R.I.C. has its own sales emporium for selling the product at Englishbazar.

One dying and bl^eaching centre at Jalalpur, 12 km. away from Englishbazar, has been set up in 1976 under aegis of Sri Gandhi Ashram.

Another silk weaving centre has been started in 1976 at Sariam, near Jalpaiguri by the Luthern World Service with a capacity of producing 6 mts. of silk per day. This organisation

also starts another weaving centre at Tufanganj in November, 1979 in Cooch Behar district. In 1978 The Luthern World Service, have started plantation of mulberry in 77 acres of land in the four districts of North Bengal; Cooch Behar Jalpaiguri, Malda and West Dinajpur. They distributed 24 acres of land among the 66 farmersⁱⁿ/the same year. In 1979, again 77 acres of land have been devoted for mulberry plantation by the organisation and 49 acres have been distributed among 76 farmers.

Silk-weaving has been practiced in the village areas of Malda district on a Cottage scale basis and family members are the main workers. Manaskamaha Silk weaving Factory was established on 1977 at Mangalbari, near Englishbazar, financed by the Rural Industrial project office, Malda, involving Rs. 5000 with 6 mts. of silk producing capacity per day, employing 4 persons.

An analysis of these facts shows that the silk industry has its deep roots in Malda. But despite the export potentiality it has suffered from several difficulties. Sericulturists and silk reelers are very often affected by the fluctuations in crops and market. They are still in the clutches of middlemen, advance them cash loan during rearing period with the object of cornering their produce at a cheaper rate than the market. Recently, financing schemes taken up by the nationalised banks in collaboration with the State Department has opened a new avenue for the rearers.

From 1977 a scheme to expand the area of mulberry cultivation has been introduced by the directorate of sericulture in each district of North Bengal to develop the silk industry. At Matigara

near Siliguri, a Sericulture Institute has been opened in 1975, by the State Government to distribute the improved quality of seed among the mulberry cultivators of Darjeeling, Jalpaiguri and Cooch Behar districts.

The introduction of 'Kakme' system (fixation of price of Cocoon in terms of yield of silk) has enabled both the producers and the consumers to carry on business transactions on a just and rational basis.

Eri-culture and Eri-silk

Eri-culture is an old cottage industry of Assam and West Bengal. It is prevalent among the Scheduled Tribe people in villages of Jalpaiguri district and a part of Cooch Behar district adjacent to the border of Assam. With a favourable climate and socio-economic structure, the tribal villages of these areas produce Eri-silk cocoons, Eri-silk yarn, Eri-silk finished products both for domestic consumption and trade.

Mech community scheduled Tribe families rear Eri-silk worms, spin Eri-silk yarn by Charka (hand operated reeling machine) and weave Eri-silk in country looms.

Eri rearing provides a seasonal employment to the agricultural families. There is a Nursery at Taleswari, 20 km. away from Alipurduar Block in Jalpaiguri district engaged in supplying disease-free eggs among the rearers. Eri-culture is mainly found in Kumargram, Alipurduar and Kalchini Development Blocks in Jalpaiguri

district. The state Government give financial assistance to facilitate this industry. Table⁴⁸ will show the growth of this industry.

Table-48⁹

Development of Eri-rearing in Jalpaiguri district.

Year	Production of eggs Gms.	Number of rearer
1969-70	6239	1295
1970-71	5360	1290
1971-72	6077	1140

The table above reveals that the production of eggs in 1969-70 was 6239 gms., decreases to 14.1 percent in 1970-71 but again increases to 11.8 percent in 1971-72. The number of rearers have gradually been deteriorating in 1969-70 they were 1295, while in 1971-72 the number being 1140 with 11.99 percent less, proves the unpopularity of the practice for want of market facility.

With a view to revitalise this industry a Training cum production centre of Eri-culture was established at Kamakhyaguri, near Alipurduar in 1958, by the state Government. The centre has

been providing 40 trainees with a stipend @ Rs. 75 per month to each trainee. Rearing of Eri-silk worms, spinning of Eri-silk yarn and weaving, have been instructed here.

2. Animal-Based Industry.

Animal rearing or animal husbandry are the common practice among the villagers in the hill areas as well through out North Bengal. Buffalo, Cattle, Goats, Pigs etc. are the livestock resources offer a huge collection of milk within the region, suitable for developing the Dairy industry.

M/s. Edward Keventer's Private Ltd., was established on 1989 in Darjeeling town. The unit has its, own Dairy farm the collection of milk from its own farm is about 250 litres, and from the neighbouring villages is 500 litres, daily. The total daily collection of the unit, therefore, comes to 750 litres. The unit is engaged in pasturing the milk, bottling them and distributed to the urban people of the town. It manufactures cream, Butter, Ghee, cheese, etc. An annual production of different products has been given below.

Milk	168,551 litres
Butter	2,115 kg.
Cream	935 kg.
Ghee	106 kg.
Cheese	1,017 kg.

Total : 4,266 kg.

The unit has 30 workers, including 6 office staff. The product has a great demand within the town.

In 1975 "The Himul Co-operative Society" was established by the State Government at Matigara near Siliguri town. The collection of milk ~~XXXXX~~ encompasses the whole of Darjeeling district, Islampur subdivision of West Dinajpur district and Sadar subdivision of Jalpaiguri district. Rs. 1,288,000.00 has been financed by The State Government as fixed capital. The unit started functioning since 1976.

3. Forest-Based Industry.

Industries, developed on forest products are known as Forest Based Industry. North Bengal, though poor in basic resources, rich in huge amount of (about 30 percent in Darjeeling and Jalpaiguri district) forest resources, give rise Saw mills, Ply Wood Factories and Furniture making units as small scale industry. On the other hand, cart-wheel, boat-making, etc. have functioned as cottage-scale basis.

The product of saw mill and ply wood factories have market around the urban centres and tea-garden area^o of North Bengal. A detail study of both the industries have been made in a later chapter (VI).

Furniture-Making.

Furniture-Making units are engaged in making domestic as well as office furnitures like Almirah, Chair, Cot, Table etc.

The units are small with an average investment of Rs. 1,500 per unit and employing 4-5 persons. With the growth of government offices, private offices, Banks, Colleges, Schools, the demand for furniture have been increasing. These small cabinet firms are generally developed in the urban centre of the districts having a ready market around them.

Mat-Making.

It is a traditional handicraft of the district of Cooh-Bihar. The artisans are mainly concentrated in the areas, namely Harinchara, Ghughumari, Dhaluabari, Tufangang etc. This is purely a cottage industry including various processes viz. the collection of Mothra cane, drawing of thread from the ripe cane and finally the weaving of the mat. Mothra cane have also been drawn from the forests of the Assam, besides the local forest. More than 2000 persons are engaged in this industry. The development of this traditional industry depends upon the improvement of the cultivation of the raw materials. Each unit requires at least Rs. 300 per annum to stock the raw materials and family members are the workers. The product has a very wide and assured market within the district and out side district as well.

Cart-Wheels : Are mostly found in the village areas of North Bengal. The owners are mostly from Bihar. Ox-drawn or Buffalo-drawn cart is the main vehicle in the rural areas of the region

for transaction of commodities from producing centres to the weekly or bi-weekly markets. as such the demand for cart wheel in North Bengal's economy is growing day by day. Most of the cart wheels are either made up of local soft wood like Neem, Mango, Jackfruit and Sal etc. With the help of small number indegenous tools and implements, employing about 2 to 3 persons, having an investment of Rs. 500 each unit has grown up. It takes / each unit to make a pair of wheels, for seven days. The work stops during rainy season.

Boat-Making. Units are not so wide spread as the cart wheel units, and are mainly concentrated in West Dinajpur district. During the rainy season the entire south eastern portion of the district is flooded and the normal communication of the area is greatly affected. Boat-making has thus developed, specially during rainy season. Local timber available from Jackfruit trees are mainly used in making boats. The units are engaged with 2 to 3 persons with an investment of Rs. 700. The capacity of each unit is limited to the manufacture of one boat in 7 days. Boats carry both man and commodities. They are used as fishing, therefore, as well.

Paper and Paper products.

Only one paper mill has been established in 1977 near Raiganj in West Dinajpur district "The Kulik Paper Mill" The factory, situated on the National Highway No. 34 at Chotte Parua,

is only 6 km. away from Raiganj urban centre. This unit has developed as a medium sized industry. The factory has been started by a Marwari with the financial assistance obtained from the Central Bank of India and West Bengal Financial Corporation.

This unit produces mainly craft paper, poster paper with a capacity of 7-8 tonnes per day. The factory area is centrally located among the rice producing areas of West Dinajpur district using raw materials like wheat straw, paddy straw and jute straw, obtained from the surrounding area by road transport. The unit now produces paper with the help of 50 percent waste paper and 50 percent local raw materials. (jute-straw, paddy straw etc.). The future plan of the mill is to produce paper with soft wood. In 1977 the factory produced 4-5 tonnes of paper per day. The unit has its own transformer with a capacity of 500 KVA. The requirement of electricity is 200 KW. per hour. Chemicals, used for making paper, caustic soda, resin, allum etc. have been drawn from Calcutta by road transport. The factory has not yet been popular in the local market, and Calcutta remains the main buyer. The main difficulties of this mill are the insufficient supply of power and lack of local market.

Bee-Keeping.

The north eastern part together with Kurseong, Darjeeling and Kalimpong forest divisions the district of Darjeeling has

good scope for development of bee-keeping industry to subsidise its economy. The district is renowned for fruits and vegetables. Among fruits, Orange and Pineapple are the major ones while Peach, Plum, Pear and Cardamom are also grown. The present yield of orange is about 50,000 tonnes and of pineapple about 14,000 tonnes.

At present household industries employ about 4,923 persons (census 1971) out of the 282,442 total working population in the district. The number of bee-keepers are 4,157 makes for 1.47 percent of the total worker in the district.

About 90 percent of the honey in the district is of organge variety. The orange covers about 1,918 acres of the cultivable land in the hill area of the district. The original home of orange are Takdah and Mirik. The Government has planned to bring in an additional acreage amounting to 2500 for orchards to accommodate two mushroom farm in those places and development of bee-keeping has sought to be attempted on an organised basis.

The Central Government has set up the All India Khadi and village Industries Commission, under which a central Bee-keeping industry was constituted in August 1957 at Kurseong for encouraging bee-keeping (extraction of honey from the combs of bee-colonies) in scientific method, untouched by hand and free from all impurities. Besides, the unit is also engaged, in distributing the bee-hives and honey extracting machines among the villagers at subsidiery rate. Supply of bee-hives have been obtained from Baruipur, near Calcutta. The estimated cost for the establishment of one bee-keeping unit is Rs. 150-300, involving one or two persons.

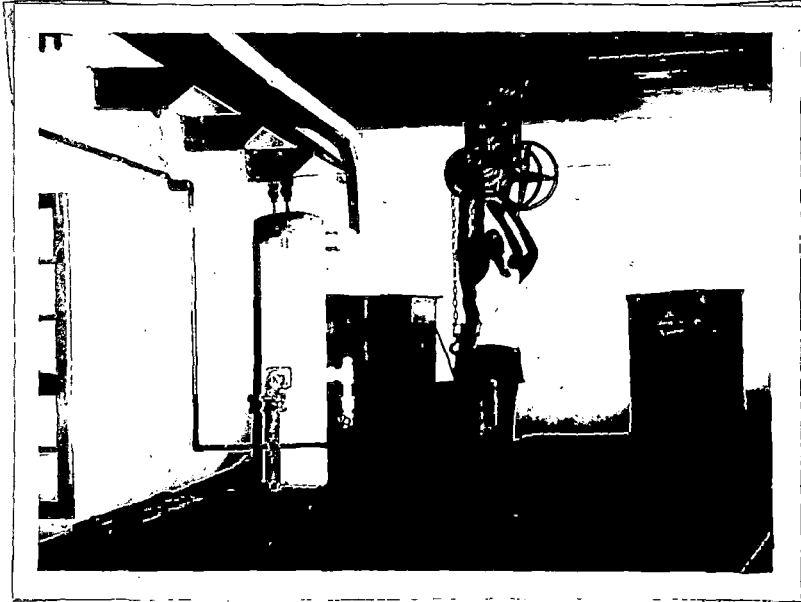
B. Demand-Based Industries.

With the growth of population and urban development in North Bengal, the demand for some basic necessities and specialised products like ready-made food, Textiles, Leather product, Chemical product, Engineering goods, Handicrafts etc. have gradually increased. The industries therefore, have mainly, developed based on local market within the region.

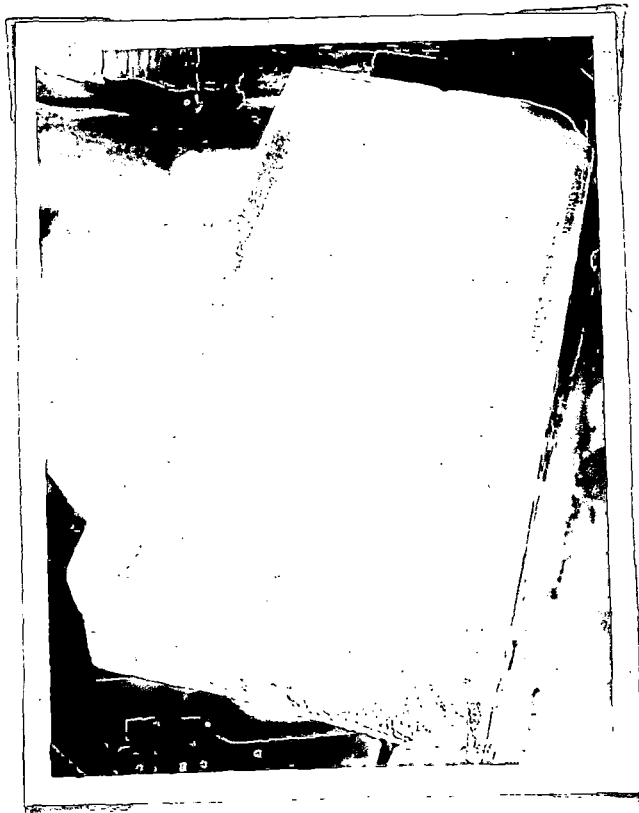
Bakery. The Bakeries of North Bengal are engaged in manufacturing hand made biscuits and loaf. From 1960 Bakery industry are the common practice in all the urban and village areas of the region. The capacity per unit is to produce 100 kg. per day with an average investment of Rs. 1,500 towards the cost of moulds and equipments, involving 4 persons. The production of these units find market within the local weekly market centres. Besides, non-mechanised bakeries 2 mechanised units, in 1962 at Siliguri in Darjeeling district, 1 at Birpara, in Jalpaiguri district, in 1969 and 3 in Malda district in 1977, have been established. The total fixed capital investment per unit is Rs. 150,000 with an employment capacity of 10-12 persons. Insufficient supply of working capital are the main draw-back of the units.

The aerated water making.

There are about 4 units in Darjeeling district, manufacture aerated water. The units are mainly confined to the urban centres. With an investment of Rs. 2,000 as fixed capital and an



Ice Factory, Siliguri,
Dt. Darjeeling.



Manufacture of Ice Blocks
Ice Factory, Siliguri,
Dt. Darjeeling.

employment of 2 persons, each unit can produce drinks worth Rs. 50,000 per year.

The confectionery.

Are mostly engaged in making sweet meet in all places of North Bengal. Some units also make lozenges, sugar-candy and hot gram, in addition to Khandesari Sugar. They are mostly confined to the urban centres of Darjeeling and Jalpaiguri districts.

Ice and Ice Candy.

These units are found in all the districts of North Bengal. The average capacity per unit is 4 to 5 tonnes of ice per day with an expenditure of about Rs. 40,000 for plants and machinery and employ ~~XXX~~ 6 persons on an average. These units have developed in 1970. At Siliguri in Darjeeling district, one ice factory with an installed capacity of 30 tonnes of ice per day has been established in 1972. The ice, manufactured in different units, finds local market in urban centres and Military base to preserve fish, medicines etc. The Ice manufacturing units are very often suffering from short supply of electricity. In 1976 another ice factory with an installed capacity of 50 tonnes per day have been started at Siliguri.

Bidi-making.

Bidi-Making units are engaged in wrapping grind tobacco with

Kendu leaf for smoking. This practice is popular in all most all the village people in cottage-scale level. With an investment of Rs. 200-300 and 2 to 3 female family members each unit can produce 100 pieces of bidi daily. The raw materials, Gujrati tobacco are obtained from Gujrat, while the Kendu leaves are drawn from Orissa by rail transport. The products have good demand within the area.

Apart from the cottage-based units, small-scale Branded Bidi making units have developed in Cooch-Bihar Town in the district of Cooch-Bihar, Siliguri in the district of Darjeeling, Kaliachak in the district of Malda and Raiganj in the district of West Dinajpur. Each unit have capacity to manufacture 10,000,000 pieces of bidi per month, investing Rs. 100,000 as productive capital with 100 workers.

Textiles. Cotton Hand-loom weaving and Tailoring are common under this group in North Bengal.

Hand-loom weaving.

The weaving of Hand-loom clothes in the districts of Cooch-Bihar, Malda and Dinajpur were practiced since 1686. The articles manufactured at subdivisional town of Mechligenj in Cooch Bihar district were Mechli a coarse cloth made of jute and used for screens, bedding etc.

After the partition of India and Pakistan (no Bangla Desh) in 1947 the skilled weavers from Bangla Desh has migrated to the districts of Cooch-Bihar, Malda and West Dinajpur in North Bengal and started weaving.

Dhoti, Mosquito-net, Bed-sheet, Gancha (Towel) etc. The details of handloom industry making one of the major industries of the region, has been discussed in a later chapter (VII).

Tailoring.

Comprising 2 to 3 persons in employment and with an average investment in machinery and equipments worth Rs. 700-800 per unit, the tailoring units have been found working throughout North Bengal. The units in the plain cater to the needs of the local inhabitants, while in the hill areas of Darjeeling, they mostly prepare made-to-order garments for visitors and institutions.

Leather work.

Shoe-making units are characterised by the Leather-work industry. The units are found functioning since 1964 in the towns of Darjeeling, Kalimpong and Kurseong in Darjeeling district. This industry became common from 1972 in almost all the urban centres throughout North Bengal. They are engaged in making Ladies sleepers, Platforms, Boots, Ankle-Boots, Gum boots etc. Each unit is comprised of 5 to 6 persons, and investing Rs. 2,000 for fixed capital. Leather is obtained from Calcutta. The units are undertaking both manufacturing and repairing of shoes. The capacity per unit for making shoes, is 8 pairs per day with the help of sewing machine while it is only 3 pairs by manual labour. Financial assistance upto Rs. 3000 has been disbursed at Block-level to improve this industry. The units find local

market within the urban centres and local villages.

Chemical & Chemical products.

Candle manufactureing, Distyilled water making, Washing Soap making, Writing ink, Pheneol, Cosmetics (Alta, Sindur, Snow) and Tooth powder making are activities of this group in North Bengal. They have mainly grown in urban centres.

Candle-manufacturing.

Poor supply of electricity within the urban centres have given rise the candle-manufacturing units since 1972. The units have an investment of Rs. 2,000 for equipment and employed 5 persons. Each unit has capacity to produce 1 tonn of candle per month. But, since 1976, most of the units have been stopped due to unavailability of paraffin wax, which is the main raw-material.

Distilled Water.

The units producing distilled water and diluted sulphuric acid, are being consumed by the schools, petrol pumps and auto repairing shop. Each unit has a capacity to produce 50 grosses of 625 ml. bottles of both the products.

Each unit has a capital out lay of Rs. 2,000 in plant and machinery and is providing 2 persons. The units are suffering from want of working capital.

Sodium Silicate.

Sodium silicates are used for making soap. Sodium has been drawn from Calcutta, while the silicates are obtained from Allahabad by railway transportation. The units were started functioning from 1951. There are altogether 3 factories : One is situated at Alipurduar in the district of Jalpaiguri and the two are established at Siliguri in the district of Darjeeling. The average production capacity per unit is 600-700 tonnes of sodium silicate per annum with a fixed capital investment of Rs. 15,000 involving 8 workers. The product has demand in all most all the North Bengal districts.

Washing Soap.

The soap-making units are present in all the urban centres of North Bengal. The average production capacity of a unit is to invest fixed capital Rs. 4,000 with a production capacity of 1,600 quintals of soap per annum, employing 7 persons. The rated capacity remains unutilised, owing to the short supply of raw materials, tallow, sodium silicate etc., which they have to procure from Calcutta at a high price. The production of these units find market in the urban areas and local weekly market centres, in the villages.

Writing Ink :

There are altogether 4 units in North Bengal manufacturing writing ink. The units of Cooch-Bihar and Siliguri are making a good progress competing with the other established products in the market. The production capacity per unit is, 1,000 litres of ink and 1,250 gross of vermilion per month, with an fixed capital investment of Rs. 3,000 involving 7 persons. The units require help for working capital to increase their product.

Cosmetics, Phenol, Tooth Powder units are very few in number. With a very little investment (Rs. 200) and family members, they are making a good business in the local market.

Printing Press.

Printing presses have developed in the urban centres of North Bengal. Printing of local News Paper, postering paper, Advertising paper, Tickets for the local buses, Cash-Memo of the shops etc. have been printed in these units. With an average fixed capital investment of Rs. 10,000 and an employment of 4 persons each unit has a very good local market.

The problems of these units are the procurement of raw materials i.e., paper, ink roller etc. they have to bring from Calcutta at high rate. Short supply of working capital, is main the problem .

Paper bag. Unit has been started at Raiganj in 1977. It is a mechanised unit, engaged in producing paper bag to supply the local market for packing various commodities. Paper, the main raw material is obtained from Calcutta. The unit has invested Rs. 10,000 as fixed capital and employed three persons.

Non-Metallic mineral products.

The industries of North Bengal falling within this group are the manufacture of Cement well-ring, tiles, slates, bricks and earthen pottery.

Brick-making.

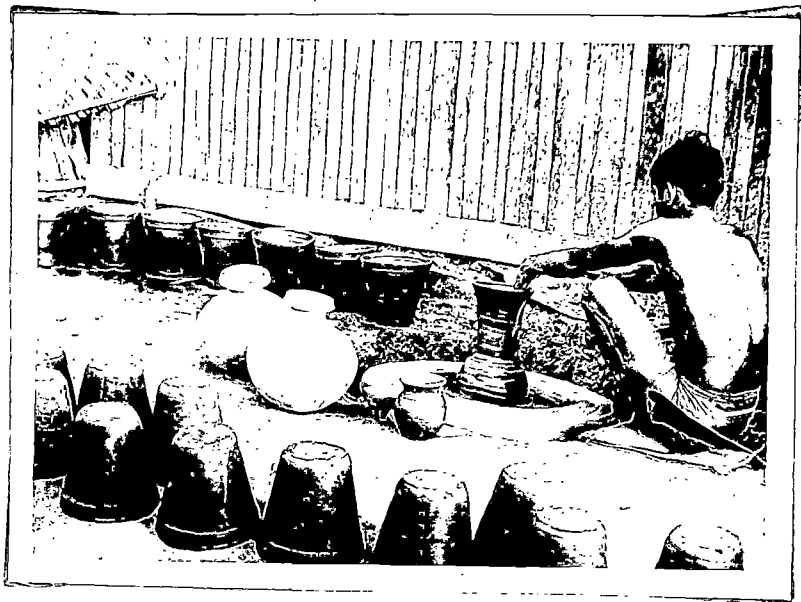
Growing civil construction activities have generated demand for bricks. Consequently, a number of brick manufacturing ^{units} have come up on the river side of the urban areas of North Bengal. The units are non-mechanised. Average installed capacity of each unit is about 12 lakh pieces of bricks per annum, operating with 2 brick kilns. The activity is confined only 120 days in a year. The employment per unit is about 100.

Tile-making.

Tiles are preferred mostly in rural areas as they are both durable and economical than paddy-straw for roofing the village huts and can well be used both in mud and brick built houses.



Manufacture of Earthen pots of different types on earthen wheels Haidarpara, Dt. Darjeeling.



Different Types of earthen pots, Haidarpara, Dt. Darjeeling.

The units are localised in urban centres. With an investment of Rs. 500 employing 30 workers a unit can produce 50,000 pieces of tiles per day.

Pottery-Making.

Units are engaged in making household earthen utensils. This is a traditional village industry practiced almost all the villages and urban centres of North Bengal by Kumar class people. The products have demand within the area both for the villagers and the urban dwellers. Mainly earthen pans, bowls, pitchers, glasses, well-ring etc. have been manufactured with the help of a earthen wheel. Mud, the main raw materials are available in the river side. Coal used for firing the product for getting strong are obtained from the local coal depo. With a capital investment of Rs. 500 each unit can develop, involving the family member as worker. The units are facing a number of difficulties :

- (a) Poor living condition of the artisan hampered the work during rainy season;
- (b) Lack of market; ~~facility;~~
- (c) High prices of coal; and
- (d) Insufficient supply of coal.

Slate-making.

Slate making units are found functioning at Maynaguri in Jalpaiguri district and at Matigara in Darjeeling district. The



Manufacturing of Tea Machinery (Conveyorbelt)
at Bhattacharya Mechanical Engineering Industry
Chalsa, Dt. Jalpaiguri.



Manufacture of Tea Grading
Machine, Bhattacharya Mechanical
Engineering Industry, Chalsa,
Dt. Jalpaiguri.



Manufacture of Tea Grading
Machine, Bhattacharya Mechanical
Eignineering Industry, Chalsa,
Dt. Jalpaiguri.

unit at Maynaguri was started in 1974, while at Matigara in 1976. Slates are used for writing in the infant classes. Fevicol, Sris-gum, Cement, Vegetable Black etc. are the raw materials drawn from Calcutta while silica is obtained from the river side of the area. With an investment of Rs. 1,000 employing 5 persons, each unit has a capacity to produce 144 pieces of slates daily. The units are functioning as cottage based industry. Besides, within the district the products have good demand outside the district also.

Manufacture of Metal products.

Light fabricated articles like grills, Iron rollers are the common activities of the existing units in North Bengal. Their capacities range from 400 to 2,000 sq. feet per month per unit depending on the size of the unit. The investment in plant and machinery range from Rs. 10,000 - 20,000 per unit with 5 to 7 persons.

The units can diversify the activities to take up the servicing and repairing of pumpsets, oil engines, tractors and automobiles.

But the common problem in the industry is the shortage of raw materials followed by non-availability of power.

Engineering Industry.

Repairing of transport equipments, and tea garden machinery, manufacturing of the garden implements cement pole



A black-smithy in operation
Dabgram, Dt. Jalpaiguri.



Black-smithy at Schooldangi,
Dt. Darjeeling.

(for electrical line), spun pipe etc. are coming under this group of industries. The growing rate of goods and passenger traffic in North Bengal have given rise the repairing of transport equipment units since 1948. These activities are, generally confined in all the urban centres. Each unit has an installed capacity to do job work Rs. 1300,000 approximately per annum and has an fixed capital investment of Rs. 250,000. They are also engaged in making the implements for tea gardens of North Bengal and repairing of machineries, sharpening of C.T.C. Roller etc. It has also been reported that the Maynaguri Engineering Work-Shop situated 20 km. away from Jalpaiguri town, has been started manufacturing the mini C.T.C. Machine since 1976. "The Bhattacharya Mechanical Industries" at Chalsa in Jalpaiguri district have started manufacturing of Tea garden machines from 1978. In view of the expanding volume of business in this industry there is enough scope for development of these small units. The cement pole factories and spun pipe factories has been functioning from 1973 in the urban centurs of Darjeeling Jalpaiguri and West Dinajpur districts.

Black-Smithy :

Black-smithy establishments have been found functing in all the ^{villages and} urban centres of North Bengal. They mainly produce agricultural implements and domestic utensils from iron sheets. They are very small units, with 2 persons investing Rs. 100 for each. They find local urban as well as weekly market centres in the villages.



Manufacture of Drum (Madal) on earthen
structure with leather.

Ghashi tribe - Schooldangi
Dt. Darjeeling.

Handi craft.

Wooden model, wooden wal-plate, wooden flower-vase, wooden table lamp, ash-tray with the horn of buffelows, decorated ornaments with white metal in Darjeeling and Kalimpong hill towns in district of Darjeeling are the famous handicraft products. Each unit with 3 or 4 family members involving Rs. 500 can produce 6 pieces of goods with the help of small hand tools. The activities are practiced by the traditional Nepali and Sikkimese people. The products have good market during the season time (April-May and October-November) specially for the tourists. The Tibetan Self help centre, situated at Bhutia Basti in Darjeeling produces jute carpet, wooden handicrafts, ornaments of stones and metals are famous for their export potentiality. The main problem of the units are lack of working capital and market. Proper assistance from the government side will enable the units to produce exportable variety of goods.

Madal-Making (Local Musical Drum).

Madal, a musical drum used by the villagers and tea garden labourers at the time of festival and ceremonial functions. The practice of manufacturing the instrument was started here in 1947 by the Ghashi and Ruidas community. The drums are made up of earthen material and leather, available within the area. The units are found functioning in Balapur in the district of West Dinajpur and Hatighisa, Schooldangi in the district of Darjeeling. Apart from the district and outside district they have been sent

to Assam also. An artisan can manufacture 1 pair of Madal within seven days with an investment of Rs. 50 with an output value of Rs. 110.

Hand Made Paper.

In 1952, a hand made paper unit was set up at Raiganj in the district of West Dinajpur. The unit started as co-operative basis by the women's Association. The main item of production are hand made paper, tissue paper, board file, cover file, duplicating paper etc. Ho/siary cutting, press-cutting, and tailor-cutting are the main raw materials, the former two articles have been brought from Calcutta, while the latter is available within the area. The unit received Rs. 9,750 from The Khaizi - Board for plants and machinery and share capital of Rs. 2,000 from the Women's Association. The daily capacity of the unit is 10 rims of paper with 10 female workers. The main problem of the unit are scarcity of raw materials, lack of working capital and local market. The products are sent to Calcutta for export.

Cane-Works.

Domestic furniture, basket, bags are the main products of these units. The cane-works of the Alipurduar town in Jalpaiguri district and Siliguri town in Darjeeling district are famous, Urban people, Tea garden and Military men are the main buyers of the products. The units are small with an employment of about 5 to 7 persons, investing working capital of Rs. 500 each. Cane, the raw

material for this industry has been drawn mainly from Assam by railway. The capacity of each unit is to manufacture 6 pieces of goods per day.

Mining and Quarrying.

The Bengal Lime Stone Private Ltd. Co. and Jainti Lime Co. were set up in 1948, at Jainti - Buxa Duar hills of Jalpaiguri district for mining and quarrying of Dolomite and Lime stone.

Dynamite has been used for blasting the big lime stone boulders, following which they are crushed into required sizes (5") by manual labour using iron-made hammer. The daily crushing capacity is 200 tonnes. The crushed limestones are mixed with coal, the proportion being 12 tonnes of limestone X 3.6 tonnes of coal. The mixture is then, heated with firewood and sent to Bokaro Steel Factory, Durgapur Steel Factory and Tata Iron and Steel Co. by road transport.

The dolomites are mined below $\frac{1}{2}$ inches but above $\frac{3}{4}$ th inches of the surface. The daily capacity to mine the dolomite is 400 tonnes daily. After mining they are transported to Bokaro Steel Factory, Durgapur Steel Factory and Tata Iron and Steel Co; Each unit has an employment of 60 labourers. The dolomite powders are used to remove the acidic nature of the cultivated are within the district. The units are suffering from transport difficulty and shortage of labour.

Stone-Crushing.

Stone crushing activities by female manual labour, using

hammer, are found by the side of the river Balason in Darjeeling district, the river Torsha, in Cocch Behar district, the Lish, the Gish, the Chel and The Tista rivers in Jalpaiguri district stone cheaps of various sizes have been used in constructing roads and barrages. Each stone crushing unit ~~are~~ consisting of 30 to 40 labourers. Apart from P.W.D. Roads Department of North Bengal, the stone cheaps are drawn to Bihar by road transport.

Besides the small stone-crushing units the Government P.W.D. Roads Department established a Stone Crusher unit by machine in 1975, at Matigara, 6 km. away from Siliguri Town. The unit consists of 9 crusher machine with a capacity of 10-12 tonnes of stone cheaps per hour, involving 29 workers. The machines are operated by diesel oil with 29.4 H.P. engines. The production is stopped since 1978 due to some internal disturbances.

Alluminium Industry.

Manufacturing of domestic utensils are the products of these units. Four alluminium factories have been functioning since 1970, 2 in Siliguri town, in Darjeeling district 1 in Raiganj town in West Dinajpur district and 1 in Malda town in Malda district. They use mainly, Waste alluminium sheets, broken alluminium goods etc. The units are small with a fixed capital investment of Rs. 100,000 involve 12, persons for each. The daily production capacity of each unit is 30 pieces of utensils. The product has a demand in urban and village areas.

Polythene bags.

The requirements of polythene bags in the nurseries of tea gardens and Sericulture farm have given rise to 3 Polythene bag making units : one unit was established at Malbazar of Jalpaiguri district, in 1975 and two units have developed in 1976 at Siliguri town in Darjeeling district. The average size of a unit, is to employ 7 persons, with fixed capital investment of Rs. 10,000, having a capacity to produce 1,000 bags daily (within 8 hours). With the growth of cloth shops within the urban market places the demand for polythene bag has been increasing day by day.

Coke-Briquettes.

Coke briquette industries have been found to develop one at Balurghat in West Dinajpur district and two at Siliguri in Darjeeling district in 1977. The industry is mainly developed depending on the demand of the product within the local area. Coke briquettes are mainly used as fuel for domestic purposes. The breeze coke, a by product of the hard coke, the by product of the paper mill and the clay soil are the main raw materials. The former has been drawn from the Durgapur Iron and Steel Factory by road transport, while the latter are obtained from Calcutta. The average capital investment of Rs. 60,000 with employment of 2 people the factories have existed. The capacity of each unit on an average is 4 mt. per day. Since North Bengal is lack in



Manufacture of Iron Rods etc.
Hindustan Rolling Mill,
Siliguri, Dt. Darjeeling.

coal as such the demand for coke briquettes has been popular mainly for domestic consumption. But the units are suffering from the insufficient supply of raw material due to heavy transport cost and frequent disturbances of electricity.

Iron Foundries.

Two iron foundries have been set up in Ektisal 4 km. away from Siliguri town in 1969. The main products of the units are the iron rods, which have been used largely in building construction and barrage construction, in whole of North Bengal districts. The main raw materials, the scrap iron and billets have been drawn from The Tata Iron and Steel Company at Jamshedpur by road transport. The factories have established with a total capital investment of Rs. 800,000 and can employ 50 persons each. The average production capacity of an unit is 12 tonnes per day. With the growth of various building construction both by the Government and private concerns in the urban sectors the demand will be increased. The units are faced the difficulties of obtaining raw materials due to heavy transport cost and labour troubles.

Rubber-Factory :

Manufacturing of cycle and Rickshaw tyre out of rubber has been established at Matigara, only 4 km. away from Siliguri town in 1974. Matigara is only 3 km. away from Siliguri Junction station, which connects Assam in the east and Bihar, Uttarpradesh

in the West by railway line. National Highway No. 31 has been passing just in front of the factory area. So from the point of view of transport the area is ideally suitable. With an employment of 35 persons investing Rs. 934,000 the factory has set up. West Bengal Financial Corporation and State Bank of India have financed the factory. The total production amounts to Rs. 212,900 during 1974-75. The products have found their market in all the North Bengal districts and Assam, besides the local market. The problems faced by the factory are the poor supply of electricity and heavy transport cost.