RAW MATERIALS AND MACHINERIES REQUIRED FOR HANDLOOM PRODUCTION

Raw Materials:

The main raw materials for the production in the handloom industry are cotton yarn, zari, silk yarns and also the chemicals and dyes required mainly for processing and colouring of the yarns.

5.01 Yarn:

Handlooms use yarn packed in straight hank form. Cotton yarns required for the handloom production in Nadia are obtained from traders or suppliers of Kolkata. Most of the fine yarn of the "Kora" variety comes from Tamil Nadu in the south. Some amount also comes from Andhra Pradesh and Karnataka. These yarns come to the state capital (Kolkata) first and are then traded to different districts. Surat in Gujarat supplies the bulk of the Art Silk, Polyester Silk and Acrylic. Sometimes the weavers obtain the yarn from their employers and mahajans who themselves buy these products either from the local market or from the wholesale market at Kolkata.

West Bengal faces an acute shortage in hank yarn primarily due to the paucity of exclusive spinning mills in the state. The few mills situated in West Bengal supply only the coarser varieties that are required only in limited amounts. The local mills located in Kalyani, Habra, Ashokenagar, Serampore, Fuleshwar and Medinipur in West Bengal are engaged in producing coarse varieties, mainly 32 to 40 count yarns. However the mills' performances are poor and are running into heavy losses. Constant labour problems also plague the mills. These mills supply yarn mainly to the Apex Society and HPDC.

The different sources for purchasing yarn for the production purpose, as obtained from the primary survey conducted in the study area, are shown in the following **Fig. 13**

It is evident that the weavers, a majority of whom are engaged by mahajans of the handloom products or other master weavers procure most of the yarn from their employers, who themselves get the supply either from the local market or from the wholesale market.

Yarns for other weavers are collected from local shops, wholesale market, mahajans of yarns and cooperatives.

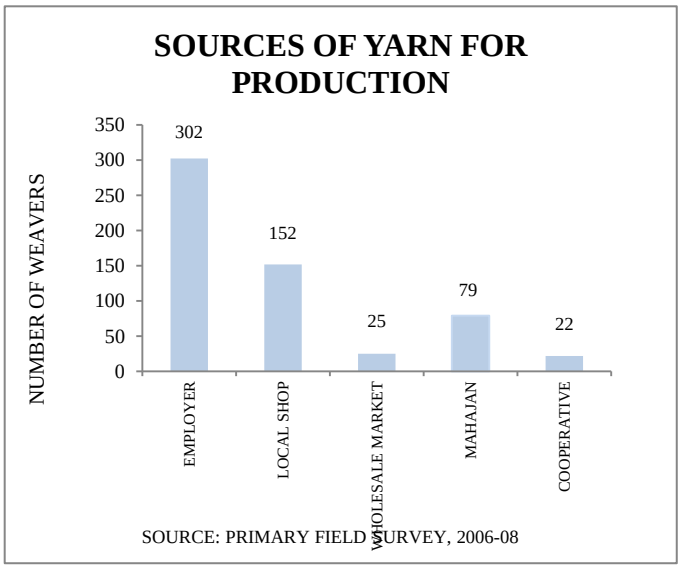

Fig. 13

Sources of capital for buying yarn for the production purpose include financial aids from banks, loans from mahajans, cooperative aids and self financing by the weavers themselves. However, financial sources from the mahajans, moneylenders and rich master weavers, which are available at very high interest rates but in a less complicated procedure than the banks, are widely in use in the study area.

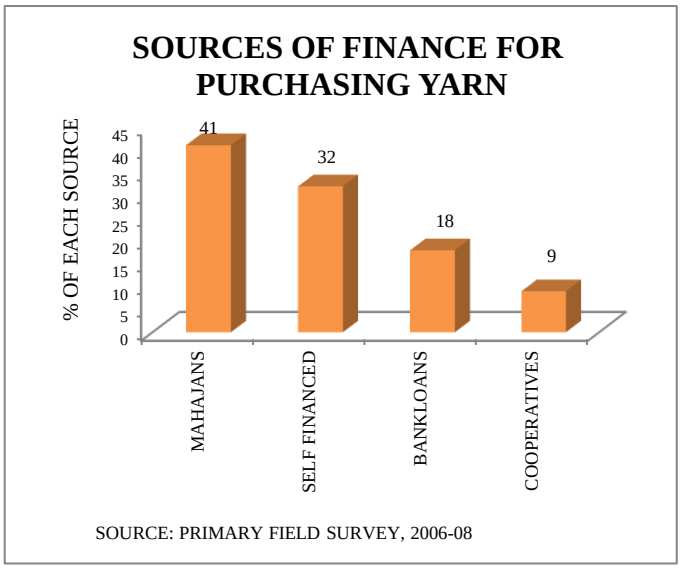

Fig. 14

Fig. 14 shows that mahajans are the most important source of finance. The relatively well to do weavers can finance themselves. Very few opt for bank loans and the coverage of the cooperatives is very limited.

In order to know the categories of buyers of yarn from the local market a primary survey was conducted. It was seen that there is a dominance of local weavers (both sellers and the hired weavers), purchasing maximum volume of yarn. Contrary to this, master weavers and mahajans of the handloom products buy lesser volume of yarn from the local market. They infact purchase in bulk from the wholesale market in Kolkata**.(Fig. 15)**

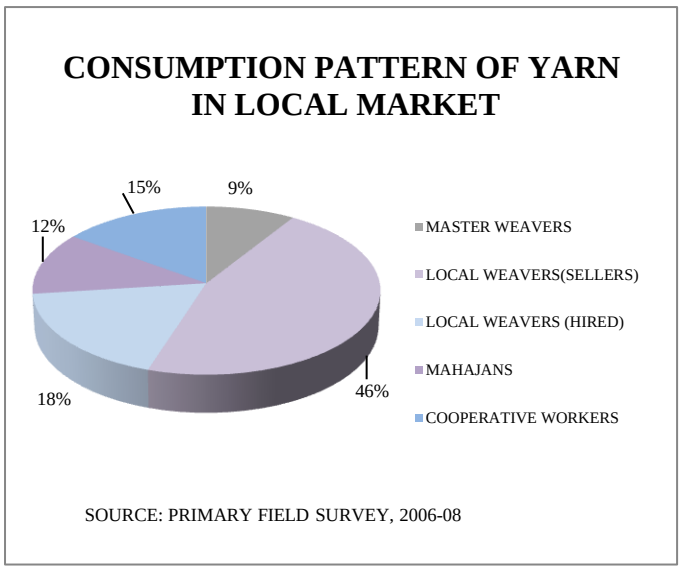

Fig. 15

The yarns from the mills come to the local producing zones via the wholesale markets and the societies. They are dyed with different dyes and chemicals and supplied to the weavers. A large amount of the grey (kora) variety is also used for weaving purposes. The Bengal weavers do not get standardized dyed yarn and the local dyeing process is not quite reliable in most of the times. However, the standard of dyed yarn is best in Fulia town of the Santipur Zone. In other places, the colours of the yarns are not always permanent and fade with successive washes.

Table 11: Price of Yarns and Associated Products

Type of Yarn	Average Whole sale price per bundle (in Rs.) (December, 2008)	Average Whole sale price per bundle (in Rs.) (January, 2012)	% Rise in price
(1)	**(2)**	**(3)**	**(4)**
100 count Double Hank Cross Reel	1250	1900	52
100 count Double Hank Plain Reel	1050	Currently not in use	_
2/100 count Twist Reel (used for borders)	1230	1850	50.4
84 count Double hank Cross Reel	940	1400	48.9
80 count Double hank Cross Reel	850	1150	35.3

(1)	(2)	(3)	(4)
60 count Double hank Cross Reel	750	1150	53.3
40 count Double hank Cross Reel	630	925	46.8
2/80 Twist Reel	1000	1400	40
2/60 Twist Reel	780	1250	60,3
2/40 Twist Reel	680	1150	69.1
Zari	20-28 per piece	Remains more or less the same	-
Art Silk	1150 per 4.5 kg bundle	1750 per 4.5 kg bundle	52.1
Polyester Silk	650 per 4.5 kg bundle	775per 4.5 kg bundle	19.2
2/40 Staple	750	1050	40
2/100 Mercerized	1550	2350	51.6
2/40 Acrylic	240 per kg	280 per kg	16.7
2/90 Acrylic	300 per kg	400 per kg	33.3

Note: Prices are subject to:

1. VATs are not applicable in yarn prices except for Art silk, Polyester silk and Acrylic.

2. The coloured yarns cost about 10% more than the kora varieties.

3. An average profit of about 2% is made in the local markets.

Source: Compiled by the Author

Table 11 shows the trend of price of yarn in the period between December 2008 and January 2012. Yarn prices in open market have been abnormally high and vary spatially as well as temporarily. Primary surveys were conducted to estimate the prices of yarns and related products. It can be seen that within a span of about three years, there has been a huge rise in the yarn prices. Though the profit in the retail market has remained constant to a marginal value of about 2%, still, an overall rise in the prices has led to the rise in the total amount of profit of the yarn traders, especially the large traders and mahajans, who tend to store the stock when the prices are low and sell them when the prices rise. However, the rise of this essential raw material has led to an increase in the production cost of the handloom stuffs on the part of the weavers and has affected the product market adversely. This has thus led to the deterioration of the condition of the weavers, especially the small scale local producers.

RAW MATERIALS REQUIRED FOR HANDLOOM PRODUCTS

Photo 7 : Bleached Yarn

Photo 8 : Dyeing of bleached yarn

Photo 9 : Drying of yarn

Photo 10 : Dyed yarn in store for products

Photo 11 : Stored Yarn in cooperative

Photo 12 : Yarns for sale in local shops

Although it cannot be denied that control over yarn prices and distribution can be effective in eliminating the dominance of private yarn traders on local and regional yarn markets, there are a few **difficulties in implementing yarn price control**. They are as follows:

- A uniform price formula for a particular count of yarn cannot be a solution even for a period of one month since the prices of yarns of different mills are not the same even for one month.
- Controls may lead to the deterioration in the quality of products.
- Under the control system, mills are reluctant to supply fixed amounts of yarn to the government.
- Black market is a common phenomenon.

5.02 Dyes and Chemicals:

Dyeing is one of the most important value addition processes in the industry. The dyeing process is either carried out by the yarn trader before selling the yarn or by the master weavers. At the cluster, i.e. local level, 60% of the yarn is sold in the grey (kora) form and about 40% is dyed before selling.

The handloom sector in West Bengal, mainly the yarn dyeing units, consumes a variety of dyes and chemicals. These dyes and chemicals are imported mainly from the states of Gujarat and Maharashtra by the wholesaling agents of Kolkata and these in turn are distributed to the handloom sector (the dyeing units) either directly by the wholesalers or through dealers located near the handloom units. The dyes and chemicals are distributed with the help of transport agencies through different modes including trucks, lorries and even trackers, vans, rickshaws and human labour operating between the states or within the state.

The main classes of dyes that are consumed in this sector for processing primarily the cotton fabrics are Vats, Napthols, Bases, Reactives, Directs and Sulphur Black. The Vats are the costliest of the lot and produces very fast and permanent colours. The Vat colours are treated with Hydrose and Caustic Soda and then boiled in huge vats or tubs and hence the name. The permanency of the colours comes after drying in open air. The Napthols and the Bases, which are generally used together, are also quite costly. The colours produced from them are about 80% permanent fading mainly by the exposure to sunlight. Napthols are not

soluble in water. They are generally treated with caustic soda before mixing in water. After the excess Napthol is removed from the yarn, the yarn is developed with bases and soaped to produce the required colour. The reactives are fairly fast colours but direct dyes are not so and fade in sunlight through washes. The permanencies of the reactives depend on the techniques of washing the yarn after dyeing. The reactives can be treated both with warm and cold water, depending upon the purpose. The Direct colors are treated only with hot water. In both cases sufficient amount of common salt is added to increase the permanency of the colours. Sulphur black is a very popular black shade and is quiet effective and cheap.

The acid colours are not used in cotton fabrics but in silk, woolen and synthetic fabrics. Common among them are the Trinitrophenol, Methanol Yellow, Cloth Red 2B, Fine BlueA etc. However, in the Nadia Handloom Zones, these colours have extremely limited use.

Very limited number of purely organic dyes is sometimes used like Organic Blue but they are not much popular due to their high price and less availability and suitability. However, in recent years, there has been a shift in interest towards dyes produced from natural objects like fruits, flowers and vegetables. New popular shades are produced in this form which has more permanency than the artificial colours and they have a high demand in market inspite of their high prices. The process of this form of dyeing is, however, time consuming and expensive.

Table 12: Types and Prices of Dyes

Major Types of Dyes	Popular Varieties	Wholesale Price/kg in December, 2008	Wholesale Price/kg in January, 2012	% Rise in price
(1)	(2)	(3)	(4)	(5)
Vats	Yellow GCN	2000	3500	75
	Brillion Violet RR	1500	2700	80
	Blue RSN (Powder : Reddish/Ultra Reddish)	1000 1200	1400 1600	40 33.33
	Dark Blue BO	800	1100	37.5
	Jade Green 2G	1000	1300	30
	Olive Green B	1700	2100	23.5
	Brown BR	2000	2700	35
	Olive T	1400	2000	42.9
	Black BB	800	1100	27.2
Napthols	AS	250	300	20

(1)	(2)	(3)	(4)	(5)
	AS-G	300	340	13
	AS-TR	500	580	16
	AS-BO	300	400	33
	AS-LB	1000	1200	20
	AS-BS	260	320	23
Base	Fast Yellow GC	150	270	80
	Fast Orange GC	200	310	55
	Fast Orange GR	200	290	45
	Fast Scarlet R	180	250	38.8
	Fast Scarlet RC	180	200	11.1
	Fast Red TR	400	490	22.5
	Fast Blue B	500	580	16
	Fast Bordeaux GP	225	300	33.33
	Fast Garnett GBC	160	200	25
Reactives	Brill Yellow M8G	220	235	36.4
	Yellow M4G	470	530	27.7
	Yellow M4R	200	230	45
	Brill Red M8B	240	275	25
	Brill Magenta MB	160	285	25
	Brill Blue MR	350	400	17.1
	Blue H.74	230	265	30.4
Direct Colours	Yellow GCH	100	120	20
	Lemon Yellow 5G	400	440	20
	Scarlet 4BS	225	245	33.33
	Red 12 B	230	240	30.4
	Congo Red	160	175	25
	Helio B	400	440	25
	Blue 2B	75	82-85	20
	Turq. Blue GL	150	165	20
	Black E	135	145-150	11.1
	Brown BRLL	180	200	11.1
	Catechine GS	180	195-200	11.1
	Bordeaux B/W	140	155-160	14.3
Sulphur Black		130	150	15.4

Note:

1. 4% additional VATs are applicable.
2. The local market prices are, on an average, 7-10% higher than the wholesale market prices

Source : Compiled by the Author

The Napthol and Base reactions are as follows:

Napthol AS + Fast Orange GC = Yellowish Orange

Napthol AS+ Fast Red GR = Reddish Orange

Table 12 shows the trend of price of different types of dyes from December 2008 to January 2012. It can be seen that the prices of dyes have also risen sharply within the span of about three years. The Vats, being the most expensive of the lot, have the highest average rise in price. Though the traders of these dyes have profited vastly from these, the weavers and the dyers engaged in the processing of yarns have suffered. The rise in price of the concerned dyes has also led to the rise in the prices of yarns. However, here it needs mention that the prices of dyes, unlike yarn, have fluctuated over these years, rather than recording a constant rise. The small scale traders suffered a lot due to this. The wholesale market at Barabazar holds traders who complain that many of their acquaintances related to this trade were forced to diversify or change their business, while some were even compelled to close down their shops due to this price fluctuation.

The chemicals that are consumed in this sector are also classified mainly into Basic Chemicals and Auxiliary Chemicals. Among Basic Chemicals are Soda Ash, Caustic Soda, Hydrosulphite of Soda, Salt (Common/ Vacuum), Diethyl and Glycol. Acids include Sulphuric acid, Hydrochloric Acid, Formic Acid, Acetic acid etc. Sodium Nitrate, Sulphate of Alumina, Sodium Sulphide, and Sodium Meta Silicate are also important chemicals that are highly in demand. Among the auxiliary chemicals are the wetting agents, softeners, dye fixing agents and various detergents.

The required dyes and chemicals of this sector are almost entirely manufactured in the states of Gujarat and Maharashtra. There are many reputed companies that manufacture dyes and chemicals of which to name a few are Atul (Products) Ltd, Dyes Star India, Meghmani Chemicals, Hindustan Ciba, Croda India, Laffani, India Glycel, IPCL, Gujarat Narmada, Vam Organics etc.

A primary survey was conducted to estimate the pattern of consumption of dyes and chemicals required for the processing of yarns.**(Fig. 16)** The dominance of the mahajans is quite evident in this regard. Most of these mahajans are very wealthy and have their own yarn processing, selling as well as weaving centres and thus control the overall process.

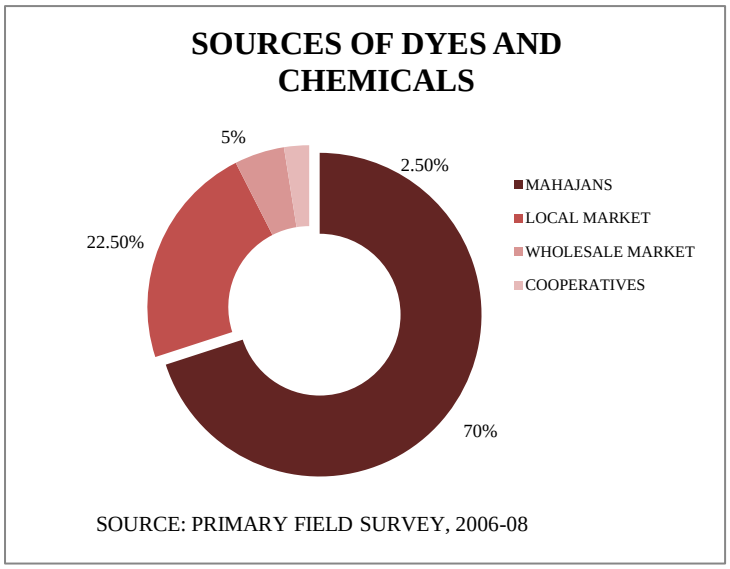

Fig. 16

Utter negligence from the government including insufficient cooperative intervention has stagnated the yarn dyeing and processing units in Nadia. Excepting a few units, techniques used in others are mostly rudimentary and unsatisfactory. The Santipur cluster alone has about 100 dyeing units, among them about 10 are technically quite advanced. The dyeing units at Fulia perform best among the lot in the Santipur cluster as they use higher quality dyes and chemicals than those used in the units of the adjacent areas. The cost of dyeing is also high in Fulia. Yarns dyed at Fulia hold their colour longer than those dyed at Santipur. Thus the products made from these yarns perform accordingly and the saris produced at Fulia cost more than that produced at Santipur.

5.03 Machineries:

Though in the initial phases needles were used for designing purposes, later "Jala", "Jhap" and "Maku" were used for designing and weaving of saris. The handloom industry of the district has about 150 loom manufacturers and accessories suppliers.

The major types of looms of the industry are as follows:

- ***Primitive Looms*** where weft is threaded by hand for interlacing the warp ends.
- ***Pit looms*** are of two kinds – throw-shuttle and fly-shuttle. Until the invention of fly shuttle. In England in the 18th century, the throw-shuttle was the most prevalent loom. Fly-shuttle pit looms produces 3 to 4 times more cloth than throw-shuttle except that it cannot weave intricate extra weft patterns. It weaves colour

bedsheets, towels, handkerchiefs, door curtains, bedcovers, quilt cloth, colour shirting, napkins, etc.

- ***Frame looms*** can weave heavy furnishing material, bed sheet of greater warp (upto 100-110" width), towels, dress material, striped check material, gauze cloth, and so on. Ordinary saris with plain border, with extra warp and cross border designs

At present, in most instances, fly shuttle pit looms of width 130-140 cm are being used with 100-150 hooks jacquard. With the exception of a few very poor weavers, who neither have sufficient capital nor are engaged by any organization or processing unit, all the other weavers, about 99%, use looms that have jacquard attachments. The machines are supplied mainly from Kolkata to the local producing areas.

Chapter 6:

TYPES OF WEAVERS AND ASSOCIATED POPULATION OF THE HANDLOOM INDUSTRY