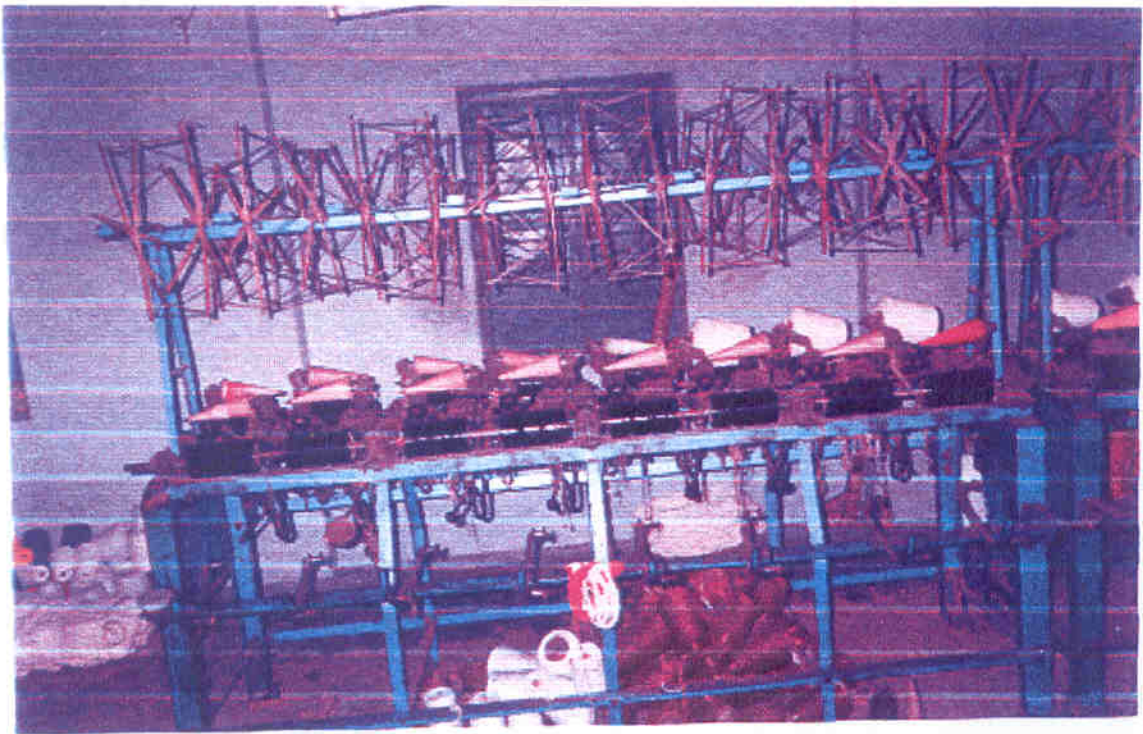


CHAPTER - 5



CHAPTER 5

Products and Production Processes

The textile products manufactured in the powerlooms are as varied and diverse in their structure and quality as that of the handloom products in the state. The powerloom sector in Tamilnadu produces a wide range of varieties catering to the domestic as well as export market. More than half of the production is in the form of grey fabrics and a significant chunk comprises of yarn dyed fabrics. In the case of the latter category of products, they are akin to the handloom products being made from earlier times. Everyone knows that the cotton shirting /dress fabrics for export garments are mostly produced and supplied by the powerloom sector in Tamilnadu and, therefore, the stakes are high for the export sector in this state. The major varieties of textiles that are being produced in the state are as indicated below.

Grey fabrics	Grey fabrics for sarees, dhotis, lungies, towels, industrial fabrics and medical textiles
	Grey gada, towels, lungies
Yarn dyed dress material	Saree
	Ladies Dress Material
	Lungi
	Shirting
	Drill
Fabrics for yarn dyed home textiles	Furnishing
	Bed sheet/Bed spread
	Towel
	Napkin

5.1 Grey fabrics production

Due to the influence of the composite mill sector located in and around Coimbatore, grey fabrics production has been more popular in this district and also a small number of powerlooms in Erode, Salem and Madurai districts. The state's powerlooms produce grey fabrics in large quantities that are meant for the requirements of domestic demand as well as exports. The grey fabrics are used for processing and finishing into sarees, dress material, furnishing/ tapestry as well as industrial fabric uses. One of the revealing findings is that the powerlooms in Coimbatore cluster produce larger amount of

industrial fabrics as reported by the units surveyed. This is an area that is getting greater focus for development further on priority basis. These grey fabrics are being produced mainly in Coimbatore cluster comprising of Somanur, Avinashi and Palladam areas. In nearby Erode areas as well as Madurai clusters, a few thousand looms are engaged in the production of surgical / bandage cloth. It is also observed that the units that are producing surgical and bandage cloth mainly in Rajapalayam and Virudhunagar areas are having sizing facilities as well as finishing as required for surgical and bandage cloth.

5.2 Yarn dyed textile items

The larger production of yarn-dyed items in the powerloom sector in Tamilnadu may be mainly due to the following factors:

- (i) Tamilnadu is a leading handloom production state where the handlooms have been producing substantial quantity of textile items. The powerloom industry is the outgrowth of the handloom industry and has thus benefited from the already existing infrastructural facilities for yarn dyeing etc. The production pattern of powerlooms has thus been based on the already flourishing handloom industry.
- (ii) Yarn dyed textiles items of traditional garments; home textiles including kitchen and bed linen etc. are easily saleable in the well-developed Erode market as well as in the upcountry markets.
- (iii) Grey fabrics have market only in Mumbai, Ahmedabad and few more places, which experience frequent changes in demand pattern. Therefore, small-scale powerloom units have greater preference for the production of coloured fabrics over the grey fabrics manufacture.
- (iv) The operation of small-scale powerloom units has been convenient for the production of coloured items as yarn bleaching, dyeing etc. are done within the units or locally available job work units. The finished coloured items hardly need any further processing. From financial angles also, it is found to be convenient for powerloom weaving units.

The looms in the clusters including Erode, Salem, Karur, and Madurai are mostly engaged in the production of yarn-dyed fabrics either as dress fabrics (sarees, dhotis, dress material etc.), made-ups, furnishings or home textiles. On the basis of our field

investigations, the following estimate regarding the number of looms engaged in grey and yarn-dyed fabrics is arrived at:

Table No. : 5.1

Loomage engaged in Different Product Groups

Sr. No.	Cluster	No. of looms			Total looms
		Grey fabrics	Yarn dyed fabrics for dresses	Yarn dyed fabrics for home textiles	
1	Coimbatore	1,39,430	-	-	1,39,430
2	Erode	42,977	38,361	26,107	1,07,445
3	Karur	-	-	28,150	28,150
4	Salem	18,486	86,931	11,583	1,17,000
5	Madurai	2,599	5,745	14,456	22,800
6	Chennai	-	21,240	1,260	22,500
7	Total	2,03,492	1,52,277	81,556	4,37,325

5.3 Loomage under different product categories

The powerloom sector in Tamilnadu produces a wide range of textiles catering to the domestic as well as overseas market. The production pattern in the powerloom sector of the state has been analysed as revealed from the number of looms engaged in the production of grey fabrics as well as yarn dyed fabrics. Most of the looms engaged in grey fabric production are found to be in Coimbatore cluster and also in a few places in Madurai and Erode clusters. The looms engaged in production of grey fabrics form about 48% of the total looms in the state. The rest 52% of the looms are engaged in the production of yarn dyed textile items of different types including fabrics for dresses and home textiles. Within this group of yarn dyed textile items, looms producing fabrics for dresses such as saree, lungi, LDM, shirting etc. are accounting for 35%. The balance 17% of the looms is found to be engaged in the production of yarn dyed fabrics to be converted into made-ups of home textiles.

Table No. : 5.2**Loomage (in percentage) under Different Product Categories**

Sr. No.	Type of fabric	% of looms engaged in the production of specified type
1	Grey fabrics including surgical/bandage cloth	47.98
	Sub-total	47.98
2	Saree	7.95
3	Lungi	8.57
4	LDM	1.37
5	Shirting and other dress material	17.49
	Sub-total	35.38
7	Bedsheet	4.36
8	Furnishing fabrics	3.34
9	Napkin	2.32
10	Towel	6.61
	Sub total	16.64
	Total	100.00

5.4 Loomage on production of yarn dyed fabrics for dresses

Shirting: In the category of yarn dyed fabrics meant for dresses, more looms are found to be engaged in the shirtings as the number of looms reporting the above production form around 17%. Salem cluster has the largest number of looms engaged in shirting production that accounts for more than 70% share in loomage terms. The Erode cluster also has more number of looms in the production of shirting that account for another 22% of loomage. Even in Chennai cluster, more looms are engaged in shirting accounting for 6%. The balance 2% loomage on shirting is found in Madurai cluster. Most of the shirting is stated to be for the export segment as 97% of the units have confirmed accordingly in the Salem cluster. In Erode cluster also, out of the units reporting the shirting production, almost 60% of the units reported to produce the shirting meant for export segment.

Lungi : The loomage on the production of lungi material is also seen to be significant which account for 9% of the loomage. Erode and Chennai clusters are having the large number of looms in the lungi material production with a share of 53.92% and 41.56% respectively of the loomage. In addition, lungi-producing looms are also found in Madurai and Salem clusters. All the production of lungi material is stated to be meant for the domestic market.

Saree : The third important textile product of the powerloom sector is seen to be sarees on which the loomage engaged is seen to be to the extent of 7.95%. Out of this total loomage, the largest number of looms is found in Salem accounting for 85.77% of loomage on sarees. The production of sarees is considerable in Madurai cluster also which accounts for another 10.49% of the saree looms. Chennai and Erode clusters have also reported the production of sarees with a share of 2.78% and 0.95% loomage respectively. All the saree production is reportedly meant for domestic market.

Ladies Dress Material (LDM): Some of the powerloom units in the state have started producing ladies dress material using the polyester filament, acrylic spun and other synthetic dyed yarns. This production is being undertaken by the units who are also producing (were earlier producing) shirting for export segment or saree for the domestic market. Mostly dobby is used for border designs, which are similar to the border designs in the sarees. The production of LDM also is seen to be present in Salem cluster where the sarees and shirting are produced for a long time in the handlooms and powerlooms traditionally. Due to the fluctuations in the market for the above two items, the powerloom units are diversifying into the production of textile items similar to the construction details of saree. The fourth important textile product of the powerloom sector is seen to be LDM on which the loomage engaged is seen to be to the extent of 1.37%. Out of this total LDM loomage, the largest number of looms are found in Salem which accounts for a share of 80.32%. The production of sarees is also is seen to be considerable in Erode cluster with a share of 19.68% of the looms. The production of the above type of textiles is completely absent in all other clusters.

Table No. : 5.3
Loomage on Production of Different Textile Items (in %)

Sr. No.	Type of fabric	Coimbatore	Erode	Karur	Salem	Madurai	Chennai
1	Grey	100	40.0		15.8	11.4	
2	Surgical/bandage cloth				0.1	38.1	
3	Dhoti						
4	Saree		0.3		25.5	16.0	4.3
5	Lungi		18.8		0.3	5.9	69.2
6	LDM		1.1		4.1		
7	Shirting		15.5		44.4	3.3	20.9
8	Bedsheet		11.3	21.1		4.3	
9	Furnishing		1.1	46.7	0.1	0.8	
10	Napkin		1.1	17.2	1.9	2.9	
11	Towel		10.8	15.0	7.8	17.3	5.6
12	Total	100	100	100	100	100	100

5.5 Loomage on production of home textiles

In the state's powerloom sector, production of yarn dyed home textiles like towel, napkin, bed linen, table linen, furnishing material etc. are seen to be substantial. Such textile products are being produced to the extent of 16.64% of the loomage.

Towel/ Napkin : The production of the home textiles items of towel, napkin etc. have been reported by a significant number of looms. As the construction details of the above items are similar to furnishing and bedsheet items, the looms are able to change their production of home textiles item as per the requirements of the exporters/ master weavers. It is seen that 8.93% of the looms account for the above two product groups. Mainly the above items are being produced in Erode, Salem and Karur clusters. In the Erode cluster, the production of towel is more prominent than napkin as the handloom sector here has been the major producer of the above items.

Bedsheets / Bedspread: In the category of home textiles, the production of bedsheets/bedspread is seen to be substantial as more than 4% of the looms have reported the exclusive production of bedsheet/bedspread only. In addition to the above, there are looms in certain units which are seen to be producing bedsheet /bedspread along with other home textiles items like towel, napkin, furnishing etc. The major production is seen to be in Erode cluster followed by Karur cluster. The Erode cluster accounts for a major share of 63.70% of the loomage on the above production. In Karur cluster, the loomage is substantial accounting for 31.16% of bedsheet producing looms. In Madurai cluster also, the production of bedsheet/bedspread is seen to be significant. The production of the above items is seen to be completely absent in all other clusters.

Furnishing Material: The total loomage accounting for furnishing material is 3.34% and it is being produced in all clusters except Chennai. The largest number of looms on the above product group is seen to be from Karur cluster that happens to be the biggest export centre for home textiles. It accounts for as much as 90% of the loomage on the above product group. In addition to the above cluster, even in the adjoining Erode cluster, furnishing materials are being produced by a considerable number of units. The above cluster is having loomage to the extent of 8% of the total furnishing material loomage. The other clusters of Salem and Madurai also have some share of the production of the above textiles.

5.6 Estimated variety wise production of textiles

On the basis of the field data, an attempt has been made to arrive at an estimate of annual production during the year 2002-03. The present estimate places the total production of different fabrics and made-ups at 4224 million (linear) metres. All these textiles being produced in the powerloom sector may be grouped under three categories as mentioned below:

- (i) Grey fabrics meant for dhoti, saree, lungi, furnishing material, bed linen, industrial fabrics, medical textiles etc.
- (ii) Yarn dyed fabrics for dresses including saree, lungi, ladies dress material, other dress material including shirting for export garments etc.
- (iii) Yarn dyed fabrics for home textiles (made-ups).

Out of the above total production, the largest textile product group is seen to be grey fabrics including surgical/bandage cloth and manufactured to the extent of 55.44%. These grey fabrics are finding market in Mumbai, Ahmedabad and other processing centres. These fabrics are generally procured by the merchants who undertake the processing of grey fabrics and are selling directly to upcountry markets.

The production of yarn dyed fabrics meant for dresses including saree, lungi, shirting etc. is to the extent of 27.36% in the total textile production. The share of the third category of yarn dyed fabrics meant for home textiles is seen to be 17.20%. The production of dyed shirtings produced for export markets are basically used for manufacture of garments. The production of yarn-dyed fabrics for the domestic market is also finding outlets in Tamilnadu and other upcountry markets. The other details may be seen in the table that follows.

Table No. : 5.4**Estimated Production of Different Textiles during 2001-02**

Sr. No.	Type of fabric	Production in million linear metres	%
1	Bedsheet	193	4.57
2	Furnishing	160	3.79
3	Grey	2232	52.84
4	Lungi	311	7.36
5	Napkin	94	2.23
6	Saree	262	6.20
7	Shirting	525	12.43
8	Surgical BC	110	2.60
9	Towel	279	6.61
10	LDM	58	1.37
	Total	4224	100.00

5.7 Value of the powerloom production

Based on expert opinions, an effort was made to arrive at an estimate of the value of the powerloom sector's total textile production. This has been done by taking the average value per metre of each variety produced and aggregating it for the equivalent production. The Tamilnadu powerloom sector produces textiles worth Rs.11, 325 crores at the weaving stage which excludes the value addition due to processing of grey fabrics.

Though Coimbatore has the largest number of looms, it ranks third and stands second to Erode in value of the textiles produced. Though the Salem cluster has the second largest number of looms, in terms of value it ranks first. It is followed by Erode cluster accounting for as much as Rs.2898 crores worth of textiles. In terms of unit value, Chennai leads with the highest that is followed by Salem and Karur clusters. The cluster wise estimated total values of production may be seen below.

Table No. : 5.5**Estimated values of production of powerloom sector**

Sr. No.	Cluster	Production in terms of value in Rs. (crores)
1	Coimbatore	2365
2	Erode	2898
3	Karur	1196
4	Salem	3462
5	Madurai	579
6	Chennai	825
	Total	11325

5.7.1 Cluster wise production estimates

It is observed from the survey data that the production of yarn-dyed textiles and also the grey fabrics are more or less equal in the powerloom sector. Though the loomage on grey fabric production is near about 48%, the fabric production accounts for more than 55%. In the case of yarn dyed fabrics, though the loomage is 52%, the fabrics produced account for only 45%. In the six clusters, the concentration of grey fabric production is in Coimbatore and, therefore, it leads in the total production.

Table No. : 5.6

Estimated production in six clusters

Sr. No.	Cluster	Production in million metres	%
1	Coimbatore	1576	37.31
2	Erode	1038	24.57
3	Karur	313	7.41
4	Salem	888	21.02
5	Madurai	216	5.11
6	Chennai	193	4.57
	Total	4224	100.00

Coimbatore cluster : In this cluster, the estimated production of grey fabrics is to the extent of 1576 million metres (accounting for 37.31% of the total) of different types including dhoti, saree material, industrial fabrics, furnishing materials and other dress materials in grey form. In very few cases, dyed yarn fabrics are also seen to be produced which is very insignificant in this cluster. Almost all the above production is of cotton material only. The estimated value of the above production in the cluster is placed at Rs.2365 crores in the year 2002-03.

Erode cluster : The total production in this cluster is estimated at 1038 million metres (accounting for 24.57% of the total) which consists of 10 product groups. In this cluster, a major portion of the production is of grey fabrics that have a share of 43.97% in the cluster's total production. The next most important item of production in this cluster is lungi material that has a share of 16.08%. Shirting, towels and bedsheets are the other major items of production having a share of more than 10% each. The estimated value of this cluster's production is placed at Rs.2898 crores during the year 2002-03. The value of the grey fabrics, lungi material and also shirting materials are seen to be more than Rs.600 crores each.

Karur cluster : The total production of textiles in Karur is estimated at 313 million metres which accounts for a share of 7.41% of the sector's production. Within the four product groups, furnishing has a major share of 46.93% that is followed by bedsheets with 20.83% share. The other two product groups of napkins and towels are having a share of 14.57% and 17.54% respectively. The estimated value of textiles produced in this cluster during the last year is placed at Rs.1196 crores. The value of furnishing materials is estimated at Rs.735 crores and the balance accounts for the other three product groups.

Salem cluster: The total estimated production of textiles in Salem cluster is 888 million metres that accounts for 21.02% of the state's total production. Among the ten product groups, shirting is the single largest item with a share of 36.88% that is followed by saree with 25.29% share. The next most important item of production in this cluster is grey fabrics, which has a share of 18.36%. Towel and ladies dress material are the other major items of production having a share of 10.26% and 5.38% respectively. The estimated value of textiles produced in this cluster is placed at Rs.3462 crores during the last year. Shirting and saree materials are to the extent of Rs.1638 crores and Rs.1123 crores respectively being the two major items produced in this cluster.

Madurai cluster: The textile production in this cluster is estimated at 216 million metres that accounts for 5.11% of state's total textile production. In this cluster, a major portion of the production is seen to be of surgical/bandage cloth that has a share of 50.97% in the cluster's total production. The next most important item of production in this cluster is observed to be saree which has a share of 12.55%. The other two product groups of towels and grey fabrics are having a share of 9.86% and 8.89% respectively. The estimated value of textiles produced in this cluster is placed at Rs.579 crores. The major item of production in value terms is seen to be lungi which stands at Rs.59 crores during the last year.

Chennai cluster: The Chennai cluster is comparatively small in size and 193 million metres of textiles are being produced annually which accounts for 4.57% of the state's total textile production. The major item of production is seen to be lungi materials that accounts for a share of 66.27% in the cluster's total textile production. The next most important item of production in this cluster is observed to be shirting that has a share of 28.29%. The other varieties being produced in this cluster are napkin and dhoti that have a smaller share. This cluster is seen to produce high value products like lungi, saree, shirting etc. and, therefore,

the total value of textile products during the last year is placed at Rs.825 crores. The lungi material accounts for as much as Rs.512 crores in the total value.

Table No. : 5.7
Estimated Production of different Textiles in 2002
(in %)

Sr. No.	Type of fabric	Coimbatore	Erode	Karur	Salem	Madurai	Chennai	Total
1	Grey	100.00	43.97		18.36	8.89		52.84
2	Surgical/bandage cloth				0.06	50.97		2.60
3	Dhoti		0.56		1.31			
4	Saree		0.38		25.29	12.55	3.26	6.20
5	Lungi		16.08		0.12	6.81	66.27	7.36
6	LDM		0.94		5.38			1.37
7	Shirting		13.07		36.88	3.52	28.29	12.43
8	Bedsheet		11.39	20.83		4.58		4.57
9	Furnishing		1.12	46.93	0.07	0.42		3.79
10	Napkin		0.88	17.54	2.25	2.50	2.28	2.23
11	Towel		11.61	14.57	10.26	9.86		6.61
12	Total	100	100	100	100	100	100	100

Table No. : 5.8
Estimated Value of Textile items Produced in 2002
(In million rupees)

Sr. No.	Type of fabric	Coimbatore	Erode	Karur	Salem	Madurai	Chennai	Total
1	Grey	23,649	6846	0	2445	288	0	33,228
2	Surgical/bandage cloth	0	0	0	10	2202	0	2212
3	Dhoti	0	174	0	348	0	0	522
4	Saree	0	195	0	11230	1355	315	13095
5	Lungi	0	6680	0	44	588	5116	12428
6	LDM	0	392	0	1912	0	0	2304
7	Shirting	0	6790	0	16375	380	2730	26275
8	Bedsheet	0	4,728	2608		396	0	396
9	Furnishing	0	585	7345	30	45	0	8005
10	Napkin	0	182	1098	400	108	88	1876
11	Towel	0	2412	912	1822	426	0	5572
12	Total	23649	28984	11963	34616	5788	8249	113249

5.8 Average production capacity and utilisation

On the basis of the data provided for monthly production of the units and also the number days worked in a month, the average production per day actually realised has been arrived at for each variety in the clusters. As also from the sample data as well as information gathered from local sources, the rated capacity in terms of metres has been estimated. Thus a comparison of the rated capacity with the actual realised output has been made.

In the case of Coimbatore cluster, as against the rated capacity of 70 metres, the actual realisation is only 43 metres. This is because of the work inefficiencies that indicate

the need for improvements in work practices as well as production technology. In Erode cluster, the same lower realisation is observed for grey fabrics production whereas in the case of yarn dyed items the difference is much less. In the case of Karur cluster, the rated capacity and realisation are much closer than in other clusters. The realised production rate is much less than the rated capacity for grey fabrics in Salem cluster. Even in the case of yarn dyed fabrics, the realised rate is much less than the rated capacity production. In Madurai cluster also, the same trend is observed. Except napkin, in all other varieties the rated capacity and realised production are closer in Chennai cluster.

Table No. : 5.9

Per day Actual Average and Rated Capacity Production

Sr. No.	Type of fabric	Coimbatore		Erode		Karur		Salem		Madurai		Chennai	
		A	R	A	R	A	R	A	R	A	R	A	R
1	Grey	42.83	70	45.50	70			35.89	70	27.97	70		
2	Surgical/bandage cloth							15.00	100	47.99	100		
3	Dhoti			20.53	50			34.00	40				
4	Saree			49.21	50			28.52	50	28.10	50	27.00	50
5	Lungi			34.44	40			12.00	40	41.33	50	34.21	40
6	LDM			34.67	40			37.69	50				
7	Shirting			33.97	40			23.88	40	38.15	50	48.36	50
8	Bedsheet			40.56	50	41.58	50			38.25	50		
9	Furnishing			41.52	50	42.32	50	20.00	40	17.35	40		
10	Napkin			32.16	40	42.96	50	34.14	50	31.20	40	14.42	40
11	Towel			43.28	50	40.95	50	37.83	40	20.42	40		

Note A: Actual average production per day per loom
R: Rated capacity per day per loom

5.9 Beam length (Batch) of different textile products

The data on the beam length also indicates the working pattern of the powerloom units. One of the strengths of the Tamilnadu powerloom sector is that they are able to produce in smaller quantities of multiple designs according to the requirements of the manufacturers. For grey varieties, the beam length is observed to be minimum of 1000 metres and maximum of 4750 metres. In the case of home textiles, it varies from 400-500 metres. In shirting, saree etc. the beam length varies from 400-1000 metres. In case of surgical/bandage cloth, the beam length varies from 300-3000 metres.

Table No. : 5.10

Beam Length details for Different Varieties of Textiles

Variety	Average	Mode	Max	Min
Coimbatore				
Grey	1022.27	1000	3000	250
Erode				
Grey	1064.23	1000	3200	350
LDM	412.5	NA	600	300
Bedsheets	373.15	400	850	200
Dhoti	970	1000	1800	350
Drill Cloth	500	500	500	500
Furnishing	393	400	500	280
Lungi	436.13	400	825	120
Napkin	560	500	800	500
Saree	650	NA	900	400
Shirting	482.46	500	1000	250
Towel	607.7	600	1000	100
Karur				
Bedsheets	425.2	500	800	170
Furnishing	426.9	400	1500	150
Grey	441.7	500	600	300
Napkin	430	400	800	300
Towel	427.9	400	725	140
Salem				
Bedsheet	100	100	100	100
Dhoti	750	NA	1000	500
Furnishing	667	500	1000	500
Grey	714	700	1000	280
LDM	396	500	500	200
Lungi	400	400	400	400
Napkin	317	250	700	100
Saree	416.3	400	1000	100
Shirting	322.6	300	1000	119
Surgical BC	300	300	300	300
Towel	411	400	1000	100
Madurai				
Dhoti	160	160	160	160
Grey	985.4	600	4750	200
Lungi	556.7	360	2000	300
Napkin	510	540	540	400
Saree	471.4	500	900	110
Shirting	822.7	500	3000	200
Surgical BC	2318.7	2000	3250	1000
Towel	828.8	1200	2200	250
Chennai				
Dhoti	400	400	400	400
Lungi	400	400	400	400
Napkin	400	400	400	400
Saree	420	400	500	400
Shirting	950	400	2400	400

5.10 Shift wise working pattern

The information obtained from the units reveal that 50% of the powerloom units in the state are operating in one shift only and another 50% units are operating in two shifts. Depending upon the type of textile items produced in different clusters, the working in single or two shifts is witnessed. In Coimbatore cluster, the looms are working almost in two shifts (barring in a few exceptions) as the production happens to be grey fabrics. In case of Salem cluster, less than 20% of the units only are working in two shifts. In Madurai cluster also, the working of looms in two shifts is seen to be less than 30%.

Table No. 5.11
Shift wise Working Pattern

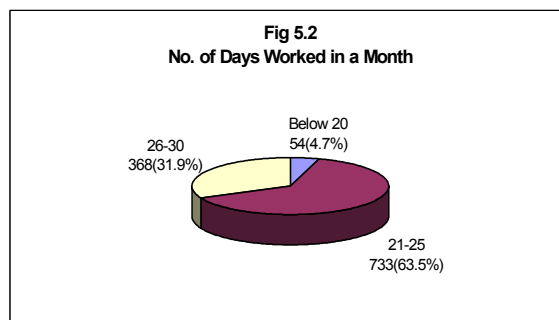
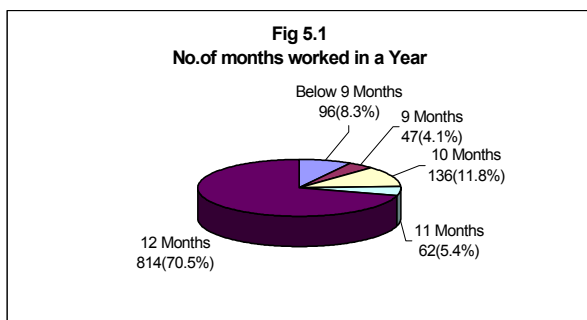
Sr. No.	Cluster	% of units	
		One shift	Two shifts
1	Coimbatore	1.85	98.15
2	Erode	36.10	63.90
3	Karur	30.92	69.08
4	Salem	82.79	17.21
5	Madurai	71.55	28.45
6	Chennai	49.09	50.91

In each of the above clusters, the reasons for the working of looms in one shift only may vary from one to other. Each cluster has got its own working pattern in one shift. The powerloom units are working on mostly job work basis and, therefore, they switch over from one shift working to two shifts if the job work available at that time is more. Further, due to restrictions on the working of powerlooms in the night in urban areas, one shift working is followed by those powerloom units, which are located in such urban areas. Further, most of the units producing sarees are found to be working on one shift basis due to the design restrictions. Hence, more number of units are working in one shift in Salem cluster which are producing sarees and shirting materials whereas in Karur cluster due to the increased demand for production, the powerloom units work mostly in two shifts. In the case of grey fabric production mostly in Coimbatore cluster, almost all the units are found to be working in two shifts. In case of Erode cluster also, more number of units are working in two shifts than in one shift. In Madurai cluster, it is observed that all saree producing units are working in one shift only. In Chennai cluster the one and two shifts working units are equally divided.

Normally if a unit is working on one shift, the number of hours worked ranges from minimum of 10 to 12 hours per day. In some exceptional cases, they have also reported upto 16 hours in areas like Karur. The units that have reported two shift working are normally having a shift of 8 hours to 10 hours.

5.11 Number of days and months worked

In the case of Tamilnadu powerloom units, almost 95% of the units have reported to be working in the range of 20-25 days in a month, which shows that the powerloom units are able to get sufficient work, and are able to run the powerlooms almost regularly. Due to market demand in areas like Somanur in Coimbatore cluster, the powerloom factories are found to work continuously without any break.



Regarding the working of the powerlooms during the year 2002-03, almost 90% of the units have reported to work for 10 months and above. Even those units, which have reported working for 12 months without interruption, form about 70%. The above data confirms that almost all the units are able to work continuously and are getting enough job work from the manufacturers/master weavers. It is also learnt from the local sources that compared to last two years, during this year, the demand is increasing substantially except in certain pockets in Karur, Erode and Salem clusters.

5.12 Number of looms attended to by a weaver

In grey fabric production, a weaver attends to normally 6 looms as there are no dobby or jacquard designs and mostly it is done in plain or automatic looms. In the case of Madurai, there is a reduction in the number of looms and one weaver attends to 4 looms only. In Karur cluster for grey as well as yarn dyed fabrics, one weaver attends to one loom only. For all yarn dyed fabrics, one weaver attends to 2 looms on an average that is

commonly observed in all clusters except Karur where only one loom is attended to by one weaver.

Table No. : 5.12

Number of Looms attended by a Weaver

Sr. No.	Type of fabric	No. of looms attended by a weaver					
		Coimbatore	Erode	Karur	Salem	Madurai	Chennai
1	Grey	6	6	1	6	4	
2	Surgical/bandage cloth				4	4	
3	Dhoti		3		2	1	2
4	Saree		1		1	1	2
5	Lungi		2		2	2	2
6	LDM		2		2		
7	Shirting		2		2	2	2
8	Bedsheet		2	1	2		
9	Furnishing		1	1	2		
10	Napkin		2	1	2	2	2
11	Towel		2	1	2	2	

5.13 Organisation of production activities by entrepreneurial, job work and master weaver units

Most of the production is based on job work pattern and, therefore, it is not an independent activity by the powerloom units but a joint production/manufacturing activity along with the sponsoring manufacturer/master weaver who supplies the yarn in the required form of sized beam or dyed hanks. In the job work units producing grey fabrics, the following production processes are being carried out:

- i) Warped beam is supplied by the master weaver which is used for weaving. No warping activity is required to be done in the powerloom unit.
- ii) From the cone yarn supplied by the master weaver, the pirn winding is carried out as required for weaving the warped beam.
- iii) Once the process of weaving is completed, the fabric is supplied to the master weaver from whom the yarn has been received. The powerloom unit receives the conversion charges as agreed upon. Presently, the conversion charges received is Rs.1/- per metre.

In this manufacturing process, the disadvantages are as listed below.

- i) Most of the units do not bother to produce the best quality fabrics with the available infrastructure and resources (job work units supply their products to their master weavers without inspection and mending processes).
- ii) Most of the units do not have facilities for inspection.
- iii) Inspection activities are not scientific to give feedback for taking corrective action in production.
- iv) Absence of warp stop motion, electronic weft stop motion etc. along with the carelessness of untrained weavers causes a lot of defects in the fabrics.
- v) Improper handling of beam/end products by weavers results in handling stain in the fabric.
- vi) Improper house keeping and non-hygienic work practices leading to foreign matters and stains in the fabric are also observed.
- vii) Absence of proper ventilation system leading to accumulation of dust, micro dust, fluffs, yarn waste etc. is also seen.
- viii) Proper ambient condition is not maintained in the loom shed.

In the job work units that are engaged in the weaving of home textiles (bedsheets, napkins, towels, furnishing etc) the following production processes are being carried out :

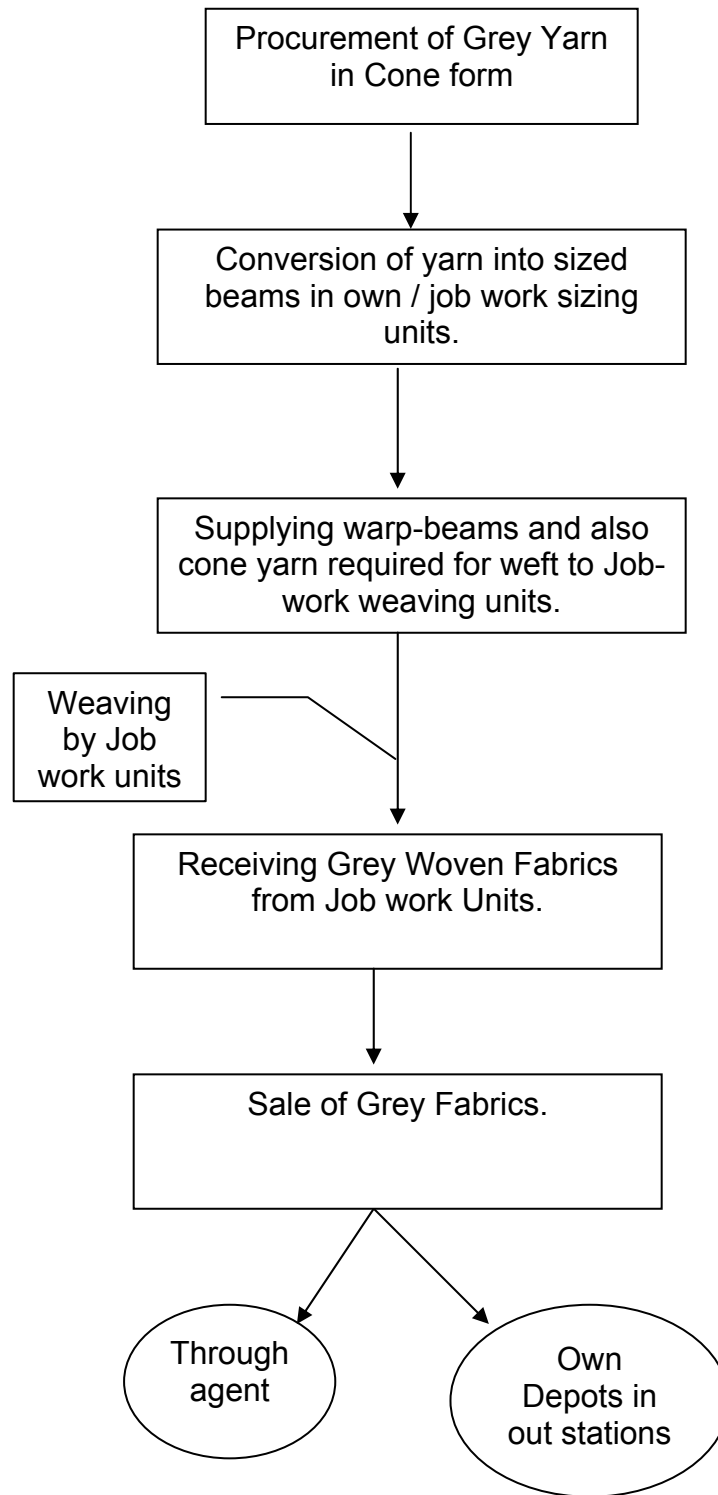
- i) The dyed yarn is supplied in hank form to the powerloom unit. This is again wound into bobbins/cones/dabbas in order to carry out the warping.
- ii) Warping is done after winding of yarn within the unit by simple warping machines and sectional method.
- iii) Pirn winding as required is being carried out in the unit.
- iv) Once the weaving is completed as per the specification of the manufacturer, the same is supplied to him and conversion charges are being received at the rate of Rs.7-10 per metre.

The production pattern followed in the entrepreneurial type units carrying out own production are :

- i) Procurement of yarn in the form of hank and/or cone from the market.
- ii) Dyeing of the yarn either in the own unit or in other dye houses on chargeable basis.
- iii) Normally no sizing is being done. In some cases, hand sizing is also reported to be carried out depending upon the type of yarn used.

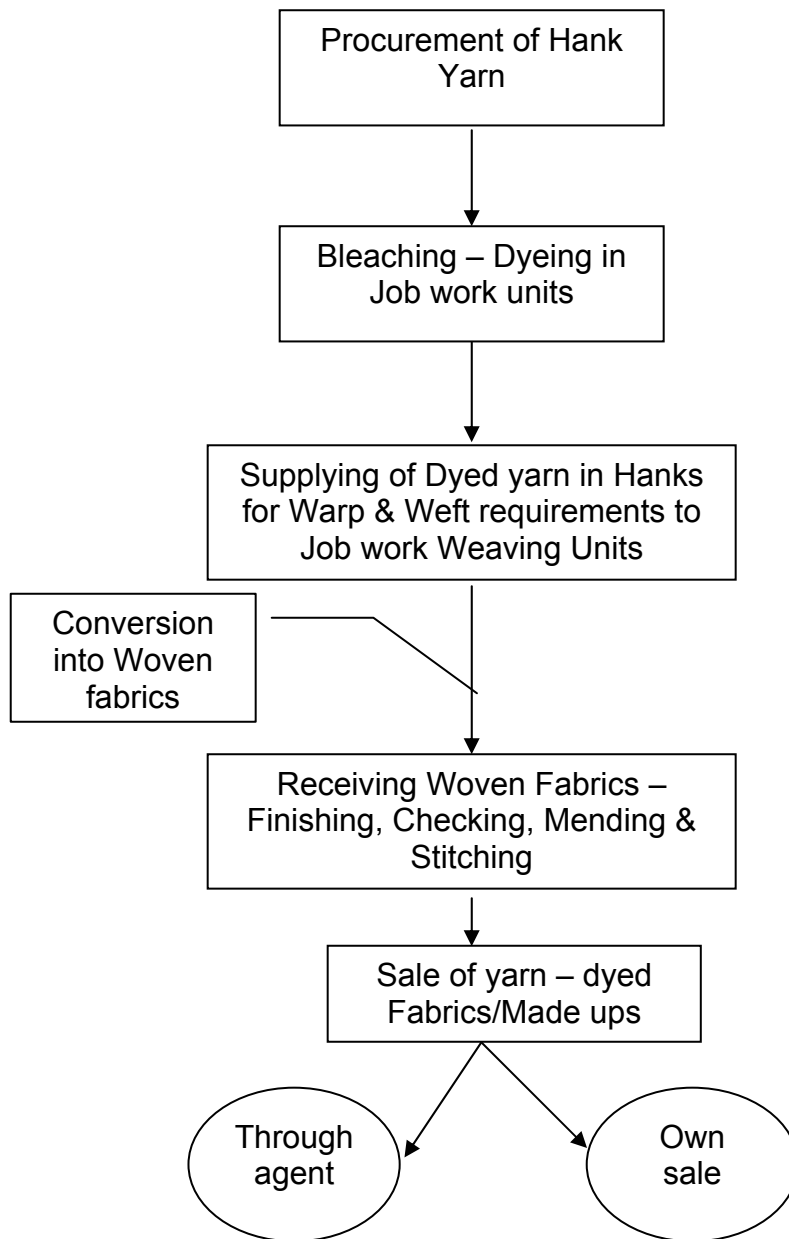
Business organisation (model –1)

Master weaver Manufacturers- Grey Fabrics



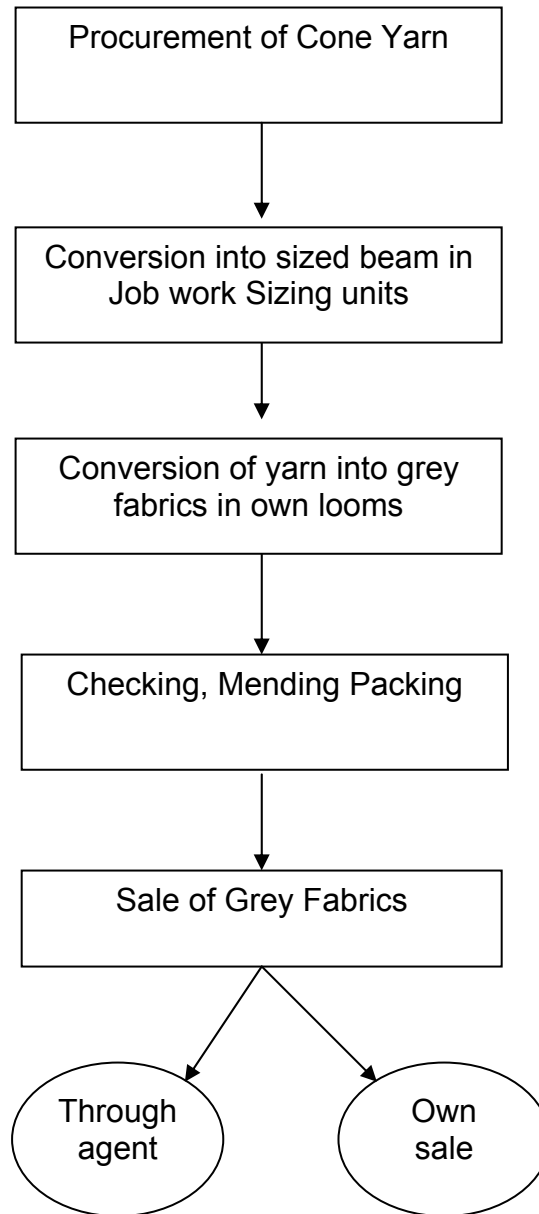
Business organisation (model –2)

Master weaver Manufacturer - Yarn Dyed fabrics for Dresses & Home Textiles



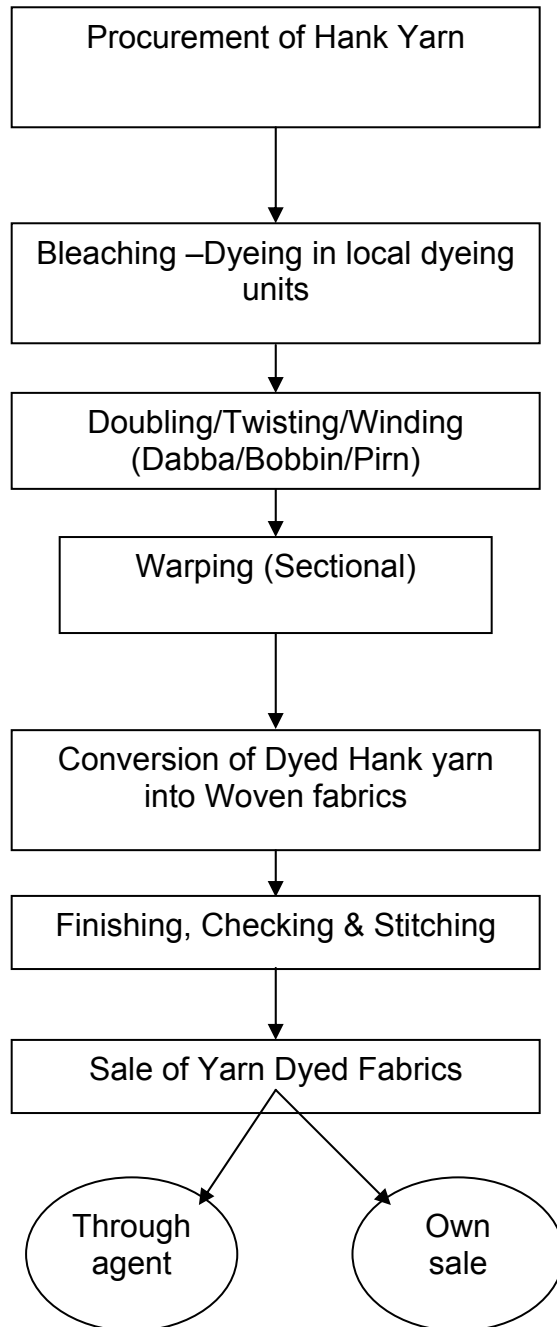
Business organisation (model –3)

Manufacturer (Entrepreneurial) - Grey Fabrics



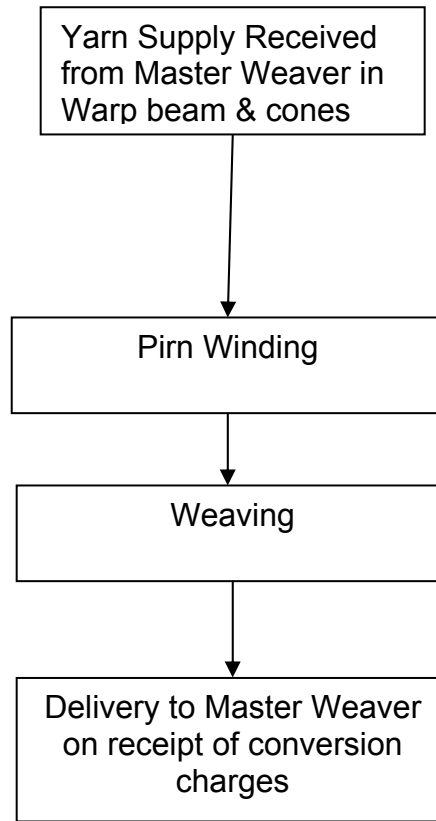
Business organisation (model –4)

Manufacturer (Entrepreneurial) – Yarn Dyed fabrics for Dresses & Home textiles



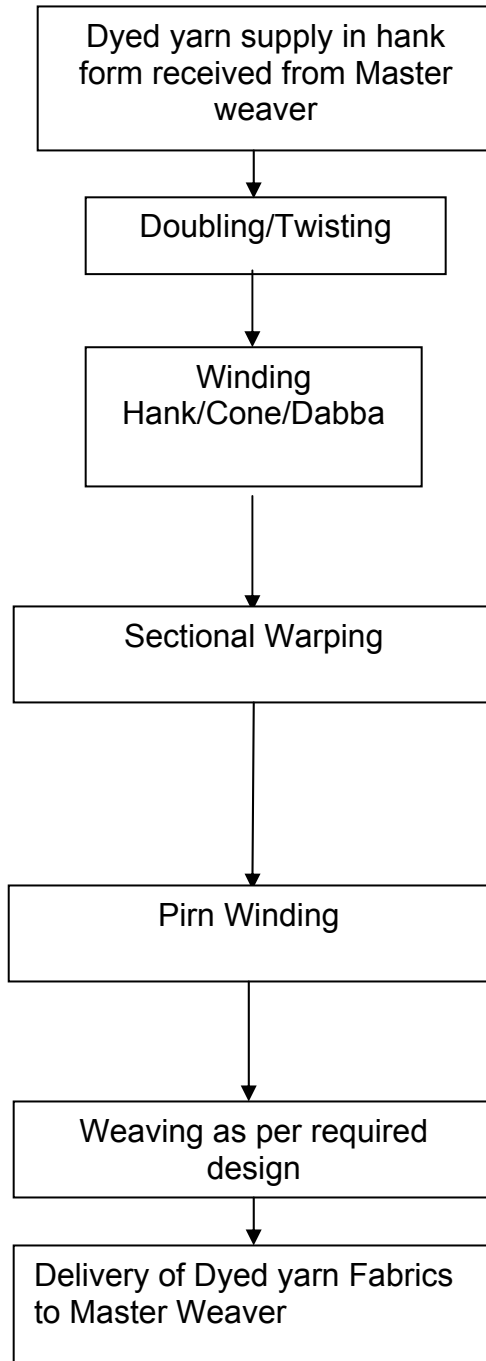
Business organisation (model –5)

Job Work Weaving Units- Grey fabrics



Business organisation (model –6)

Job Work Weaving Units - Yarn Dyed fabrics for Dresses & Home textiles



5.14 Production activities within the units

The units have provided information on the performance of different production activities that are essential for the production of fabrics. These are pre-weaving and post-weaving activities, which are not uniformly present in each and every powerloom unit in the state. The pre-weaving production activities are doubling, twisting, sizing, dyeing of yarn, warping etc. which are either carried out within the powerloom units or out-sourced from the vendors. Likewise some of the powerloom units have got post weaving production activities that include processing and finishing. Depending upon the product categories in different clusters, the pre and post weaving activities are being undertaken. In the production of grey fabrics, the pre weaving activities are limited only to pirn winding and there is no post weaving activity whereas the production of yarn dyed fabrics for dresses and home textiles involves the dyeing of yarn, sizing if required or absence of sizing, converting the hank yarn into cone yarn or winding it on bobbin/dabba for further processing in warping, preparing the warp beam, pirn winding etc. Except the dyeing of yarn which may be carried out at the level of manufacturer/master weaver, other winding and warping activities are carried out within the powerloom unit. Therefore, different types of machinery for winding, warping etc. are being used within the unit.

Almost in all the cases, the post-weaving processes are not present in the powerloom unit. In some cases, the merchant manufacturers/master weaver may go for calendering and stentering in independent process houses located in Erode and nearby areas. Such calendering, stentering etc. are done for the lungies, shirtings, sarees and ladies dress material.

Among the pre-weaving activities, few powerloom units are seen to possess doubling and twisting facilities. In such units the textile items produced happen to be sarees, shirting etc. which requires the above facilities of doubling/twisting if the type of yarn used happens to be polyester filament, acrylic etc. which need the doubling/ twisting of yarn in the manufacture of sarees, shirtings and dress materials. More such units are found in Salem cluster and also in a few units in Erode and Madurai clusters.

The dyeing of yarn is also stated to be within the units as well as got done through vendors. In most of the job work units, the dyeing of yarn is the responsibility of the

master weaver and, therefore, the job work units have not responded to the query regarding dyeing of yarn. Excluding these job work units, the other manufacturing units have replied positively. More number of units are getting their yarn dyed through vendors rather than having the facility within their units. In the case of Salem cluster, many units are seen to have recourse to dyeing of yarn from dye houses.

As regards warping activities in the units, almost all the powerloom units have reported positively to carry out the same for yarn dyed fabric manufacturing whereas in grey fabric production, the warping facility within the unit was seen to be absent. Very rarely some units have resorted to getting the warping done through vendors in yarn dyed fabric production.

In the case of processing, the reporting of dyeing of fabrics as well as bleaching etc. are being done mainly in Salem cluster and Erode cluster where sarees, dress materials, shirtings etc. are produced substantially.

Table No. : 5.13

Sourcing/Own Production Activities

Sr. No.	Production Activity	Within Unit	Through vendor	Total
1	Twisting/ Doubling	16	76	92
2	Sizing	31	121	152
3	Dyeing of Yarn	31	145	176
4	Warping	611	291	902
5	Processing	14	154	168
6	Finishing	2	71	73

5.15 Further details of processing activities

In processing activities, only few units have responded positively as the job work units are involved only in the conversion of yarn into fabric and any kind of processing to be done on the woven fabric is left to their master weavers. Therefore, all units are not having these activities. Within the responding units, it is seen that yarn bleaching is commonly done through sub vendors though some units have reported to be carrying out these activities by themselves. Likewise, yarn dyeing, fabric bleaching, fabric dyeing, fabric finishing etc. are being done through vendors whenever required by them.

In Coimbatore cluster, the processing activity carried out by a single unit is fabric bleaching. Likewise, in Chennai cluster a majority of the units have reported the bleaching of yarn in nearby processing facilities. Finishing of fabrics is reported in Erode, Salem and Madurai clusters where the production of saree and other dress materials is significant.

5.16 Variety wise reed-pick construction details, type of yarn, yarn count

The construction details are given below for major varieties that indicate the quality of the textile items being produced in different clusters.

Table No. : 5.14

Construction Details of Textile Items Produced

Dhoti

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Coimbatore	Cotton x Cotton	60,40,30	30,40	44-72 x 60-80
2	Chennai	Cotton x Cotton	60	60, 40	60 - 72 x 60 - 72
3	Erode	Cotton x Cotton	40, 42, 30	40, 30	52 - 64 x 44 - 68
4	Madurai	Cotton x Cotton	26, 30, 60, 80	26, 30, 60, 80	44 – 80 x 44 – 74

Saree

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Chennai	Cotton x Cotton	40, 60	40, 60	48 – 68 x 40 - 72
2	Erode	Cotton x Polyester	35	110 D	60 x 80
		Cotton x Cotton	40	40	52 x 42
3	Salem	Polyester x Rayon	30, 34	110, 120 D	
		Polyester x Acrylic	34, 40	100, 70 D	
4	Madurai	Cotton x Cotton	29, 31, 34, 40, 60, 80	26, 31, 40, 60, 80	52 – 88 x 50 – 88

Lungi

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Chennai	Cotton x Cotton	40, 60	40, 60, 80	68 - 90 x 72 - 96
2	Erode	Cotton x Cotton	40, 60	40, 60	64 – 88 x 60 - 76
3	Salem	Cotton x Cotton	60	60	64 – 80
		Polyester x Cotton	80	40	76 – 52
4	Madurai	Cotton x Cotton	29, 34, 40, 60	29, 34, 40, 60	48 – 92 x 48 – 96

Shirting

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Chennai	Cotton x Cotton	40, 60	40, 60, 80	68 - 90 x 72 - 96
2	Erode	Cotton x Cotton	40, 60	40, 60	64 - 88 x 60 - 76
3	Salem	Cotton x Cotton	60	60	64 - 80
		Polyester x Cotton	80	40	76 - 52
4	Madurai	Cotton x Cotton	29, 34, 40, 60	29, 34, 40, 60	48 - 92 x 48 - 96

Napkin

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Chennai	Cotton x Cotton	40	40	68 - 72
2	Erode	Cotton x Cotton	40, 60	30, 40	68 - 72 x 68 - 72
3	Salem	Cotton x Cotton	17, 40	10, 17, 40	40 - 64 x 36 - 60
4	Karur	Cotton x Cotton	17	17	40 - 36
5	Madurai	Cotton x Cotton	10, 40	10, 40	32 - 54 x 20 - 52

Grey Fabric

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Coimbatore	Cotton x Cotton	10, 16, 20, 34, 40	20, 30, 40	22 - 132 x 32 - 105
		Polyester x Cotton	45	45	72 - 70
		Polyester x Viscose	45	45	84 - 84
2	Erode	Cotton x Cotton	10, 20, 34, 40, 60	10, 20, 30, 40, 60, 80	40 - 136 x 40 - 92
3	Madurai	Cotton x Cotton	10, 20, 30, 40, 60, 80	10, 20, 30, 40, 80	60 - 100 x 48 - 80

Ladies Dress Material

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Erode	Cotton x Cotton	60	30, 60	56 - 68 x 50 - 76
2	Salem	Cotton x Cotton	40, 60, 80	30, 40, 80	56 - 68 x 50 - 72
		Polyester x Polyester	34, 80	34, 80	40 - 72 x 40 - 64
		Polyester x Rayon	80	40	72 - 62
		Art silk	80	40	68 - 68

Drill cloth

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Erode	Cotton x Cotton	17, 40	10, 60	38 – 52 x 40 – 50

Furnishing

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Erode	Cotton x Cotton	10, 17, 20, 30, 40	10, 17, 60	40 – 64 x 30 - 54
2	Salem	Cotton x Cotton	17, 30	10, 20	36 – 64 x 36 – 48
3	Karur	Cotton x Cotton	10, 17, 20, 30, 40	10, 17, 20, 30, 40	24 – 64 x 18 - 52
4	Madurai	Cotton x Cotton	60, 80	60, 80	72 – 78 x 64 – 80

Bedsheet

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Erode	Cotton x Cotton	10, 17	10, 17	26 – 64 x 20 - 56
2	Karur	Cotton x Cotton	10, 17, 20,	10	36 – 40 x 28 - 36
3	Madurai	Cotton x Cotton	17, 40	17	40 – 48 x 42 – 52

Towel

Sr. No	Cluster	Type of yarn in warp and weft	Counts of yarn in warp	Counts of yarn in weft	Reed and Pick
1	Erode	Cotton x Cotton	10, 30, 40	10, 30, 40	36 – 64 x 24 - 60
2	Salem	Cotton x Cotton	10, 17, 20, 40	10, 17, 20, 40	36 – 46 x 24 – 38
3	Madurai	Cotton x Cotton	10, 17, 26, 30	10, 20, 26	38 – 44 x 24 – 28

5.17 Processing facilities for the powerloom sector in Tamilnadu

The processing of textiles in the powerloom sector involves two types i.e., (i) the bleaching and dyeing of yarn for the production of yarn dyed dress materials and home textiles and (ii) the bleaching, dyeing and printing of grey fabrics into sarees, lungies and other home textiles. The powerlooms in Tamilnadu basically produce grey fabrics and yarn

dyed fabrics in equal quantities and, therefore, the processing facilities for processing of yarn as well as fabrics are the requirements of the industry. It may be noted here that the present availability of processing facilities is very insignificant and only the undertaking of large-scale installation of processing facilities will help the powerloom industry grow systematically in the state.

The yarn processing units are carrying out yarn dyeing along with bleaching facilities or without bleaching whereas the second category of units comprise of woven fabric processing as well as with or without yarn processing facilities. There are also some units catering to the requirements of knitwear sector as well as the powerloom industry in a combined manner having facilities for both types of fabrics.

The yarn processing is predominantly manual as these hand-dyeing units are in existence for a longer time catering to the handloom-weaving sector. The power-processing segment for yarn is of recent origin and, therefore, there are only a few such units with low technology yarn dyeing facilities. In the case of fabric processing, the number of units is very limited both in manual as well as power processing. This has resulted in the marketing of grey fabrics to a larger extent and not processed textiles from the state.

From secondary sources of information, it is estimated that there are nearly 2500 hand processing units. Also from the census of power processing units conducted in the year 2000, there are about 757 power processing units in the state. However, all these 757 power processing units are not processing woven fabrics or yarn but a majority of 531 units are exclusively processing knitted fabrics and, therefore, only around 226 power processing units including yarn dyeing units may be assumed to cater to the powerloom industry exclusively. Another noteworthy point regarding the Tamilnadu textiles sector is that due to the rapid and phenomenal growth of the hosiery sector in Tirupur, the development of processing units exclusively for the hosiery sector is taking place in Tirupur, Erode and Coimbatore areas at a faster phase rather than for the woven fabrics sector.

The development of the processing segment for woven fabrics is faced with the following problems:

(1) Water: The powerloom industry is concentrated in the Coimbatore – Erode belt that is facing the problem of water scarcity. Due to this reason, the processing of fabrics is not taking place to the required extent. Only a handful of independent processing units including the state government owned The Tamilnadu Co-operative Textile Processing Mills Ltd are located mainly in Erode that are meeting the requirements of the powerloom sector. Due to the proximity of Tirupur, and also seasonal nature of demand for processing woven fabrics, the above processing units are also undertaking knitted fabric processing.

(2) Investment: The entrepreneurs in the powerloom sector are not coming forward to go for forward integration by putting up processing facilities. As most of them are small-scale units with weak capital base and inclined to accept only job work for weaving, they lack the initiative for undertaking processing and marketing their products with higher value addition. Only cluster development efforts including the consortium approach for marketing of the finished products will provide enough fillips in the development of processing.

(3) Though the weaving of wider width cloth is picking up gradually and more and more units are installing shuttleless looms for wider width fabric production, there is complete absence of processing facilities for wider width fabrics. This is a major handicap for the enterprising entrepreneurs who have developed potential export markets for processed fabrics in the form of home textiles. In all major clusters, the processing units with wider width fabrics should be established in a significant way so that the export of value added products will be facilitated and leading to greater market share for India.

(4) Effluent Treatment Plants (ETP): Yet another aspect that hinders the development of processing/modernisation is lack of ETP facilities. The cost of putting up individual ET plants is prohibitive as well as impractical for the manual dyeing units, as these units are mostly located in residential areas. Even if the smaller units are offered common ET plants in industrial estates, the small units are not interested in shifting their units and unable make investment in land and building in the industrial estates.

The details regarding the area wise processing units of manual as well as power operated machines are as given below:

Table No. : 5.15

Cluster wise Processing of Manual and Power Processing units

Sr. No.	Cluster	No. of units		No. of power processing units for knitted fabrics only	No. of sizing units
		Hand processing	Power processing		
1	Coimbatore	150	80	504	100
2	Erode	500	53	17	100
3	Salem	300	33	6	200
4	Karur	565	35	-	50
5	Madurai	180	11	3	100
6	Chennai	260	14	1	20
7	Total	1955	226	531	570

As per available data, there are around 2000 hand-processing units that are basically yarn dyeing factories carrying out manual operation of dyeing. The number of woven fabric and yarn processing units with power operated machines are seen to be around 226 units in addition to 530 or more knitted fabrics processing units mainly located in Tirupur. The available information on the processing units of both manual as well as power operated are presented for each cluster in the following paras:

5.17.1 Processing facilities in Coimbatore : As indicated above, there are 150 hand processing and 78 power processing units in this area. Out of this 78 power processing units, 36 units are located in and around Coimbatore and the balance 32 units are located in Tirupur and nearby areas. The hand processing units is basically yarn-dyeing units which cater to the powerloom sector in addition to the handloom requirements. Also of late, many of the merchant manufacturers have initiated action to put up modern power processing units for processing of fibre, yarn as well as fabrics. Therefore, the number of processing units is increasing every day in this area. Based on the earlier census of 1999-2000, the following picture is obtained regarding the power processing units:

Table No. 5.16
Processing Units in Tamilnadu

Sr. No.	Type of material processed	No. of units	%
1	Hank yarn	33	5.67
2	Cheese yarn	7	1.21
3	Cone yarn	-	-
4	Hank & Cheese yarn	2	0.34
5	Hank, Cheese & Cone yarn	1	0.17
6	Hank & Cone yarn	1	0.17
7	Hank yarn & Woven fabric	-	-
8	Cheese yarn & Woven fabric	2	0.34
9	Woven fabric	6	1.03
10	Woven fabric & Knitted fabric	-	-
11	Hank yarn & Knitted fabric	17	2.92
12	Cheese yarn & Knitted fabric	7	1.21
13	Hank, Cheese yarn & Knitted fabric	2	0.34
14	Others (Knitted fabrics)	504	86.60
	Total	582	100.00

It is seen that 46 of the units are having facilities for yarn dyeing with or without woven fabric processing facilities and it may be assumed that they are catering to the powerloom sector only. It is also observed that there are only 6 units capable of processing woven fabrics. The majority of the processing units are concentrated in Tirupur that are dealing in knitted fabrics as well as hosiery yarn dyeing. As far as the powerloom industry is concerned, the processing is mainly of yarn dyeing.

5.17.2 Processing facilities in Erode : There are 500 manual processing units and 53 power processing units in Erode area that includes nearby centres of Komarapalayam, Pallipalayam, Bhavani etc. Out of the 53 power processing units, 32 units are located in Erode and nearby places. There are 8 units in Pallipalayam, 6 units in Komarapalayam and 7 units in Bhavani and nearby areas. Further details regarding the type of processing units in the power processing sector are as shown below:

Table No. 5.16 (a)**Processing Units in Erode Cluster**

Sr. No.	Type of material processed	No. of units	%
1	Hank yarn	16	22.86
2	Cheese yarn	2	2.86
3	Cone yarn	1	1.43
4	Hank & Cheese yarn	-	-
5	Hank, Cheese & Cone yarn	-	-
6	Hank & Cone yarn	-	-
7	Hank yarn & Woven fabric	4	5.71
8	Cheese yarn & Woven fabric	2	2.86
9	Woven fabric	10	14.28
10	Woven fabric & Knitted fabric	10	14.28
11	Hank yarn & Knitted fabric	6	8.57
12	Cheese yarn & Knitted fabric	1	1.43
13	Hank, Cheese yarn & Knitted fabric	1	1.43
14	Others (Knitted fabrics)	17	24.29
	Total	70	100.00

Out of the total 53 power processing units catering to the powerloom sector, 25 units are having yarn-dyeing facilities. Another 20 units are seen to have processing facilities for woven fabrics with or without facilities for knitted fabrics. In this cluster there are comparatively more number of fabric processing units than any other cluster in Tamilnadu. Most of these units are concentrated in Erode and also in the upcoming industrial estate at Perundurai.

5.17.3 Processing facilities in Salem : There are nearly 300 hand processing units in this cluster along with another 33 power processing units catering to the requirements of the powerloom sector. All the above 33 units are located in and around Salem. The details regarding the type of power processing units are as given below:

Table No. 5.16 (b)**Processing Units in Salem Cluster**

Sr. No.	Type of material processed	No. of units	%
1	Hank yarn	10	25.64
2	Cheese yarn	22	56.42
3	Cone yarn	-	-
4	Hank & Cheese yarn	1	2.56
5	Hank, Cheese & Cone yarn	-	-
6	Hank & Cone yarn	-	-
7	Hank yarn & Woven fabric	-	-
8	Cheese yarn & Woven fabric	-	-
9	Woven fabric	-	-
10	Woven fabric & Knitted fabric	-	-
11	Hank yarn & Knitted fabric	-	-
12	Cheese yarn & Knitted fabric	-	-
13	Hank, Cheese yarn & Knitted fabric	-	-
14	Others (Knitted fabrics)	6	15.38
	Total	39	100.00

As may be seen from above, all the 33 power-processing units are basically yarn-dyeing units and there are no woven fabric processing units found in this area. The absence of fabric processing units is a major problem for the growth of the powerloom industry.

5.17.4 Processing facilities in Karur: Karur basically is a home textile producing cluster which uses dyed yarn and therefore, the availability of yarn dyeing facilities is a pre-requisite for this region. So far, the yarn dyeing requirements are being met by 200 hand dyeing units in conjunction with 365 yarn bleaching units. Due to the increasing demand for dyeing facilities, power-processing units numbering 35 have also come up in this region. All these units are located in Karur and nearby places. Basically the yarn dyeing requirements are being met from the facilities of hand dyeing units. The details of the power processing units are as given below:

Table No. 5.16 (c)

Processing Units in Karur Cluster

Sr. No.	Type of material processed	No. of units	%
1	Hank yarn	34	97.14
2	Cheese yarn	1	2.86
3	Total	35	100.00

All the 34 power-processing units are yarn-dyeing units with cabinet dyeing facilities and only 1 unit is having cheese-dyeing machine.

Basically in this cluster only yarn dyeing is being carried out for cotton yarn and no fabric is reported to be processed in the power processing units. In yarn dyeing only hank yarn is used and, therefore, all these units are using cabinet dyeing machines. It is also reported that the 35 units process about 35 tonnes of hank yarn per day. In the case of the 565 hand processing units, the capacity per day for bleaching and dyeing are reported to be 160 tonnes each for the total units per day. Own processing is reported in 15% of the units and 85% is for job work; 20% of the yarn processed is stated to be top quality fabrics and the balance 80% for average quality fabrics.

Problems reported regarding yarn dyeing: It is reported that there is uneven dyeing particularly blues and greens. There is also shade consistency problem due to lot-to-lot variation. Most of the yarn processed is in the form of hank yarn and of coarser counts. Therefore machine dyeing in this cluster is to be for hank yarn only.

Type of dyes used and their prices: It is gathered that vat dyes (55%) and reactive dyes (35%) are used more in addition to naphthol, sulphur and other dyes (10%). The rates quoted for dyeing are as given below.

Table No. 5.16 (c) - (i)

Average Prices of Dyes

Vat – Manual	Charges in Rs. per kg.	Vat – Machine	Charges in Rs. per kg.
L Shade	75-125	L Shade	125 – 175
M Shade	150 – 200	M Shade	200 – 250
D Shade	200 – 250	D Shade	250 – 300

It is also estimated that the total processing of the yarn for the powerloom industry as a whole amounts to 8000 tonnes per month.

5.17.5 Processing facilities in Madurai: There are 180 manual processing units and 11 power processing units in Madurai area that include nearby centres of Dindigul, Theni etc. Out of the 11 units, 9 are located in Madurai and 2 units are located in Dindigul. Further details regarding the type of processing units in the power processing sector are as shown below:

Table No. 5.16 (d)

Processing Units in Madurai Cluster

Sr. No.	Type of material processed	No. of units	%
1	Hank yarn	2	14.29
2	Cheese yarn	1	7.14
3	Cone yarn	5	35.71
4	Hank & Cheese yarn	-	-
5	Hank, Cheese & Cone yarn	-	-
6	Hank & Cone yarn	-	-
7	Hank yarn & Woven fabric	-	-
8	Cheese yarn & Woven fabric	1	7.14
9	Woven fabric	2	14.29
10	Woven fabric & Knitted fabric	-	-
11	Hank yarn & Knitted fabric	-	-
12	Cheese yarn & Knitted fabric	-	-
13	Hank, Cheese yarn & Knitted fabric	-	-
14	Others (Knitted fabrics)	3	21.43
	Total	14	100.00

As may be seen from above, 9 power processing units are basically yarn dyeing units and 2 woven fabric processing units are found in this area.

In this cluster, vat and reactive dyes are being used in yarn and fabric processing units. In Theni, there are 3 units processing yarn (39 tonnes) and fabrics (291 tonnes) and they have processed 35 tonnes and 255 tonnes during the last month. The count of yarn processed for cotton hank yarn are 8s, 10s, 14s, 16s, 20s, 50s, 2/20s and 2/60s. In Madurai, the 4 power processing units are yarn (57.5 tonnes) and fabric processing (2.5 tonnes) and have processed 20.49 tonnes of yarn and 1.75 tonnes of fabric during the month. The counts of cotton hank yarn are reported to be 10s, 16s, 2/20s, 40s and 2/80s. They produce for domestic and export market. In Rajapalayam and Nanguneri, there are 2 units with 33 tonnes of yarn processing and 15 lakh metres per month of bandage cloth and they have processed 22.5 tonnes of yarn and 10 lakh metres of bandage cloth monthly. The cotton hank yarn processed are of 2/100s, 2/120s, 40s etc.

5.17.6 Processing facilities in Chennai: There are 260 manual processing units and 15 power processing units in Chennai area that includes nearby centres of Ammiarkuppam, Prodatturpet, Kancheepuram etc. Out of 15 units, 9 units are located in Chennai and nearby areas and 6 units are in Kancheepuram. Further details regarding the type of processing units in the power processing sector are as shown below:

Table No. 5.16 (e)

Processing Units in Chennai Cluster

Sr. No.	Type of material processed	No. of units	%
1	Hank yarn	1	6.25
2	Cheese yarn	-	-
3	Cone yarn	2	12.50
4	Hank & Cheese yarn	1	6.25
5	Hank, Cheese & Cone yarn	-	-
6	Hank & Cone yarn	-	-
7	Hank yarn & Woven fabric	-	-
8	Cheese yarn & Woven fabric	1	6.25
9	Woven fabric	10	62.50
10	Woven fabric & Knitted fabric	-	-
11	Hank yarn & Knitted fabric	-	-
12	Cheese yarn & Knitted fabric	-	-
13	Hank, Cheese yarn & Knitted fabric	-	-
14	Others (Knitted fabrics)	1	6.25
	Total	16	100.00

In this cluster, there are 5 yarn processing units and 10 woven fabric-processing units. Most of the yarn processing units except those located in Kancheepuram are processing cotton yarn and produce dyed yarn for the varieties of saree, lungi, shirting etc. The woven fabrics processed are lungi, saree and shirting meant for export and domestic market. These units are having dyeing and finishing facilities.

Further locational details of the processing units including manual dyeing units are as given below:

Table No. 5.16 (e) – (i)
Processing Units in Chennai Cluster

Sr. No.	Place	No. of hand processing units	No. of power processing units
1	Proddaturpet	40	-
2	Panappakkam	50	-
3	Kancheepuram	35	6
4	Arani	70	-
5	Ammiarkuppam	10	-
6	Sholingar	25	-
7	A.J. Pet	5	-
8	Sarkarpet	15	-
9	R.K. Pet	10	-
10	Chennai	-	6
11	Cuddalore	-	1
	Total	260	13

Type of yarn and fabric processed : The hank yarn and cone yarn of mainly cotton and silk are processed and dyed; 30% of the processing is own for manufacturers and 70% are for job work. All the Chennai units are processing fabrics as well as garments also.

Problems reported regarding yarn dyeing: Normally the dyeing quality is stated to be acceptable quality. Most of the yarn processed is in the form of hank yarn (95%) and of medium counts. Only 5% is reported to be of cone yarn. In the case of silk yarn, it is in the hank form and varies from 18D to 20 D for warp and 22-24 D for weft.

Type of dyes used and their prices: It is gathered that vat dyes and naphthol dyes are used. The rates quoted for dyeing are as given below.

Table No. 5.17
Payment rates for Dyeing

Type of dye	Charges in Rs. Per kg.
Vat dye	150 and above
Naphthol	250 onwards

It is also gathered that on an average 180 kgs. per day are being processed in hand dyeing units. The dyes and chemicals used in woven fabric processing, dyeing and printing units are vat dyes, reactive dyes, pigment dyes, caustic soda, sulphuric acid, sodium hydrochloride, sodium chloride, hydrogen peroxide and maize starch.

The dyes and chemicals used in yarn processing units are vat dye, soap oil, soda ash, hydro chloride acid, hydrogen peroxide, caustic soda and hydro sulphate.

The details regarding the capacity utilisation and installed capacity of fibre, yarn, fabric and made-ups processing facilities are presented in the tables given below:

Table No. : 5.18
Capacity utilisation of Fibre Processing facility in Tamilnadu

Sector		Bleaching		Dyeing		Others	
		IC	CU	IC	CU	IC	CU
Composite	Tirupur	-	-	-	-	-	-
	Others	-	-	-	-	-	-
	Total	-	-	-	-	-	-
Semi Composite	Tirupur	-	-	-	-	-	-
	Others	-	-	-	-	-	-
	Total	-	-	-	-	-	-
Independent	Tirupur	275	71	1842	62	-	-
	Others	-	-	255	3	-	-
	Total	275	71	2097	65	-	-
All	Tirupur	275	71	1842	62	-	-
	Others	-	-	255	3	-	-
	Total	275	71	2097	65	-	-

IC : Installed Capacity in tonnes

CU : Capacity Utilisation in percentage

Table No. : 5.19
Capacity utilisation of Yarn Processing in Tamilnadu

Sector		Bleaching		Mercerising		Dyeing		Others	
		IC	CU	IC	CU	IC	CU	IC	CU
SSI	Tirupur	25697	59	365	60	33124	64	-	-
	Others	2674	-	3178	-	5558	-	422	-
	Total	28371	54	3543	52	38682	61	422	30
Non SSI	Tirupur	10528	66	122	77	10331	67	731	67
	Others	5974	-	5074	-	16922	-	837	-
	Total	16502	56	5196	38	27253	61	1568	60
Total	Tirupur	36225	40	487	69	43455	67	731	67
	Others	8648	-	8252	-	22480	-	1259	-
	Total	44873	54	8739	44	65935	61	1990	78

IC : Installed Capacity in tonnes

CU : Capacity Utilisation in percentage

Table No. : 5.20**Capacity utilisation of Woven fabric processing in Tamilnadu**

Sector		Bleaching		Mercerising		Dyeing		Printing		Finishing		Others	
		IC	CU	IC	CU	IC	CU	IC	CU	IC	CU	IC	CU
Composite	Tirupur	-	-	-	-	-	-	-	-	-	-	-	-
	Others	3804	80	3003	90	1123	85	-	-	271	73	44	80
	Total	3804	80	3003	90	1123	85	-	-	271	73	44	80
Semi Composite	Tirupur	410	37	56	10	68	25	75	15	102	37	75	5
	Others	735	-	1309	-	503	-	101	-	395	22	398	-
	Total	1145	64	1365	31	571	54	176	15	497	59	473	33
Independent	Tirupur	5211	55	3295	61	5697	55	1806	51	6754	68	1263	56
	Others	3584	-	1019	-	3587	-	977	-	366	-	656	-
	Total	8795	54	4314	56	9284	54	2783	44	7120	68	1919	53
All	Tirupur	5312	54	3352	57	5765	52	1881	48	6856	65	1338	54
	Others	8432	-	5330	-	5213	-	1078	-	1032	-	1098	-
	Total	13744	56	8682	53	10978	55	2959	42	7888	66	2436	50

IC : Installed Capacity in lakh metres
 CU : Capacity Utilisation in percentage

Table No. : 5.21 (contd..)**Capacity Utilisation of Woven Fabric Processing in SSI & Non-SSI units in Tamilnadu**

Sector		Bleaching		Mercerising		Dyeing		Printing		Finishing		Others	
		IC	CU	IC	CU	IC	CU	IC	CU	IC	CU	IC	CU
SSI	Tirupur	1228	45	28	50	2752	47	115	25	797	59	328	49
	Others	1923	-	767	-	868	-	387	-	32	-	197	-
	Total	3151	45	795	46	3620	48	502	17	829	65	525	42
Non SSI	Tirupur	4084	63	3324	57	3013	56	1766	50	6059	67	1010	57
	Others	6509	-	4563	-	4345	-	691	-	1000	-	901	-
	Total	10593	66	7887	55	7358	61	2457	46	7059	67	1911	54

IC : Installed Capacity in lakh metres
 CU : Capacity Utilisation in percentage

Table No. : 5.22**Capacity utilisation of Knitted Fabric Processing in Tamilnadu**

Sector		Bleaching		Mercerising		Dyeing		Printing		Finishing		Others	
		IC	CU	IC	CU	IC	CU	IC	CU	IC	CU	IC	CU
SSI	Tirupur	34518	72	-	-	66350	72	-	-	54149	56	3892	54
	Others	-	-	-	-	-	-	-	-	-	-	-	-
	Total	34518	72	-	-	66350	72	-	-	54149	55	3892	54
Non SSI	Tirupur	200970	58	8444	47	186441	62	15416	96	36717	52	11454	113
	Others	1440	-	-	-	7818	1	-	-	-	-	-	-
	Total	202410	58	8444	47	194259	63	15416	96	36717	52	11454	113
All	Tirupur	235488	58	8444	47	252791	63	15416	96	90866	54	15346	90
	Others	1440	-	-	-	7818	-	-	-	-	-	-	-
	Total	236928	58	8444	47	260609	63	15416	96	90866	54	15346	90

IC : Installed Capacity in tonnes
 CU : Capacity Utilisation in percentage

Table No. : 5.23
Garments/ Made-ups Processing in Tamilnadu

	Bleaching		Dyeing		Printing		Finishing	
	IC	CU	IC	CU	IC	CU	IC	CU
Tirupur	-	-	-	-	102	76	446	83
Others	3940	-	620	-	-	-	8676	-
Total	3940	79	620	55	102	76	9122	82

IC : Installed Capacity in 000' pieces

CU : Capacity Utilisation in percentage
