CHAPTER II

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CHAPTER II
PROFILE OF THE STUDY AREA

2.1 INTRODUCTION

In this chapter an attempt has been made to describe the existing profile of the Indian textile and knitwear industry, in Tamilnadu at a micro level. A brief profile of Tirupur is also described at the macro level along with the nature of its export practices.

2.2 PROFILE OF INDIAN TEXTILE INDUSTRY

Textile industry is one of the main pillars holding the Indian Economy. It constitutes about 14 percent of industrial production, 20 percent of total export earnings, 4 percent of GDP and direct employment to an estimated 35 million people. In spite of these, India's entire share in the world textiles trade is still maintained at around 3 percent. The Indian Textile industry is broadly divided into wool industry, silk industry, cotton industry, linen (flax) household linen industry, dyeing, printing, finishing industry and tan industry. The clothing division includes knitwear industry, hosiery industry, clothing (making up) industry, leather goods industry, footwear industry and accessories industry. Mills, power-loom and handlooms constitute three independent sectors of the Indian Textiles Industry

EXHIBIT -1
DIVISION OF TEXTILE INDUSTRY
The mill sector is organized, mechanized and modernized concentrating on the production of yarn whereas the power-loom and handloom sectors have remained technologically backward and stagnant. Almost all the spun yarn made in India comes from the organized mill sector, reflecting the highly capital intensive nature of spinning yarn. Weaving in the mill sector has been gradually suffering due to the competition from the power-looms and this trend may continue. Most of India’s competitors in textiles in the world market have a much larger number of shuttle-less looms. The hosiery sector caters mainly to the inner garment requirements.

The highlights of the sectoral features of Indian Textile Industries are shown below in table number: 2.1.

**TABLE – 2.1**

SECTORAL FEATURES OF INDIAN TEXTILES INDUSTRY

<table>
<thead>
<tr>
<th>Sector</th>
<th>Features</th>
</tr>
</thead>
</table>
| Mill         | • Highly capital intensive  
               • Operates in both spinning and weaving  
               • Uses both natural and man-made fibers  
               • Organized sector  
               • Spinning is the predominant process,  
               • Uses spindles, looms and rotors. |
| Power loom   | • Highly decentralized  
               • Caters to the fabric requirements  
               • Uses both cotton and non-cotton yarn  
               • Produces both gray and processed fabrics  
               • Weaving is the predominant process  
               • Mainly uses shuttle looms |
| Hosiery      | • Highly decentralized  
               • Caters mainly to inner garments  
               • Uses both cotton and non-cotton yarn  
               • Knitting is the predominant process |
| Handloom     | • Highly decentralized  
               • Handloom technology is regionalized  
               • Operates as household units  
               • Hand weaving is the predominant process  
               • Mainly uses all natural fibers |
However, there are certain concentrations of skills and product type that have developed over the last thirty-odd years. Western India including the states of Gujarat and Maharashtra have a number of spinning units as well as composite mills. Also in the west, the Surat belt is known for polyester fabrics, which forms the proximity of large polyester yarn suppliers. Surat's industry has been a fast-growing supply for the domestic market and, starting with the Middle East, it has steadily grown its exports also.

The south, including the Salem-Erode belt, is a hub for cotton fabric. While it dramatically grew in the 1980s and 1990s as a belt of small-sized 'unorganised' mills, many companies here have recently become more sophisticated in their technology and product development.

In the apparel sector, Ludhiana, Tirupur, Delhi, Bangalore, Mumbai and Chennai are all remarkably unique and dynamic centers of production. For example, Tirupur in south India, formerly a small town, is today a stronghold of cotton knitwear with annual exports of about US $ 6-7 billion dollars. Ludhiana, in the prosperous northern state of Punjab, originally built its strengths in woolen knitwear through exports into the former Soviet Union. After a brief break in the early 1990s it regained its dynamism, and is now a supply hub for sweater knits to some of the largest fashion brands in the US and in Europe.

Delhi, the leading export centre for apparel in volume and value, leads also in design and merchandising skills, with smaller and flexible production quantities. Chennai (Madras), on the other hand, is more geared towards large and well-established factories producing large quantities of basic products, while Bangalore is growing in more engineered products including tailored clothing and fashion garments.
Obviously, this gross generation about industry is only indicative of the relative strengths of the various locations, as individual companies with comparable or greater strengths do also exist outside these concentrations.  

2.2.1 Contribution of Indian Apparel Industry

The apparel industry is one of India’s largest foreign exchange earners, accounting for nearly 16 percent of the country’s total exports. In the year 2006-07 Indian textile exports approximately amounted to US$ 14,441.76 million of which apparel occupied over US$8,688.80 million. It has been estimated that India has approximately 30,000 readymade garment manufacturing units and around three million people are working in the industry. Today not only is the garment export business growing, enthusiasm in the minds of the foreign buyers is also high. Today many leading fashion labels are being associated with Indian products. India is increasingly being looked upon as a major supplier of high quality fashion apparels and Indian apparels have come to be appreciated in major markets internationally. The credit for this goes to Indian exporter community.

Consistent efforts towards extensive market coverage, improving technical capabilities and putting together an attractive and wide merchandise line has paid rich dividends. But till today, Indian clothing industry is dominated by sub-contractors and consists mainly of small units of 50 to 60 machines. India’s supply base is medium quality, relatively high fashion, but small volume business.

Recent recession in Europe and South Asian currency crisis have also contributed their own bits to the decimating Indian exports. Though these are expected to fizzle out soon, there is no reason for complacency on the part of Indian exporters or of the garment industry. The industry will be soon faced with open competition without any quotas or tariffs.
Thus the need of the hour is to enlarge both manufacturing as well as the marketing base. Inculcation of a spirit of innovation by way of research and development and tapping new markets especially in South Africa, Central Africa, CIS, East European countries, Latin America and Australia is also mandatory for export growth\textsuperscript{50}.

Given the fact that considerable section of Indian garment industry is confined to the 'unorganised' or 'informal' sector, conditions under which workers labour law's are hardly subject to the legal realm. Further, given the predominance of ‘informal’ sector activity, legislation with regard to labour markets are less likely to be enforced as compared to other economies\textsuperscript{51}.

2.3 PROFILE OF TEXTILE AND APPAREL INDUSTRY IN TAMILNADU

Textile industry is one of the traditionally well-developed industries in Tamilnadu. It has a strong production base and accounts for about one third of Textiles production in the country. The net value addition in Textile industry in Tamilnadu is about 37.5percent, the highest in the country. Textile mills are concentrated in Coimbatore (Manchester of South India), Rajapalayam, Karur and Erode. Tamilnadu has around 1,400 textile mills of which spinning mills account to 650 units with an installed spinning capacity of well over 13.0 million spindles. The position of textile industry in the state is summarised hereunder:
TABLE – 2.2
THE POSITION OF TEXTILE INDUSTRY IN TAMILNADU

<table>
<thead>
<tr>
<th>Sector</th>
<th>Composition (%)</th>
<th>Capacity of production in percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textile mills (powerloom)</td>
<td>44</td>
<td>11</td>
</tr>
<tr>
<td>Spinning mills</td>
<td>33</td>
<td>35</td>
</tr>
<tr>
<td>Hosiery units</td>
<td>23</td>
<td>54</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Besides the above, Tamilnadu has around 3,50,000 power looms manufacturing Cotton fabrics. Tamilnadu accounts for about 30 percent of India's export of textile products. In the garments sector, Tamilnadu has more than 4,500 registered exporters concentrated mainly in Chennai and Tirupur. While Chennai is specialising in export of woven garments, Tirupur has emerged as a major center for knitted garments. During 1999-00, Tirupur and Chennai together exported materials valued around US $ 3.5 billion.

EXHIBIT - 2
TIRUPUR IN TAMILNADU
Government of Tamilnadu is currently in the process of evolving a Textile Policy to give an impetus to this vibrant industry. Specific infrastructure support is the major objective in the proposed state policy on the development of textile industry. Tamilnadu offers a number of competitive advantages to textile industry and the new textile policy aims at consolidating these inherent advantages. In the post-liberalisation era, Tamilnadu has attracted investments to the extent of Rs.10.24 billion in the textiles sector; of this, Rs.5.3 billion is committed in manufacture of cotton and blended textiles, whereas the balance in synthetic textiles\textsuperscript{52}.

Coimbatore city is known for its entrepreneurship of its residents. Coimbatore is the third largest city in Tamilnadu, with a population of more than 15 lakhs. There are more than 30,000 tiny small, medium and large industries and textile mills. In spite of its prominence as a bustling industrial city, Coimbatore still remains one of the most pollution free cities in India. Covering an area of 254 square kilometers, it has some of the renowned industries of India. The major industries include textiles, textile machinery, automobile spares, motors, electronics, steel, and aluminium foundries. Tirupur – until recently a part of Coimbatore district and a neighbouring town, has carved a niche for itself in the garments market\textsuperscript{53}. 
EXHIBIT - 3
TIRUPUR AND COIMBATORE DISTRICTS

LOCATION OF
TIRUPUR
COIMBATORE

* Tirupur Municipal Area

TIRUPUR
NILGIRIUS DISTRICT
KERALA STATE DINDIGUL DISTRICT

KARMAKAI
ANNUR
AVINASHI
S.S.KULAM
SULUR
PALLADAM
PONGALUR

TIRUPPUR
THONAMUTHUR
MADUKARAI
KINATHUKADAVU
GUDIMAN GALAM

POLLACHIRI(P)
POLLACHIRI(S)
ANAMALAI
UDUMALPET

VALPARAI
KERALA STATE

ERODE DISTRICT
DINDIGUL DISTRICT
2.4 PROFILE OF TIRUPUR KNITWEAR INDUSTRY

Tirupur, a small township 60 kilometers away from Coimbatore in Tamilnadu is probably the hallmark of the success stories of Indian clusters. This township which started with the production of low valued cotton hosiery items, mainly the undergarments during the 1920’s started with exports from the year 1974. Since then, it has not looked back and the exports during the year 2006 touched a figure of Rs.8000 lakhs contributing almost 38 percent of the country’s exports in this sector. It is estimated that the industry in Tirupur employs 200,000 persons directly and indirectly.

There are 10,000 units in Tirupur knitwear cluster, of which small unit comprise of some 7,010 units, compared to the national and international standards. There is a high degree of subcontracting relationship among them due to the nature of operations. Almost 80 percent of the firms are exclusively working as subcontracting units, particularly for manufacturing the hosiery cloth. The cluster reflects a high degree of specialization in most areas including machinery supply besides every area of the manufacturing operation. Innovative services such as pre-production checks, initial and during production checks, product consultancy, laboratory testing, sourcing assistance are provided by several enthusiastic entrepreneurs that helps the industry galvanize.

The role of several industry associations is commendable as they help these firms by playing quasi-judiciary role to settle various intra and inter firm disputes besides procedural formalities, information assistance and the lobbying role with the government. Among them, Tirupur Exporters Association is the most dynamic one which has several achievements to its credit during the last 6 years of its operations.

The government institutions have also played a useful role in supporting the industry. However, the most important growth factors are proactive
marketing, adaptation to the latest technology, inter-firm production arrangements and an active social system. Some of the major issues that concern this industry for the sustainability of growth in the future relates to infrastructure and organization. Water scarcity, electric power supply and increasing pressure on the roads have put considerable strain on the industry growth. With the firms increasingly moving towards higher value addition, quality and design inputs are becoming more crucial.  

Tirupur Exporters Association has undertaken some initiatives with the help of government and non government agencies to overcome the deficiencies and built capacities to prepare the industry for future growth. The local service suppliers are also geared to provide linkages with the international arena by providing access to the global information and latest machinery. The industry has grown considerably over the last one decade and the future now looks promising.  

2.4.1 History and Performance of the Tirupur Cluster

It is said that the small dusty township of Tirupur now a district by itself breeds millionaires. The geographical location of Tirupur on India's map is reflected as given in Exhibit No.3. The township of Coimbatore is well known for electrical machinery, spare parts, metal products and other machinery products. Entire district of Coimbatore has a total of 70 Medium and Large scale units with Rs. 532 crores worth of investments, of which Tirupur has 9 of them with a capital outlay of Rs. 76 crores. The hot climate suited the bleaching and dyeing operations for the knitted cloth. With several thousand small scale units, this industry provides direct and indirect employment to estimated two lakh persons in all the skilled, semi-skilled and un-skilled categories although according to Apparel Export Promotion Council (AEPC) and Tirupur Exporters Association, this figure is around 3 lakhs. There are very few medium scale units since the product is reserved for manufacturing in small scale sector. Availability of good quality cotton in the surrounding region
and hundreds of cotton yarn mills around are inherent basic strengths of the industry. Direct exports from Tirupur were in the order of Rs. 1,448.76 crores (approximately US $ 425 million) during the calendar year 1995. This accounts for 42 percent of India's total exports in this industrial segment.

Tirupur has been described as a 'boom town' whose growth is based upon cheap labour and, a tradition of cotton weaving and inter-firm production arrangement. During the last five years, the population of this town has more than doubled to five lakhs inclusive of the villages in its periphery. There has been a large scale migration of people from villages and other surrounding regions and with the growth of industry the township has also outspread to the nearby villages. Here, tiny and small sized firms have successfully brought about innovations and improved their efficiency.

Tirupur was the second town in India to start a unit in this industry after Calcutta. Even though knitting came to Tirupur in 1920s, progress worth mentioning took place only after 1935 when the first hand-operated hosiery firm was set up. The number of knitwear firms went on increasing. It was over 100 in 1953, 450 in 1960 and about seven thousand in 2005. Since agriculture was not flourishing due to poor rainfall, the industry served as a source of alternate employment. The low investment required hand operated knitting machines, easy availability of raw material and yarn from the neighbouring Coimbatore town helped the entrepreneurs set up their manufacturing base, and keep on widening that.

Till the late 1960s, this industry produced mainly the grey and bleached vests. In 1974 the first export consignment was shipped abroad with the support from 'National Small Industries Corporation' (NSIC). From 1980 onwards, some of the entrepreneurs also began to produce T-shirts for exports. Some Mumbai and Delhi based exporters established their sub-offices at Tirupur which led to further acceleration in exports.
Some of the producers at Tirupur also developed independent contacts with foreign buyers. Meanwhile, the Tirupur producers turned also to the country's domestic market for cotton vests. Soon need was felt for further diversification into fashion garments which required improvement in quality. With their focus on diversification & quality control and strength of direct connections with foreign buyers, entrepreneurs brought about sudden changes in the production technology which revolutionized the industry. It was in 1990s that along with undergarments, the manufacturers produced quality outer-wear. The cluster, now into multi product cotton knitwear, produces T-shirts, cardigans, jerseys, pull-overs, ladies blouses, skirts, trousers, sports wear and industrial wear. The exports increased many times reciprocated by a corresponding faster inflow of foreign exchange. With the implementation of liberalization, the awareness about new technologies and import of high technology capital equipment has taken a surge.

2.4.2 Factors influencing paradigm shift in Tirupur Cluster's Growth

In the eighties, four significant changes took place, namely-

- The dominance of Tirupur as supplier of vests and briefs to the domestic market declined with the growth of hosiery industry in many parts in Northern India.
- The demand for T-shirts in the international markets was picking up and hence the scope for exports widened.
- Developed countries were shrinking their garment making capacities for various reasons and commenced sourcing garments from developing countries that could make and supply garments at comparatively cheaper prices due to a number of inherent advantages that they had in terms of raw material, labour cost and so on.
- The second generation entrepreneurs who had inherited the management of hosiery factories were ambitious, gauged the potentials of export markets efficiently and boldly ventured into international business.
2.4.3 Flexible specialization of SMEs

Tirupur had tiny and small-scale enterprises with very low capital base, and so most of the firms did not have the resources to set up bleaching and dyeing facilities. Some enterprising youngsters sensed the opportunity to cater to the wet processing needs of the emerging industry and set up bleaching and dyeing factories. The manufacturing activities thus got divided into two segments broadly, that is, those having knitting and garmenting facilities and those having wet processing facilities. In course of time, the industry got further stratified and today for every single processing/manufacturing activity—knitting, bleaching, dyeing, mercerizing, compacting, raising, printing, drying, embroidery, etc., there are a number of independent operators doing job work for firms who approached them.

2.4.4 The advantages of this segmentalised growth are

- Small scale enterprises have predominantly one-man-shows. It was easy for them to control their manufacturing process and become an expert in that activity.
- Expanding and modernizing were possible within individual’s financial resource availability.
- There was no need for developing expertise in product marketing, which is the most difficult and critical task for SMEs.

Leading exporters have set up their own processing facilities and even spinning mills as a measure of backward integration. But every production or processing facility was set up as separate legal entity and the practice of big processors having spared specialized facilities, undertaking job work for others is a common phenomenon in the cluster.

It is this flexible specialization that has been a major contributing factor for the outstanding performance of Tirupur knitwear cluster.
2.4.5 Sketch of the SMEs, other Enterprises and Institutions

At the center of the Tirupur hosiery cluster are the cotton knitwear garment exporters who are either 'manufacturer exporters' or 'merchant exporters'. The non-exporting manufacturers undertake sub-contracting tasks mainly for the exporters of both the categories mentioned above and in addition they market the knitwear for domestic market. There are a number of different types of agents and traders who facilitate the marketing activity. These are selling agents, depot sales agents, commission agents and general merchants. In Tirupur, the marketing agents have a strong role to play. They have developed specialization in different geographical market segments, domestic and overseas, as also in product based segments. Further specialization has developed to the extent that there are agents who market only the rejected goods and the export surplus material. The cluster map of various actors in Tirupur is shown in Table below. There are varying estimates for the total number of units according to different agencies. According to 'District Industries Center' report, there are 7010 registered Small Scale industrial units in Tirupur, of which 5515 are engaged in producing hosiery garments while another 576 produce hosiery cloth. It is estimated that almost 80 percent of the units are engaged in job work only. Besides all these, there are a large number of ancillary and supporting units that manufacture buttons, printed labels, polythene bags, plastic tapes and other packing materials.
## TABLE – 2.4
COMPOSITION OF TIRUPUR KNITWEAR CLUSTER BY SMEs

<table>
<thead>
<tr>
<th>Type of units</th>
<th>No. of Unit</th>
<th>Percent of composition</th>
<th>No. of Employment Generated</th>
<th>Percent of composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hosiery Garments</td>
<td>5515</td>
<td>78.67</td>
<td>74822</td>
<td>86.28</td>
</tr>
<tr>
<td>Hosiery Cloth</td>
<td>576</td>
<td>8.22</td>
<td>3945</td>
<td>4.55</td>
</tr>
<tr>
<td>Bleaching</td>
<td>70</td>
<td>1</td>
<td>821</td>
<td>0.95</td>
</tr>
<tr>
<td>Dyeing</td>
<td>171</td>
<td>2.44</td>
<td>1903</td>
<td>2.19</td>
</tr>
<tr>
<td>Calendering</td>
<td>74</td>
<td>1.06</td>
<td>572</td>
<td>0.66</td>
</tr>
<tr>
<td>Screen Printing</td>
<td>258</td>
<td>3.68</td>
<td>2829</td>
<td>3.26</td>
</tr>
<tr>
<td>Embroidery</td>
<td>12</td>
<td>0.17</td>
<td>92</td>
<td>0.11</td>
</tr>
<tr>
<td>Mercerising/Raising/Curing</td>
<td>14</td>
<td>0.2</td>
<td>109</td>
<td>0.13</td>
</tr>
<tr>
<td>Other Allied Units</td>
<td>298</td>
<td>4.25</td>
<td>1312</td>
<td>1.51</td>
</tr>
<tr>
<td>Export Oriented Units</td>
<td>22</td>
<td>0.31</td>
<td>316</td>
<td>0.36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7010</strong></td>
<td><strong>100</strong></td>
<td><strong>86721</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: District Industrial Center Report

In the service industry, there are both forward and backward linkages especially in relation to input supplies and distribution. According to the estimates of DIC, there are likely to be another 750 unregistered Small Scale units which do not figure into the given table. Many of them may be in the area of bleaching and dyeing where registration due to difficulties with pollution control does not make them eligible for registration and thus other state sponsored facilities.

In terms of employment generation, the direct employment generated is estimated to be one lakh skilled, semiskilled and unskilled workers while other one lakh persons are estimated to be earning their livelihood due to this industry. These indirect activities relate to the forward and backward linkages within the industry such as cotton ginning, yarn spinning, specialist tailoring, calendering, packaging and other related service activities. Among the 7010
units, it has been estimated that there are 150 integrated units with a much higher capital investment than most of the Small scale units.

The main raw material in the form of cotton yarn of different thickness is supplied by the agents of hundreds of spinning mills located in Coimbatore, Salem, Erode and other adjoining cities. Several mills have set up their sales depots at Tirupur to provide raw material on ex-stock basis. Besides, there are also several cotton yarn merchants in Tirupur and Coimbatore. Speciality stores, selling accessories such as buttons, zips, laces and sewing threads are there in a large number in Tirupur itself. Similarly the dyes and chemicals that are manufactured mainly in Gujarat and Maharashtra are available through companies' sales depots and through merchant dealers in Tirupur, itself.

The manufacturers of the circular knitting machines and dyeing machinery are mainly located in Punjab, specifically in Ludhiana and Amritsar. With the introduction of new technology, imported machinery has been in a widespread use in Tirupur. The commission agents and dealers for both indigenous and imported machinery are based in Tirupur providing access to the latest models available world-wide.

Conducive to the need of export market, innovative service enterprises have been set up by private entrepreneurs. These services are targeted at exporters, suppliers, manufacturers, buyers, importers and the retailers that help their customers to reduce their risk, improve efficiency, provide inputs for cost control implement and ensure compliance of the mutually agreed quality systems. For example, the range of services provided to importers may comprise of pre- production checks of exporting enterprises, initial-production checks, during-production checks, final random inspection, status reporting, container loading supervision, damage survey, product consultancy, sourcing assistance, factory assessment and laboratory testing. This helps to bridge the gap between the manufacturer and the buyer and to create a greater degree of confidence in the marketing channel.
2.5 ROLE OF ASSOCIATIONS

The supportive role played by the various associations in Tirupur knitwear cluster are discussed in this section.

There are seven sub-sectoral industry associations in Tirupur. For example, the dyeing & bleaching units have their separate association. With firms inter-related through common control, entrepreneurs could end up becoming members of more than one association. Besides, more than one association may be looking after the interests of same category of members.

There are a number of local representative institutions and support bodies, as well as initiatives on the part of the State, that have had an important impact on the development of the knitwear sector in Tirupur. There are, for example, various macro support strategies for small scale industry in India which also apply to this sector. These provide tax benefits and subsidised credit. There is, however, no empirical evidence on Tirupur of the impact that these SME benefit packages have provided to local small producers.

Their continued importance, though, is partially reflected in the practice of firms splitting up at reaching certain size thresholds. In terms of more targeted institutional support to the local knitwear industry, a few organisations stand out: the Textiles Committee under the Ministry of Textiles, Apparel Export Promotion Council (AEPC); the South Indian Hosiery Manufacturers’ Association (SIHMA), Tirupur Exporters Association (TEA) that represents the city’s knitwear exporters; and Knit Cloth Manufacturer’s Association (KNITMA).

Leading Industry Associations

1. Tirupur Exporters Association (TEA)
2. South India Hosiery Manufacturers Association (SIHMA)
3. Tirupur Export Knitwear Manufacturers Association (TEKMA)
4. Tirupur Dyers Association (TDA)
5. Tirupur Screen Printing Association (TSPA)
6. Tirupur Narrow Tape Manufacturers Association (TNTMA)
7. Tirupur Cloth Stitching Section Association (TCSSA)
8. Indian Hosiery Yarn Mills Association (IHYMA)
9. Tirupur Cotton Merchants Association (TCMA)
10. Tirupur Merchants Association (TMA)
11. Coimbatore District Powerloom Cloth Dealers Association (CDPCDA)
12. Tirupur Powerloom Association (TPA)
13. Tirupur Hosiery Yarn Merchants Association (THYMA)
14. The Knit Compactors Association (KCA)
15. South Indian Imported Machine Knitters Association (SIIMKA)
16. Knit cloth Manufacturers Association (KNITCMA)

These institutions have rendered lot of services in the development of this industry.

The **Textile committee's** main objective is to ensure the quality of textiles and textile machinery both for internal consumption and purpose.

The Textiles Committee, as corollary to its main objective of ensuring the quality of textiles and textiles machinery has been entrusted with the following functions:

i. To undertake, assist and encourage, scientific, technological and economic research

ii. To establish standard specifications for textiles, textile machinery and the packing materials.

iii. To establish laboratories for the testing of textiles and textile machinery

iv. To provide training in the techniques of quality control.
v. To provide for the inspection and examination of textiles and textile machinery
vi. To promote export of textiles
vii. To collect statistics and
viii. To advise the Central Government on all matters relating to textiles and textile machinery, etc.

In Tirupur, the Textiles Committee has created an excellent impact on the industry through continuous and timely interventions. It is involved in almost all the value chain activities and maintains relationship with all the Industrial Associations. It is seen by the industry as a dependable and most active Government body by the Tirupur Exporters.

The Apparel Export Promotion Council (AEPC) acts both in a regulatory as well as a promotional role in the local knitwear industry. The AEPC was set up in 1978 by the union government to stimulate export growth and act as advisor to buyers, exporters and government. It had in the mid 1980s over 6,000 members who were all exporters, and had set up regional offices in various locations, including Tirupur, to provide support at the doorstep. In Tirupur, the AEPC has a dual role: to administer the export of garments via the management of a quota system, to deal with implications of bilateral trade agreements in force with importing countries and secondly to promote the export of Indian garments. The AEPC also sponsors buyer/seller meetings, organises trade delegations, individual sales tours and sets up market survey teams. The council collects trade data, both locally and from abroad, and is particularly active in seeking out markets in countries where India's exports are not quota bound (such as eastern Europe, Latin America, and East Asia).

Tirupur Exporters Association (TEA) is a dynamic association, formed in the year 1990 with 500 direct members. TEA offers lot of value added services to its members like technical skill upgradation through NIFT-TEA,
arranging contact with buyers through IUF, disseminating market information
government policy changes through their bulletin and Emails.

The achievement of TEA includes establishing an inland container
department India Knit Fair Complex for conducting trade fairs, Tea public
school for fashion institute by signing a MOU with NIFT. Some of the special
assignments taken up by them are:

❖ Apparel park of 65 units in a 175 acre land
❖ Promotion of a common brand to gain differentiation advantage
❖ Strengthening and widening the road both NH-47 & NH-67 for
carrying transportation and movement of goods.

South India Hosiery Manufacturers Association (SIHMA) is one of the
oldest association established in 1951 with 60 export members and 1200
domestic members assisting them to get financial assistance from the banks and
financial institutions. On the procedural front, assistance is also provided in
getting the registration certificate of small-scale industry, RBI code, export
import licence issued. It also files legal suits in courts and represents on behalf
of their members. SIHMA offered various HRD training programmes in the
following areas:

❖ Women entrepreneurship training through SISI
❖ CAD course for exporters
❖ Skill upgradation courses for merchandisers in pattern making, quality
control
❖ Facilitating ISO certification through BDI providers

Tirupur Dyers Association was established in the year 1985. Currently,
it is operating with 750 members, assisting them through advocacy on policy
issues. It also acted on a principal body in setting up of eight common effluent
treatment plants. It has coordinated with Textiles Committee for various skill
upgradation programmes for the capacity building of its members.
2.6 ISSUES OF GOVERNANCE

The issue of governance of Tirupur and the Textile Industry revolves around the growth pattern of this town over a period of time. The discussions with some of the social activists in the town shows that the growth of Tirupur is mainly because of a community oriented growth. Any kind of Stereo type interventions which have a mismatch with the community expectations were found to be futile. This may be one of the reasons because of which the industry associations have a strong governance role in shaping up the development of the city.

It has been observed that all the activities of the town, from a small tea shop to a big department store revolve around the knitting industry and associated activities. As has been mentioned earlier about the infrastructure development, it can be seen that all Government initiatives are in one way or the other being taken up by the Industry Associations.

The Industry Associations are contributing a lot for the social development including provision of basic amenities like water. On the social front, the industry provides large scale employment to women which has given opportunity for women from other districts and neighbouring Kerala State to migrate to this place. In the garment industry, due to the nature of job and social acceptance, it is found that women are more suitable on the shop floor. However, capacity utilization of these garment units by running three shifts becomes a problem with a increase in the number of women who have the household responsibility to discharge.

Some of the governance issues which are hampering the growth of the industry and quality of life are as follows:

i. Lack of health centres and hospitals for the people. Though, there are primary health centres which can provide basic medical
facilities, this becomes important in a town where the working population is very high and incidents of industrial accidents are high.

ii. The growth in the industry demands specialized training institutes to provide advanced skills. Currently, though there are institutions in the nearby areas like Coimbatore, the need for establishment of skill development institutions with requisite exposure on IT advancements should be looked at.

iii. Commuting within the city is one of the major problems reducing the quality of life of people. Though, the industrial associations are trying to address this problem, it should be remembered that the associations are mainly to develop business rather than providing only social services. Hence the local Government and the State Government should take up this issue on a priority basis. This issue has been raised in various platforms for years together without any result.

iv. As the number of working women population is high in this town, community centres and hostels are required especially in the wake of increasing Non-Tariff Barriers in the international Trade on social security measures. Currently, the individual units are trying to provide this kind of support which is not adequate.

2.7 NATURE OF BUSINESS OPERATIONS IN THE CLUSTER

The nature of the business operation carried out in Tirupur knitwear cluster is discussed below.

2.7.1 Marketing

From being the producers of basic Knit garments for lower end of the domestic market, Tirupur knitwear cluster has today a diversified production range comprising T-shirts, polo shirts, sportswear, sweat shirts, ladies dresses,
children's garment, nightwear, etc that are exported to various markets worldwide.

(i) Nature of Domestic Market

Domestic market for the hosiery products, particularly for the conventional undergarments, comprises of an estimated 250 million consumers. Despite the large size of market, much of the demand exists mainly for the low quality and low value added products in the cotton knitwear segment. In fact, introduction of the concept of ready-made garments which includes hosiery products is a comparatively recent phenomenon probably beginning from the early 1980's. Even this is largely limited to the metropolitan cities and major towns. Outer wear garments such as jerseys, pullovers, trousers, night dresses, sports wear and ladies blouses made of knitted fabric does not form a part of Indian dress, conventional or modern. Most of the reputed brands of Tirupur such as Crystal, Rupa, TT, Lyrill, VIP, Gopal, DSP, Dawn, Liberty and Tan Tex can therefore be related by the domestic consumers with their undergarment products mainly.

(ii) Nature of Export Market

Knitted garments find their market all over the world and the consumers belong to all age groups from children to the aged. Diversification to the export market mainly in T-shirts but later also in other items such as jerseys, pullovers, cardigans, ladies blouses, dresses, children wear, sports wear, night dress, swim wear, bed linen, industrial wear & non apparel products like gloves has been therefore a logical step for the industry for a higher value addition. Export market that the industry has expanded their demand, comprises of most of the countries of European Union, United States of America, Canada, Japan, Middle East and a few other countries. The unit value realization from the exported products has increased over a period of time as also due to improvements in quality. Secondly, the industry has complied with the changing fashion tastes of the consumer market.
(iii) Market Intermediaries

The Tirupur knitwear cluster has become much differentiated and contains firms of quite different capabilities producing for quite distinct markets. The smallest of the firms sell to small local markets and make simple garments; comparatively larger firms sell geographically to more distant places in the domestic market through intermediaries and also undertake job-work for the export markets. The established bigger manufacturers produce garments for direct exports. These differentiated types of firms and segmented markets give rise to a number of different types of agents and traders in the industry such as selling agents, depot sales agents, merchant workers (commission agents) and other merchant dealers, some of them with their respective fields of specialization.

(iv) Market Structure

Most of the production in Tirupur is now targeted for the export market. With this, apparel designing along with quality improvements has become an important parameter for success. This in turn has its influence on the production technology and demand for such machines that are flexible enough to produce various types of combinations. In order to take advantage of the low costs and keep a close check on the quality for their consignments, some of the importers and merchant exporters have stationed their representatives at Tirupur itself. This close interaction between market agents and manufacturers results, directly or indirectly, in product standardization, maintenance of quality and intense price bargaining. Sometimes, the agents or their representatives also seek assistance from the locally based testing laboratories for matters pertaining to technical aspects.

The major problem that existed with regard to exports is the quota restrictions and the trade regulations under Multi Fiber Agreement. The merchant exporters who are based in metropolitan cities manage to obtain
substantial part of the total quota available to India on their past performance on exports.

In the post-quota free era Tirupur based manufacturers want to expand into exports, some of them find it stifling, due to the open market condition. Besides this, there exist common problems related to the export market when the buyers or suppliers are unable to meet their financial, technical or commercial commitments. This leads to cancellation of orders even after most of the processing has been completed which may take 30 to 90 days. In Tirupur, it has led to the development of a separate market for the export surplus items that are then bought at cheap rates by some merchants, specialized in this line of activity. These consignments are then sold in the domestic market through their distribution channels.

The development of Inland Container facility in Tirupur has helped the exporters in a big way. Chasing the goods to distant places where the port facility existed, unloading the material and getting them reloaded into the container was a big problem for the exporters. With the inland facility, it has saved the exporters of such inconvenience, loss of precious time and other resources. The development of packaging industry has also helped significantly in improving the handling and forwarding of goods.

Despite a commendable export performance of the cotton hosiery industry in India, its share in the international market remains an insignificant three percent. The demand potential is therefore quite high. The industry faces competition in the international arena from Yugoslavia, Slovenia, Croatia, Turkey, Israel, Malaysia, Indonesia and the neighbouring countries like Bangladesh, Pakistan and Sri Lanka. Secondly, the value addition per piece which has increased significantly from its previous level, is still way below the international potential. The quality goods supplied from Tirupur are exported mainly under the brand names of the importers. Recently, however some of the merchant exporters have also taken initiative to get their own brands
propagated. Also, despite the diversification of units into new product segments, the predominance of production remains in the low and basic knitted garments such as T-shirts.

2.7.2 Apparel Design

The designs for garments are usually provided by the buyer importers. There are few large exporters who have set up their in-house facilities for developing new designs which help to add value to their product. However, most others who wish to add this activity into their portfolio are unable to do so since private institutions providing such specialized services do not exist.

(i) Raw material availability

One of the strengths of the cluster comes from the fact that cotton produced in the region is of a superior quality. Availability of the quality raw material, cotton yarn, for the industry is ensured since the state of Tamilnadu itself has maximum number of spinning mills in India. Coimbatore, the adjoining city of Tirupur is called the Manchester of South India due to availability of related skilled labour, several spinning mills and good quality textile machinery which is produced there. The spinning mills association sometimes regulates the prices of yarn leading to fluctuation in the prices of yarn. This may be the result of fluctuating cotton prices depending upon the yield and availability of raw cotton.

(ii) Labour

People come from rural areas around Tirupur to work. The wages are settled based on piece rates. A 12 hour (one and a half shift) six days working week is not unusual in firms when export commitments need to be fulfilled on time. This also provides them with the incentive to earn more at the end of the day. When production schedules are especially tight, labourers are called upon to work 16 to 18 hours a day. Women, young boys and girls are considered for less skilled jobs. In general, workers have become highly skilled in the course of working in a number of different jobs. The general wages for the permanent
workers are settled in consultation with the representatives of the labour and the employers by the local associations taking into account the government regulations, inflation and length of service.

It is also a common practice that the entrepreneur for getting a specific job done in one of its sister concerns under the same umbrella organization network employs a job-work contractor for the assignment. The contractor then acts as a production manager and is also responsible for recruitment and working of the labour. This arrangement, called 'in-contracting' helps the entrepreneurs rid themselves of the responsibility for detailed production management of the operations. Since the owner deals separately with one contractor each in his sister concerns, he also manages to side-pass several labour regulations concerning state insurance or provident fund etc.

The wages and bonus, settled by the contractor in such cases are in accordance with the local norms and statutory minimum wages. Subsequent revisions in the wages are paid in line with the government policy. Average worker earns well as per the prevailing standards. Importers in the industrially developed countries have shown an aversion to the products made in firms employing child labour. With this, the Tirupur Export Association has taken up a proactive role with the result that it is a common sight to see sign boards on the gates of firms declaring non-employment of child labour. This seems to have worked especially with the exporters.

(iii) Production

The production system technically comprises of four operations organized around different firms. These are (a) Knitting of cotton yarn to make grey fabric, (b) Bleaching & dyeing of grey fabric (c) Fabrication of garments and (d) Printing & finishing.
The four stages are explained as under

a. Knitting

The cotton yarn obtained on the cones is mounted directly on the circular knitting machines manufactured either by several small firms in Ludhiana, Lakshmi Machine Works limited, Coimbatore or elsewhere abroad, in that order of increasing flexibility of designs, speed and quality of output. Technological developments have helped simultaneous usage of different colors and weights of the yarn in the more sophisticated machines. Some of these developments are introduction of multi-track cone combination, usage of different types of needles, introduction of multi feeder points, independently controlled positive feeder and technically upgraded stop motion when a yarn thread breaks in between. It is mainly the imported microprocessor controlled circular knitting machines that allow changes in the type of design patterns on the fabric. As many as 82 different machines are used in knit garments and 20 machines are used in processing for ready made garments.

For every diameter size of the grey fabric so produced in the form of loop, equivalent diameter size of the knitting machine has to be used. This implies that in order to produce 10 different diameter sizes of the loop fabric, ten different circular knitting machines of those sizes will be required. Although Ludhiana made machines, especially the second hand ones, do not entail high capital investment for each machine, it is still not considered feasible and beneficial to set up a complete range of various sizes of knitting machines in one firm. There are almost 2,000 knitting units that take up subcontracting jobs. This is the first basic cause of subcontracting phenomenon. While the low end producers of under-garments with no specific design requirements would use the Ludhiana made machines, the higher end ones producing patterns of designs on the fabric would invest in the expensive but fast machines from LMW, Coimbatore or abroad. The cloth so knitted is marketed in rolls. This forms the first and the basic process in garment making.
The knitting machines once set to knit yarn into fabric keep operating automatically unless the thread breaks in between and the operator then has to tie it before starting the machine again. One operator may therefore be able to manage 10-12 machines together. The type of indigenous machines used are named as interlock circular knitting machines, rib interlock machines, singer body machines and spindle bobbing winding machines. The quality of fabric so obtained depends upon the density of knitting measured by count and thickness of yarn measured by weight per unit area. The other quality control parameter is loop length that measures the linear length of yarn in a knitted loop. It is also important to ensure dimensional stability of the fabric to washing. The feel of the knitted fabric much depends on the twist of yarn used, which measures the spiral turns given to a yarn in order to hold the constituent fibers or thread together. Low twisted yarn is always preferred for knitting. From the consumers view point, these technical characteristics provide uniformity, flexibility, low friction, elasticity, smoothness and strength.

b. Bleaching & dyeing

Bleaching the grey colour of the knit fabric is essential for the dyeing process. This process involves mixing of bleaching powder in water through which the grey fabric is made to pass. There are various other chemicals used as well. Almost sixty percent of the bleached fabric requires dyeing and it accounts for almost 10 to 15 percent of the cost of finished garments. The most essential requirements for dyeing are getting the correct shade on the fabric as per the buyer's specification and its colour fastness. Any deviation thereof may lead to rejection of the lot and entail losses for the dyers.

The skills of dyeing master are therefore crucial in the process that mixes various base dyes to get the correct shade. This hit and trial method of mixing to get the correct shade leads to a loss of dyes to the extent of 50 percent. The dye-Master would normally stay within the factory premises to take care of any contingencies in the operation and control the process.
parameters. The most important machinery used in the process is a simple winch machine. Other supporting equipments required are a boiler and a big tank with an open furnace. About 10 litre water is taken per kilogram of cloth and pre-dissolved diluted dye-stuff is added to the tank with the cloth rotating on the roller winch continuously. In almost two hours of time, the dye-stuff is completely absorbed by the cloth which is then rinsed with fresh water, and treated with a few other ingredients and detergents. The complete cycle time is 6 to 10 hours. The quality of dyeing is also determined by the hardness of water used. Pre-dyed yarn is not often used.

The major problems that the 600 bleaching and dyeing units face is the scarcity of water for which the firms have to buy water in tankers from the adjoining villages. Almost 600 lorries of water each priced at Rs. 300/- provide water daily to the industry. This has its effect on the cost of operations equivalent to almost Rs. 1.80 lakhs per day to the industry. The scarcity of water itself has arisen due to shrinkage of ground water level because of its over drawing with the phenomenal growth of industry. Secondly, the water available has become so polluted that its hardness measured in salt content has gone upto 1400 PPM whereas the required level is below 350 PPM. So it is found unfit for the operations. The state pollution control board has issued notices for the closure of units or else installing necessary pollution control equipment.

Most of the units have now undertaken steps for installation of common effluent treatment plants. A separate private company called 'Kasipalayam Common Effluent Treatment Company' (KCETC) has been floated to set up one such plant. It has approached the state government to facilitate a tie up with international agencies like UNDP, UNIDO or European Union for technical collaboration and economic assistance. Besides, the industry has demanded for restoration of 50 percent of subsidy for the construction of treatment plants. A request has also been made for duty-free import of equipment and machinery.
required for such projects because many dyeing and bleaching units do not have sufficient resources to meet the required expenditure.

The other problem relates to the new international regulations that affect the choice and usage of certain types of chemicals and dyes. Knowledge about these chemicals, testing methods to detect them and finding suitable alternatives is beyond the capabilities of most of the firms. For example, Germany has put a ban on usage of azo dyes in the fabric imported into that country. The local institutions such as SITRA and Textile committee, although know the names of these dyes yet they would not be quite familiar with new methods of testing involved to detect all such named dyes or thereafter to suggest the entrepreneurs on the usage of alternative means. Similarly, chlorine, pesticide residues, heavy metals and formaldehyde have been banned for usage by the European Union.

c. Fabrication

The process of fabrication comprises of cutting the print fabric according to the pattern and thereafter stitching as per the specifications of the garments. While cutting is done manually with the help of a pair of scissors or a small cutting machine, stitching is carried out on sewing machine, manually or electrically operated. Sophisticated indigenous and imported sewing machines are used not only for high speed stitching but also for the various stitching designs. This process is the most labour-intensive one involved in this industry.

d. Printing and finishing

Printing is mainly done on the garments although it could also be done on the bleached fabric before stitching. There are many SSI printing units which undertake the work on job work basis. However, it is important that before printing is undertaken, calendering is done to ensure smooth surface of the fabric for printing. Calendering is the process of ironing the garments with a steam press in order to remove the wrinkles.
Textile printing may be done in a number of ways. These are broadly classified into four types as hand block, stencil, screen and roller printing in the order of increasing sophistication, speed and quality. Screen printing is mostly employed in the cluster but the increasing export demand for multicoloured and high end print quality has led to the setting up of several multi-speed roller printing machines. The calendered hosiery roll in this case is sent for printing before being cut and stitched into finished garments. Other finishing operation that is not currently in demand but could be used is 'embroidery'.

2.7.3 Subcontracting relationship of the production system

Out-contracting in large firms minimizes the need for vertical integration within firms and gives small firms the advantages of flexibility of operations with better capacity utilization. Capital constraints to expansion are minimized for the cluster as a whole. Also, large firms can restrict the size of their labour force without inhibiting the expansion of production. There are also many small independent firms that undertake processes more specialized in nature. The very availability of numerous process specialized smaller firms saves on the costs of space, machinery and labour. The mutual exchange of information and skills has made small firms gain capability of meeting more stringent standards necessary for garments, especially for those meant for exports.

2.7.4 Pollution Control

Some of the bleaching and dyeing units allow their effluents to flow out without treatment. Many of them discharge their effluents into Noyyal river. A substantial number of them are discharging effluents from their units into the nearby river. There are some units who find nearby bare spaces suited to them for open percolation or Municipal drains. Some units have offered to erect their own treatment plants. Such units have been identified and are 866 in number and have received notices from the court. Out of 866 units, 114 units have closed down while remaining 752 units are operating. 466 units have proposed
to construct individual treatment plants and 288 have proposed for the Common Effluent Treatment Plants (CETPs). Eight of them have already started work on Common Treatment plants. In most of the plants civil work has been completed and the machines are yet to be installed. Several units have requested the government to grant them subsidy for such an expenditure which for the short term seems to be unproductive.

2.7.5 Seasonality of operations

During Monsoons, the operations of knitting, bleaching, dyeing and printing are difficult to carry out. It is therefore that the two months of July and August are a lean period for the industry. During this time, the workers are laid off or they take long leave. The exporters concentrate on new designs for the upcoming season and the manufacturers get their equipment renovated.

2.7.6 Training

Role of in-house training for the entrepreneurs and labour is at most important. There are several firms that have been set up by entrepreneurs who were previously the employees in one or the other related firms of the industry. They gained experience, managed some financial resources from the family & friends, left the jobs and started their own ventures.

Training for the labour, supervisors and more skilled persons such as dyeing masters have been made available by different institutions such as SITRA. However, informal ways of training through on the job experience, job rotation and working experience with different firms seem to be the main source.

2.7.7 Developments in Technology

Industry has made breakthrough in value addition by producing sophisticated knit garments that call for state of the art technology along with high quality of raw material, better processing machines, improved dyes and new designs. Soft flow dyeing machines, compacting machines for minimizing residual shrinkage, HTHP machines, dyeing machines, computerized colour
matching systems, stenter machines for removing deformity in the knitwear are some of the many new machines that have been brought into the industry. All these new machines are available to the entrepreneurs in Tirupur itself through private indenting agents. The entrepreneurs come to know about new machines through local advertisements and at occasions when the agents call upon to brief them about new developments.

During the last two years, about Rs. 250 crores worth of new investments have taken place in the base knitting and processing sectors and over 200 units have taken up to modernization of their production processes with fresh investments. About 800 new knitting machines have been imported from abroad, during this period. In fact, the knitwear business is highly fashion-oriented, therefore, export production runs are more effective in promoting flexibility, than the use of cost reducing specialized production equipment. In this way, while individual entrepreneurs may go in for specialized production machinery, the industry as a whole cannot use high cost technology on a large scale. Moreover, the net-working system is such that the technological services, wherever in the cluster they are, can be availed of by all the manufacturers. Currently it is believed that there are almost 20,000 indigenous and another 600 imported knitting machines in Tirupur.

For the export consignments, there are several types of new tests which are being insisted upon by the importers. Some of these tests that relate to yarn are count, CV percent count, strength, CV percent strength, CSP, twist, CV percent twist, composition and barium activity etc. The tests which are required for fabric, made-ups and garments are count, construction, colour fastness to various parameters, moisture content, dye identification, dye fixing efficiency, solid content, composition, tensile strength, tear strength and several other physical ones. The test instruments are quite capital intensive in nature and are difficult to be afforded by individual firms.
2.7.8 Availability of finance

Short term and long term finance is available from the state financial institutions and commercial banks. There are also a few private sector banks. Besides the public institutions, private financing firms and leasing companies have also set up their establishments in Tirupur. The interest rates when compared to the public institutions are higher but the procedures are easier in the case of private companies. The problems that industry mentioned is related to the high interest rates prevailing in India compared to the international level. This affected the competitiveness of the industry at the global level to the tune of Rs. 97 crores\textsuperscript{56}. 

\textsuperscript{56} For currency conversion, please refer to the latest conversion rates.
Cutting Division

Cutting Division
Stitching Division

Checking Division
Ironing Division

Picture: Skilled workforce engaged in specialized work in Tirupur Cluster
2.8 COMPETITIVE ENVIRONMENT OF TIRUPUR KNITWEAR CLUSTER

The competitive status of Tirupur knitwear cluster is briefly summarised in this topic.

The success achieved by this small town is no doubt substantial. With nearly 80 percent of the nation's knitwear exports originating from this industrial cluster which in monetary terms is worth more than Rs. 8000 crore in a year, Tirupur is a case of a relatively successful third world industrial cluster and probably the most successful one in India. The kinds of merits of industrial clusters listed are all there to be found in Tirupur cluster. They are: "extensive collaborative arrangements in production... informal sharing of information, tools and equipment... well functioning local institutions... labour markets.... informal artisanal and credit arrangements". It is due to the aforesaid characteristics that the dynamic expansion of this industry has been possible. One of the researchers has stated that Tirupur's success had a great deal to do with the easy availability of cheap labour. But for Tirupur's global success, when similar advantages are available in several other clusters in India as well, it is not a sufficient explanation. This town has a long history in the cotton knitwear sector and specialized sectoral knowledge and technical know-how which have coalesced locally over the years, all that helped the Tirupur knitwear production find its way into the world market.

Some of important factors that have led to the growth in response to the competitive environment are listed as under.

2.8.1 Proactive marketing

This factor is the single most important factor that has helped the industry transform from being one time an insignificant exporter of knitted vests (banians) to become a dominant and multi-product exporter of cotton knitwear garments. With the demand for quantity and quality (with high value addition) limited in the domestic market, the cluster did not take the route to
fighting down each other and catch a low end route to short term success by merely cutting down cost and producing more of qualitatively inferior products.

The merchant-exporters and manufacturers in the market have been proactive. On the other side, turning to the industry one finds diversification of products in terms of quality and design as advancing to meet the export requirements. Thus the industry reacted positively to support the initiative. The expansion of market in terms of number of buyers and countries targeted is still in progress. Exports form the main plank on which all progress is based. To beat the quota system, exporters have started moving to items that do not come under MFA restrictions and within the quota categories and to the higher end of the market where realizations are better.

2.8.2 Inter-firm production arrangements

The second most important factor that has helped the industry is the usage of inter-firm production arrangements that were necessitated mainly by economic reasons. Hosiery, textiles and ready-made garments as in the case of metal working involves a series of processes each involving specialization which provides a conducive environment for the development of subcontracting relationship among the firms. Many of the small firms have been working under common ownership. Through subcontracting both horizontal linkage and vertical integration have been possible and work very successfully.

2.8.3 Leading to an active social system

The industry of Tirupur has taken full advantage of this structure to develop and build upon the specialization of these firms to create an active 'social system'. There are actors, agencies and institutions playing their respective roles and exerting their influence to make the social system work. The industry associations took up the task as an informal conflict resolution mechanism. This sowed the seeds of co-operation along with competition
which is a natural phenomenon of inter-firm commercial rivalry. This extensive co-operation makes the entrepreneurs, workers and other support enterprises play their roles in unison for a common target of acceleration of growth. The end product therefore becomes more of a social than an economic product here. It has come to be known that efforts to duplicate the Tirupur success in places like Madras, even by taking artisans and craft masters from Tirupur, have met with failure.

2.9 STATUS OF THE INDUSTRY AT NATIONAL AND INTERNATIONAL LEVEL

In this concluding section the researcher has depicted the status of the industry in the nation as a whole and the various regulating rules at national and international level.

2.9.1 Industry Scenario at National Level

India is one of the largest producers of cotton in the world. Cotton textiles, hosiery and garments industry put together provide employment to over five lakhs persons mainly in the small scale enterprises. The knitwear industry in India is over a century old. It had its origin in Calcutta and later it spread to other parts of the country. Presently, main centerers where this industry is located are Tirupur (Tamilnadu), Delhi, Calcutta, Bangalore, Ahmedabad, Saharanpur, Surat, Kanpur (Uttar Pradesh) and Mumbai. Initially, the industry produced mainly under-garments in hosiery. It is only in the last 15-20 years that the industry started manufacturing outer-wear like T-shirts, cardigans, jerseys, pull-overs and polo-shirts.

It is believed that the first small scale hosiery unit was started by an enthusiastic entrepreneur from Calcutta in the year 1893 in a small shed in Khidderpur. This industry has now grown multi-fold and made a significant contribution to Indian economy with almost 10,000 units. Besides, there are several other units that are supporting this industry by producing related products. The production of hosiery yarn and hosiery products both are now
16% of the total textile products. The industry contributes significantly to the exports of the country. Their production is estimated to be 1300 million pieces per annum. Almost one-third of the production is exported and the rest is consumed within the national market.

2.9.2 National and International Regulations

At national level, most of the cotton hosiery items are reserved for manufacturing in small scale industry. They are knitted cotton cloth, vests, socks, undergarments, shawls and 'other cotton knitted wear'. The process of knitting itself is however not reserved. At international level, the exports of the hosiery garments and other textile products are regulated by the importing countries through an extensive quota system under Multi - Fiber Agreement of World Trade Organization (WTO) till the end of December 2004. From January 1st 2005 onwards the market is trading under 100 percent quota free open market situation.

Phase out of 'General Agreement on Tariff and Trade' (GATT), the Multi – Fiber Agreement has given an additional opportunity to the country to increase its presence in the international arena. Secondly, an international shift from the synthetic man-made fibers to the use of cotton will also help to boost demand for cotton apparels in general and cotton hosiery products in particular. Cotton hosiery industry can continue to be a major export earner in future as well.
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