

**Report on
Identification of Clusters in and around Meerut City**

**Submitted to
National Manufacturing Competitiveness Council (NMCC)
New Delhi**

by



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1. Executive Summary

The Foundation for MSME Clusters, New Delhi was awarded an assignment by the National Manufacturing Competitiveness Council (NMCC), New Delhi to identify important clusters in Meerut city, based on a rapid survey. The study was designed as the first step towards achieving a broader understanding on the presence and significance of clusters in Meerut city.

The Foundation used both primary and secondary data sources to identify clusters. Analysis of reports available on the website and publications of various local agencies was the starting point. This was followed by discussions with industry associations, local public agencies and firms. Thereafter, wherever required, rapid cross checking across the value chain was done, wherever significant variation was noticed between the available secondary information and information provided during primary survey.

To maintain coherence with the national database on clusters, a cluster is defined here, as having around 100 enterprises. Accordingly, 10 clusters were identified in Meerut city. These clusters are estimated to have 14,500 micro and SSI units employing more than 125000, persons and having a total turnover of Rs 1200 crores. Several clusters in the making were also identified.

Going beyond the scope of the proposed study, a tool was developed to rank the clusters for intervention sequencing. The ranking exercise needs to be made more robust with more detailed information, during the time of actual selection. However, at this stage, one can broadly conclude that the five most prominent clusters are transformers and voltage stabiliser, sports goods, auto components mini gas cylinder and rubber products. However rapid diagnostic study is suggested prior to finalising selection. Detailed benchmark study is suggested prior to intervention.

2. Backdrop

2.1 Objective

Objective of the project assigned by NMCC was to identify clusters in Meerut city and make a broad assessment of their potential, through a rapid study.

2.2 Meerut city – Demography and basic infrastructure

Meerut is a city and a municipal corporation in the Meerut District in the state of Uttar Pradesh. It is an ancient city located 72 km (44 miles) north-east of New Delhi. Meerut city is also the administrative headquarters of the Meerut Division consisting of the districts of Meerut, Bulandshahar, Gautam Buddha Nagar, Ghaziabad and Bagpat. Meerut also has one of the major army garrisons/cantonments in this part of the country.

Meerut City is the headquarters of Meerut district, which consists of 1,025 villages with a population of around 3.44 million according to the 1991 census. As of 2001 India census, Meerut city had a population of 1,074,229 (53 percent males). Meerut has an average literacy rate of 58 percent, lower than the national average of 59.5 percent with male literacy at 64 percent, and female literacy at 52 percent. Meerut has one of the largest Muslim populations among the major cities of India (close to 45%). There is also a significant Christian population.

2.3 Industrial Scenario of Meerut City

Meerut City is known for many types of industries. Meerut is the second largest supplier of sports goods and the largest manufacturer of musical instruments in India. It is also home to some prominent regional pharmaceuticals companies like Perk Pharmaceuticals Limited, Mankind Pharma & Bestochem. Meerut is

also known for its local-made sweet *rewri*. The SSI intensity in Meerut is three times higher than the national average (Table 1)

Table 1: Relative Presence of SSI in Meerut

	No: of S.S.I. Units	Area (sq km)	No: of S.S.I. units (per sq km)
India	1.28 crores	3,287,590	3.89
Meerut	35099	2950	11.89

Source: Derived from www.meerut.nic.in and www.msme.gov.in

In the last 3 years, Meerut has seen a boom in the construction business and the city now has many buildings, shopping complexes and apartments. Historically, Meerut is the education hub in the region. In the last decade, there has been a significant increase in the number of private vocational, technical and management institutions, apart from Meerut University. The major industries of Meerut are given in Table 2 below:

Table 2: Industrial Scenario of Meerut District (As on March 2007)

Name of the industries	No. of registered units		Investment (Rs Crores)		Employment	
	Total	SSI	Total	SSI	Total	SSI
Food Products	661	652	91.15	1.3	9058	3218
Cotton textiles	309	306	33.33	6.18	5799	3941
Hosiery garments	1343	1343	8.69	8.69	7213	7213
Wood Products	2223	2223	12.69	12.69	7325	7325
Paper Products & Printing	820	803	162.9	10.80	6466	4733
Leather Products	2813	2813	11.97	11.97	8950	8950
Plastic & Plastic Products	1686	1682	10.54	8.33	7306	7232
Metal Products	2430	2430	18.16	18.16	14374	14374

Machinery & Part Except Electrical	4017	4017	21.84	21.84	20390	20390
Electrical Machinery & Apparatus	4930	4929	119.38	83.88	24692	24649
Repairing & Services	6741	6741	102.87	102.87	27860	27860
Chemical & Chemical Products	814	793	129.2	23.1	7121	4701
Non-Metallic Mineral Products	188	186	97.52	5.79	1852	1304
Transport Equipment & Parts	384	384	3.01	3.01	1584	1584
Total	29359	29302	823.25	318.61	149990	137474

Source: DIC, Meerut

As on March 2007 these industries had 29359 firms (99.8 per cent being SSI units) with an investment of Rs. 1422 crores (25 per cent by SSI units) employing 165032 persons (92 per cent by SSI units). Thus, the SSI units are highly employment intensive and deserve attention for competitiveness, wherever identified.

3. Methodology

3.1 Collection of Macro information

As a first step, an overview of the various industries and industrial sectors in Meerut was obtained (see section 2.3). Objective of this macro overview was to understand the economy of Meerut and gauge the evolution of industrial growth in the city. A wide range of secondary sources were consulted during the initial profiling. Sourcing of relevant secondary literature was done through internet, relevant libraries, visiting economic department, various universities, etc. Apart from desk research, this data was collected also through visits to Meerut. Some of the secondary literature options that were found useful are:

- (i) www.meerut.nic.in
- (ii) Cluster profiles from DIC Meerut
- (iii) News/Bulletins published by the local chambers of commerce, e.g. Western UP Chamber of Commerce, Indian Industry Association etc.
- (iv) Interaction with key technical organizations/institutions e.g. DIC, Directorate of Handloom
- (v) News clippings preserved by industry associations
- (vi) District Profile of Meerut

3.2 Creation of Cluster Profile

Based on the information as discussed above (see section 2.3) the likely clusters present in the area were identified. The depth of information was gauged and a data collection profile was designed as given below. However on many occasions discussion prevailed over the structured questionnaire (Table 3).

Table 3: Basic Issues for Discussion during Field Survey

	Name of Cluster
1	Major products
2	Number of firms
3	Total employment
4	Turnover
5	Areas of major concentration
6	Growth rate
7	Structure of the cluster (vertical/horizontal)
8	Product typology & scope
9	Challenges
10	Scope for intervention, especially with respect to technology and product up-gradation
11	Presence of product based association, technical institution and development institution

The principal sources of such primary information are given as under:

1. Industry stakeholders
 - Chambers of Commerce
 - Sectoral associations
 - Product based association
2. Walk through market assessment
 - Through visit and visual overview of the market place
 - Discussions with retailers
3. Meetings with other stakeholders
 - Technical Institutions
 - Engineering colleges
 - Researchers

- Governmental bodies

Once the data collected was computed as per the profiling detailed in table 4, it helped to highlight the significant gaps/inconsistencies in information gathered.

3.3 Cross-Validation

Thereafter, an initial table of likely clusters with available macro information was prepared and meetings were held with knowledgeable people in the value chain to cross check the authenticity of the estimates provided by the firms/associations/agencies. The information gathered was also cross-checked with rapid input output analysis in few cases.

The iterative approach of cross checking with secondary and primary sources of information helped identify the clusters. Rapid Input-Output analysis provided added confidence to validate information obtained from multiple sources.

3.4 Ranking of clusters for intervention

To rank the clusters for intervention, few parameters were identified and weighted according to their perceived significance.

- As all SSIs are mostly labour intensive and all clusters are mostly SSI intensive, employment intensity was given a low weight, only to represent the higher involvement of labour in one cluster as compared to other. Thus it was given a weight of 15 per cent. The scoring logic appears below in table 4.

Table 4: Score Guideline for ‘Employment’ Parameter

No of employees	Weight
Below 10,000	1
10000-20000	2
20000-30000	3
30000-40000	4
Above 40000	5

- Turnover is an important parameter especially to the extent that it has higher scope for impacting the local economy and higher turnover that will also contribute to increase in productivity and employment. Thus it was given a weight of 20 per cent. The scoring logic appears below in table 5.

Table 5: Score Guideline for ‘Turnover’ Parameter

Turnover (in Rs. crore)	Weight
Less than 1	1
1-50	2
50-150	3
150-300	4
Above 300	5

- The growth rate of a cluster is a proxy for existence of market for the product and also the likely long term existence of the product. It also suggests the likely degree of willingness of the units to invest and develop in enhancing competitiveness as a programme starts, especially if they are facing productivity/technology/skill related challenges. Again, higher the growth rate higher will be the impact on productivity and competitiveness. Thus it was given a weight of 25 per cent. The scoring logic appears below in Table 6.

Table 6: Score Guideline for 'Growth Rate' Parameter

Growth rate	Weight
Negative	1
Stagnant	2
1-4	3
4-8	4
8-12	5

- Given a good growth rate, turnover and employment, the scope for enhancing competitiveness will be high if there is scope for skill, technology and product upgradation. Higher the scope, higher the chances for successful implementation. Thus this was given a weight of 40 per cent. The scoring logic appears below in table 7 and it assumes that skill up-gradation is a constant necessity.

Table 7: Score Guideline for 'Productivity' Parameter

	Weight
Both high	5
One high and other low	3
Both Low	1

3.5 Limitations of the study

The study aimed at identification of clusters and gathering a preliminary view on the potential of various clusters. The study relied intensively on both primary research and discussions with important and knowledgeable persons, since very

little statistical and recorded information was available. There was also significant variance between the information provided by published and informal sources in some cases. While cross-checking and validation was done through meetings with stakeholders across the value chain, a detailed input-output mapping was not done, as it was beyond the scope of the study. The sample size was also small, given the scope of the study. To that extent, errors and variations are likely and needs to be plugged through exhaustive study subsequently.

4. Cluster Profile of Meerut City

The clusters¹ identified in and around Meerut city are as follows:

Table 8: Clusters in Meerut City

	Product	Areas of Major Concentration
1	Auto Components (mechanical & electrical)	Garh road, Delhi road. Partapur ind. Area, Mohkampur ind: Area, Partapur Ind:
2	Band Instruments	Jolly Kothi, Patel Nagar, Kesar Gunj, Khair Nagar, Ahmed Nagar
3	Glass & Wooden beads	Mundali, Nangali, Harra, Piplikhera, Pachpera
4	Handloom	Mawana, Falwara villages
5	Mini Gas Cylinders	Hapur Rd, Karim Nagar, Zakeer Colony, Khair Nagar
6	Power loom/ Embroidery	Shahpir gate, Islamabad, Ahmed Nagar, Karim Nagar, Kidwai Nagar, Khair Nagar, Shahajanpur.
7	Rubber Products	Partapur Industrial Area, more to be added
8	Scissors	Peeramal Bazar, Kanch ka pool, Khair Nagar, Karim Nagar, Kotla, Karimwala
9	Sport goods	Sport goods complex and near by villages
10	Transformers and voltage regulators	Victoria Park, Mohkampur, Rithani, Partapur Ind. Area, Sarswati Vihar

Sources: Interviews with various firms, organizations, associations and DIC, Meerut

¹ Each cluster has at least 100 units.

Together these clusters are estimated to have around 14,500 micro and SSI units employing more than 125,000 persons and having a total turnover of Rs 1200 crores.

Table 9: Cluster in Meerut City: Macro Parameters

	Name of the cluster	No. of Units	Employment	Annual Turnover (Rs. Crore)
1	Auto Components (mechanical & electrical)	4600-4700	26000	100
2	Band Instruments	300	5000	15
3	Glass & Wooden beads	3000	16000-18000	0.7
4	Handloom	2500	15000	2
5	Mini Gas Cylinders	150-160	7500	100
6	Power loom/ Embroidery	3000	30000-35000	40
7	Rubber Products	120-130	2500	40
8	Scissors	400	2000-2500	10
9	Sport goods	350	15000-16000	400
10	Transformers and voltage regulators	90-100	3500	400

Sources: Interviews with various firms, organizations, associations and DIC, Meerut

There are several products that are shaping up as clusters but do not have the critical mass as of now.

Table 10: Products Shaping up as Clusters in Meerut city

SI No:	Product	Number of Units
1.	Leather Products	12-15.
2.	Plastic Utilities	20
3.	Food Products	15-16
4.	Water pump & spare parts	35-40
5.	Small casting	30
6.	Sugar mill Machinery	15-20
7.	Chemical Products	15
8.	Corrugated Box	12-15
9.	Printing	10-12
10.	Hosiery & Garments	20-25

In what follows we present a brief profile of the 10 identified clusters. The only exception included in this study, apart from the above 10 identified clusters, is paper products, where the number of firms is 12, but the industry suggests a turnover of over Rs 100 crores. Needless to say that exhaustive study of each cluster is warranted for a better understanding of the future course of action.

4.1 Auto parts (mechanical & electrical) Cluster

Macro Parameters

Auto parts industry of Meerut produces both electrical and mechanical parts. This cluster has 4600-4700 units, of which almost 95 percent are related to mechanical parts. Apart from manufacturing, significant number of units are also into repairing. 26000 people are employed in this cluster. The cluster has an annual turnover of Rs 100 crores, and 80 percent of this turnover comes from mechanical parts units. The major products are auto rubber parts, auto brakes, auto engine spare parts, nuts and bolts, spring pills etc. All the units are either small or micro in nature. These units are spread through out the Meerut city. The cluster is growing at a rate of 5 percent annually for the last 5 years. This growth rate is far lesser than the national growth rate, wherein, it is estimated that the auto components sector is growing at over 10 percent annually.

Product scope

While the auto component sector is growing rapidly at the national level, the Meerut cluster is relatively stagnant. One does not notice any standardization or a mass production of any particular type of product. In such situation, while the opportunities exist within the sector, Meerut is not really well poised to exploit the available opportunities, as of now.

Challenges

- The cluster is highly fragmented and hence cannot produce any single item in large volumes. This has affected both manufacturing costs and quality.
- The workforce is unskilled and quality culture is by and large absent.

Potential for intervention

There is a strong requirement for technological up gradation. In most of the units, simple cutting and drilling machines are being used. Since most of the units are either micro or small scale, hence full atomization of the machines has not happened. There is a possibility of introducing advanced equipment, improve shop floor practices, induce quality systems and promote standardization.

4.2 Band Instruments Cluster

Macro Parameters

Band instruments cluster of Meerut is over 50 years old. There are almost 300 small and micro enterprises. Almost 5000 people are involved in this cluster directly or indirectly, of which 20 percent are women. Geographically the cluster is spread over 2 k.m, which include areas like Jolly Kothi, Patel Nagar, Kesargunj, Khair Nagar and Ahmed Nagar. The annual turnover of the cluster is 15-16 crores with an investment of Rs 10 crores. The major products are musical instruments like Brass Band, Manjira, Dhol, Jhunjhuna, Flute, Harmonium, Drum, Shehnai, Clarinet etc. The band instruments manufacturers do not have any association. It was reported that the cluster is stagnant, with practically no growth over the last two years.

Problems/Challenges of the Product

- Most of the units in this industry are household units, with unhygienic working conditions
- Very little innovation or technical upgradation has happened in this sector. Most of the manufacturers are not aware of the improved manufacturing processes.
- Cyclical shortages and scarcity of key raw materials often leads to fluctuation in sales. Moreover, sales are linked to marriages, thereby often leading to excess inventory and distress sales.
- Absence of any association of the artisans is not allowing artisans to get due market price and value for their products.

- Artisans do not have any direct links to the markets, often leading to exploitation by the traders.
- Most of the units are micro enterprises and do not have any access to bank credit.

4.3 Glass and Wooden Beads Cluster

Macro Parameters

The cluster has 3000 household units employing around 16000-18000 persons, with a turnover of Rs 70 lacs. This cluster is spread across the villages of Mundali, Nangli, Harrah, Piplikera, Kithorjoyi, Nanglasahu, Pachpera etc situated around 20-30 km from Meerut city. Bead manufacturing is largely a part time activity with most of the workers also engaged in agriculture during farming season. The major product is jewelry. The cluster gets its raw materials from Delhi, Gaziabad, and Firozabad. The cluster has been growing at a rate of over 5 percent, for the last 5 years. Its growth has been restricted, as bead manufacturing is not treated as a full time profession due to low margins available.

Product Scope

In the last decade, use of beads in ethnic wear has grown significantly. Beads are now looked upon as fashion accessory. The beads manufactured in Meerut have a high growth potential, provided the cluster is able to improve the finish and standardize the size.

Challenges

- Artisans are not linked to the market. They are manufacturing the designs that are known to them, which are often not according to the market preference.
- Excessive inventory and distress sales.
- Lack of technical knowledge and modern machine to make new design and increase their productivity.

Potential for intervention

The cluster has the potential to grow as the demand for glass and wooden beads is increasing. Technology upgradation and linkages with markets can enable a significant income augmentation, which also will reduce the dependence on agriculture.

4.4 Handloom cluster

Macro Parameters

There are over 2500 household units in the Handloom cluster of Meerut, employing over 15000 weavers and producing fabric worth Rs 2 crores annually. The geographical spread of the cluster includes villages like Mahelka, Falawara of Meerut city. These villages are situated around 20 km of the Meerut city. The major products are mat (chatai) and blanket. The cluster growth is stagnant for the last 5 years.

Product Scope

The market for these products has seen a consistent decline over the last decade. Some exceptions may be noticed to this phenomenon, in items that are highly niche and have been protected by patents and geographical indication registrations. On the whole the current range of products do not hold much potential.

Challenges

- **Technology:** Majority of the looms are pit looms (throw shuttle) and very few looms have dobby and jacquards attachments. The looms are very old and dyeing facilities are almost negligible. Weavers work in temporary work sheds which are unable to protect them from rain. Winding and warping is done in a traditional way which is time consuming.
- **Marketing:** Almost all the production is sold in the local market through local traders of Meerut. Most of the weavers have very low bargaining power.

- **Designing and product diversification:** The designs of the different products are very old. The industry requires contemporary design inputs. For many years no diversification in the product has been noticed. All the products are being produced mostly at the suggestions of the local traders.
- **Non lucrative for younger generation:** Per loom per day income is very low. Hence the younger generation is diverting to other lucrative options of going to the industrial units nearby and earning about Rs.80-100 a day.
- **Credit:** Due to the lack of credit and mistrust of the financial institutions scarcity of working capital has become a great issue for which the weaver have to depend upon the market forces or the local money lenders.

Potential for intervention

The cluster requires several inputs to be given in a consistent manner to upgrade the cluster. The cluster needs inputs in design, technology, worker's skill up gradation and improved dyeing practices. Moreover there are already existing institutional systems to help this cluster and involvement of other development agents may be less efficient.

4.5 Mini Gas Cylinders Cluster

Macro Parameters

There are 150-160 SSI units in Meerut manufacturing Mini Gas Cylinders with an annual turnover of Rs 100 crores and employing almost 7500 people directly. Around 40000 are estimated to be indirectly employed, i.e. supporting this industry. These units are spread over the areas like Hapur Road, Kareem Nagar, Zakir Colony and Khair Nagar.

The cluster manufactures cylinders with capacities of 1kg, 2 kg and 5 kg. There is no formal association of gas cylinder manufacturers but there are three *samiti's*

1. Hindustan gas cylinder *samiti*
2. Ekta gas cylinder *samiti*
3. Meerut gas cylinder *samiti*.

The cluster has been growing at over 10 percent, with a strong demand emerging from both the rural and urban sector.

Product Scope

There is huge demand for mini cylinders, as a large part of the country does not have access to electricity and use of mini gas cylinders offers an effective way of lighting homes (when compared to traditional wicks etc)

Challenges

- There are no testing labs by which quality can be ensured.
- Lack of technical knowledge and best manufacturing practices (including safety norms) is restricting export potential

- There are several health hazards involved in the manufacturing process.
- The cluster is not growing at desired rate in spite of the availability of human resources (though unskilled) and high demand of mini gas cylinder in the national market..

Potential for intervention

Intervention is needed in the field of technology as the metal used in the cylinders is corroded over the period leading to serious safety hazards. There are also good possibilities for improving welding techniques.

4.6 Power looms (including embroidery) cluster

Macro Parameters

The cluster has 3000 powerloom units employing over 30000-35000 persons. Most of the units (almost 95 percent) are micro-scale units. The cluster is spread across Islamabad, Nalapark, Dawai Nagar, Karim Nagar, Imlian, and Khair Nagar in Meerut. There are around 35000-40000 power looms installed in the cluster, out of which only around 65-70 percent are working. The cluster has seen a negative growth and currently only about 70 percent of the installed looms are working. The major products are grey fabric and fabric for home furnishing, which are then supplied to traders located at Delhi, Ghaziabad and Panipat. The cluster produces goods worth Rs 40 crores.

Embroidery works provide 5 percent of the turnover. Like most other power loom clusters, the traders or master weavers control the market. Female members of the family mostly do embroidery work on job work basis. Embroidery is considered an ancillary to the power looms cluster as embroidery is not given much attention and has been continuing as a family tradition only. The cluster has two informal associations.

Product scope

The power loom sector has seen a decline in the last few years and similar scenario can be noticed in Meerut. Meerut has very few units having modern looms and is relatively inefficient when compared to the power loom cluster of Panipat.

Challenges

- The weavers have practically no market linkages and are hence dependent on the traders.
- The turnover of the units are very low, due to which they are not able to get credit from the banks.
- No emphasis is given on embroidery work hence no technical advice on different design.

Potential for intervention

The cluster has limited scope for intervention. Though it is possible to induce use of new technology by leveraging on the TUF scheme, but the cluster may need support for a very long duration considering that it has practically no direct market linkages and is less productive compared to other similar clusters.

4.7 Rubber products cluster

Macro Parameters

The cluster has about 120-130 units, primarily located in the Partapur industrial area. The total turnover of the cluster is around Rs 40 crores and employs around 2500 persons. Meerut's contribution to national rubber industry is merely 4 percent. Raw natural rubber is procured from Kerala. Rubber is used mainly in making of tyres/ tubes and sports goods product. In the tyre segment the cluster is more focused on bicycle tyre and tubes, and in the non-tyre category, it includes auto components market. The cluster caters mainly to the national and local market. The cluster has been growing at over 8 percent annually over the last 5 years.

Product Scope

The cluster is projecting over 8 percent growth annually for the next 5 years. This growth is coming from the domestic market in tandem with growth in auto sector. The cluster is linked very well to principal markets like Delhi and is manufacturing a wide range of rubber products. The units face problems of uncertainty due to forward trading practices by the raw material suppliers from Kerala.

Potential for interventions

The cluster has high growth potential, considering that its main buyer industry (auto components) is growing at a very fast pace. Similarly, the bicycle industry, which gets the tyres and tubes from Meerut, is also growing rapidly. The cluster needs to upgrade its manufacturing systems to expand into the OE markets. The cluster is in need of both small interventions like quality systems as well as interventions in technology up gradation, standardization, new product development etc.

4.8 Scissors Cluster

Macro Parameters

The cluster has 100 small-scale units employing around 1000 people. In addition, the cluster has around 300 household units employing another 1000-1500 people. The estimated turnover of the cluster is around Rs 10 crores. The cluster is located around Peeramal market, Kanch ka phool, Khair Nagar, Ghantaghar, Kareem Nagar, Kotla and Kareemwala areas. Scissors manufacturers are also present in nearby villages like Mawana, Vahasuma, Parikhitarh adi, Bara Gaon and Chota Gaon. The major products are 8" to 18" copper and silver scissors. Copper, steel and silver are the main raw materials required for manufacturing of scissors, which are available near Meerut city. There are two associations of scissors manufacturers. The cluster has been growing at a slow rate of about 3-4 percent. The only association in the cluster is Scissor Manufacturers Association.

Product Scope

In the recent years, the cluster has seen a decline in demand of scissors of sizes 10" and below, due to an inflow of imported scissors. The 10" and below segment is primarily of household users. On the other hand, the demand has increased for scissors of bigger sizes, which are supplied to garment manufacturers. The cluster has the potential for recapturing the household segment partially, provided the quality of scissors is improved. More specifically, hardness and sharpness are the two issues to be tackled.

Challenges

- The cluster is heavily dependent on traders both for raw material and sales, often leading to distress sales
- Shortage of electricity has also led to a problem of underutilized capacities, thereby reducing profits.
- The manufacturers are also concerned for fluctuation in raw material prices and inconsistent supplies, over the last two years.

Potential for intervention

The cluster is very tightly controlled by the traders. Intervention is required for technology upgradation and quality control for recapturing the lost market and future growth.

4.9 Sports Goods Cluster

Macro Parameters

The Sports Goods cluster has 350 units, employing more than 15000-16000 persons and producing goods worth Rs 400 crores. The major products are items related to cricket, boxing gloves, football badminton and tennis rackets. However only items of cricket and boxing are of match quality. The cluster comprises of both SMEs and household units. The SMEs are largely located in the sports goods complex, while the sub contracting units are spread all over the city and even in the nearby villages. The major items that are exported from the cluster are inflatable balls, hockey sticks, hockey balls, cricket bats and balls, boxing equipment, fishing equipment and different kinds of protective equipment. The cluster is growing at a rate of 8 percent annually for the last few years. Some of the segments like boxing gloves have been growing at a faster rate. Meerut sports goods industry contributes almost 25 percent of India's sports goods export. The cluster draws technical support from the Process and Product Development Centre (PPDC) for Sports Goods, which is a central government organization. The only association in the cluster is All India Sports Goods Association.

Product Scope

The cluster firms are mostly using manual manufacturing processes, while globally most sports items are manufactured mechanically. The cluster produces items only for few sports, leaving out a large chunk of the segment out of its domain.

Challenges

- The cluster is highly fragmented.

- There are very few large factories, due to which large orders are never given to the cluster by international buyers.
- The cluster is facing immense competition from mechanized units manufacturing similar products.
- The technology is changing very rapidly and the cluster firms are too small to make the required investments.
- The range of products produced in the cluster is very narrow and limited to traditional items.

Potential for interventions

The cluster has immense scope for technical upgradation within the existing set of manufactured item. Even, greater scope lies in diversifying to newer sports segments. Thus there is huge scope for promotion of productivity in this cluster. However, several attempts for development have already been done/ ongoing and there is already a technical institute dedicated for this purpose.

4.10 Transformers & Voltage Regulators Cluster

Macro Parameters

The Transformer & Voltage Regulators cluster has 90-100 units. It has 20 medium scale industrial transformer manufacturers, of which 2 of are also manufacturing voltage regulators. 40-50 SSI units make voltage regulators using small transformers. 30 SSI units make voltage regulators. The latter also supply specialized parts to the large transformer units. Around 3500 people are employed in this cluster. This cluster has an estimated turnover of around Rs 400 crores, of which 70-75 percent comes from the transformer sector itself. While, the transformer sector is having an estimated steady growth rate of 10 per cent, growth rate of the voltage regulator sector is estimated around 5 percent.

The cluster caters to both domestic and international markets, with exports contributing almost 30 per cent of the total sales of the cluster. However, export of transformers to African and Arabian countries make the largest share of the total export of the cluster. There is no formal association representing the cluster.

Challenges

- Transformer industry is undergoing a major growth with power distribution making inroads into remote villages. With an increase in electricity supply in other developing countries, there could be large opportunities for the cluster.
- The cluster is working way below the installed capacity due to immense shortage of electricity.
- The units need latest technical knowledge and also advanced computerized machine for product designing and development.
- There is need for skill up-gradation of the labour force which can significantly add to productivity.

- The smaller units are still using the age old methods of production. This is restricting capability of large firms to outsource and expand the business.

Potential for intervention

The cluster has immense scope for productivity improvement. A good starting point could be increasing the capacity utilization, after technology up-gradation & taking productivity enhancement measures. There is also immense opportunity of up-grading products and product features. Such steps can also lead to enhanced sub-contracting in the cluster.

Paper Industry

Macro Parameters

There are only 12 units manufacturing paper products in the cluster. Most of the units are situated on Mawana road, Partapur industrial Area, Bagpath road and Mokhampur industrial area. The cluster employs around 5500-6000 persons and has an annual turnover of Rs 120-130 crores. The major products are paper for printing industry, packing box. The industry is growing at a rate of 5 percent annually for the last 5 years.

Product scope

The cluster has high growth opportunities, since the per capita consumption of paper is increasing, as an outcome of the hue and cry against plastics. Over the last decade, several new uses of paper products have emerged besides packaging.

Challenges

- The cluster is mostly operating on 100-ton manufacturing lines, which are considered sub optimal production lines globally.
- Electricity shortages.
- The cluster caters only to national markets as manufactured products are largely suited for domestic market.

Potential for interventions

There are immense possibilities for internationalizing the cluster, both by providing market linkages as well as changing product profile. There are immense opportunities for energy saving and technology upgradation.

5. Ranking of Identified Clusters for Intervention

As mentioned in methodology (section 3.4), a ranking exercise was done based on the information detailed in section 4. The scores (see section 3.4) for each parameter varies between 1 to 5 and the weight for each parameter is as follows:

Table 11: Weights Assigned to Parameters

	Parameters	Weight
1	Scope for technology & product up-gradation	40
2	Growth rate	25
3	Turnover of the cluster	20
4	Employment	15
	Total	100

Accordingly, the clusters achieve the following rankings.

Table 12: Weighted Average of Clusters

	Name of the cluster	Weighted scores				Average Weighted Score	Rank
		Scope for technology & product upgradation	Growth rate	Turn over	Employment		
1	Auto Components (mechanical & electrical)	200	100	60	45	4.05	3
2	Band Instruments	40	50	40	15	1.45	9

3	Glass & Wooden beads	120	100	20	15	2.55	6
4	Handloom	40	25	40	30	1.35	10
5	Mini Gas Cylinders	200	125	60	15	4	4
6	Power loom/ Embroidery	40	25	40	60	1.65	8
7	Rubber Products	200	100	40	15	3.55	5
8	Scissors	40	100	40	15	1.95	7
9	Sport goods	200	100	100	30	4.3	2
10	Transformers and voltage regulators	200	125	100	15	4.4	1

6. Conclusion and Action Plan

- Meerut is a highly SSI intensive city.
- There are at least 10 full fledged clusters in and around Meerut city.
- Around 10 products can also take the shape of clusters in the future.
- Among the 10 identified clusters, the five most potential clusters for intervention are
 - Transformers and voltage stabiliser
 - Sports goods
 - Auto components
 - Mini gas cylinder
 - Rubber products
- Identify an organisation that has experience in doing studies for cluster diagnosis, especially industrial clusters
- Organise rapid diagnostic study for the identified 10 clusters
- Select the top 5 clusters with respect to scope for enhancing competitiveness
- Train local organisations capable of doing benchmark studies or get organised detailed Benchmark Study (through professional organisations) for the 5 select clusters and identify areas of intervention with special reference to technology Intervention, customer satisfaction, market necessities, CFC needs, etc. Also estimate the likely development fund required for the purpose.
- Implement cluster development programme in those five clusters.