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WORKING PAPER

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A Case Study of
Moradabad Metal Craft Cluster**

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ROLE OF CLUSTERS IN THE GROWTH OF MSMEs: A Case Study of Moradabad Metal Craft Cluster

Ajit Kumar Jha and Surya Tewari***

Abstract: Cluster development has been an important way of industrialisation in both developed and developing nations. It can simply be defined as spatial concentration of firms and institutions in a sector that helps in generating local external economies and competition. Broadly, it can be distinguished between traditional (artisanal) and modern (induced) clusters. Cluster as a part of MSMEs led industrial development in India has been long established. Uttar Pradesh is one of the important hubs of these clusters in the country. Amongst those, Moradabad metal craft cluster is one of the prominent traditional craft clusters. The cluster contributes significantly to employment and export. Considering the traditional nature of the cluster, the paper seeks to understand what all factors are contributing to the growth and dynamism of this cluster and whether the dynamism reflected in terms of diversification, employment creation and export promotion are indicative of transformative nature of the cluster. The questions raised are addressed through primary and secondary data. The analysis reveals high level of raw material and product diversification. Aluminium is the most used substitute metal. Product-based diversification is a major contributing factor in the cluster's growth driven mainly by export market. In terms of technology, CNC and robotics etc are started being used but it is the traditional mechanism of working with hand and semi-automatic machines which is prevalent. Machines are largely improvised and locally sourced. Government support is there but a lot more needs to be done both for artisans and small businesses.

Keywords: Cluster, Moradabad, MSME, Artisans, Metal Craft.

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1. Introduction

Clusters have been an important aspect of industrialisation in both developed and developing countries. Defined as a spatial concentration of firms and institutions in a particular sector, they play a key role in the mobilisation of human and financial resources and help in overcoming the growth constraints of small enterprises (Schmitz and Nadvi, 1999; UNIDO, 2001). Drawing upon spatial endowments, whether in inputs, infrastructure, or policies, the initial growth impetus of these clusters generally comes from local demand. Competition and cooperation are the hallmarks of these clusters, with membership open and elastic. Facing common opportunities and threats, the units grow by sharing specialised infrastructure, labour market, and services. A high level of networking, a low level of informalisation, and good macroeconomic policies are considered as basic ingredients for the success of the clusters. The units are horizontally and vertically related with flexible specialisation, which is the principal production system (Roy, 2021; Das, 2008; Yusuf, 2008; Das, 2005; Martin & Sunley, 2003).

Broadly, clusters can be classified as traditional (artisanal/craft/natural) or modern (induced). However, many intermediate cases exist along the spectrum. A traditional cluster is perceived as less dynamic and constricted in expansion and innovation. It is also characterised by the widespread presence of informal enterprises and informal practices in production and labour processes. Whereas modern clusters can deepen the inter-firm division of labour, raise their competitiveness and excel in the international market (McCormick, 1998; Cawthorne, 1995).

India has been a hub of many artisanal clusters spreading across the length and breadth of the country. An important source of non-farm livelihood in rural and small towns, these clusters have been developed using local resources to meet local demand (Das, 2016). Some of these clusters are centuries old, producing long-established products for generations (Singh, 2010). Royal patronage gave much succour to them to continue and thrive. However, the advent of the British and their long rule, particularly with the thickening of the Industrial Revolution by the early 19th century, dealt a severe blow to these crafts. Shortages of raw materials, heavy duties, free dumping of British-made products, and the expansion of modern industrialisation through railways caused the decline of these clusters. Post-independence, neglect continued (Das 2016).

There are numerous sector-specific studies which show that clusters play a crucial role in the growth of output, export and job creation in micro, small and medium enterprises (MSMEs) in India (Nagaraj, 2021). There is no full count on their numbers, an estimate of decade and half earlier put the number as 6400 traditional and modern manufacturing-related clusters in India (Singh, 2010). At an official level, the list of manufacturing clusters includes 4824 clusters.¹ These clusters have been identified for intervention under various schemes of the Ministry of MSME. Of these, the majority, numbering 753, are located in Uttar Pradesh (UP)

¹ <https://www.dcsmse.gov.in/schemes/Clusters.pdf>

with items produced ranging from handloom, brassware, pottery, glassware, lock-making, leatherwork, wooden toys, zardozi, chikankari work etc. A major distinguishing feature of the industrial economy of UP is the massive presence of a large number of skill-intensive traditional industries (Srivastava and Ranjan, 2016). Among all the items produced in these clusters, metal craft is one of the prominent ones. The analysis of the top ten export items from the Ministry of Commerce & Industry (MoCI) shows that metalcraft and brassware are produced in 11 districts in UP.²

Moradabad is one of the major centres producing metal crafts (earlier brassware craft) for approximately 400 years (MoT, 2017; UNIDO, 2008). The sector is traditional in nature and operation but has a significant presence in exports. The high-value export from Moradabad has led its selection as 'Towns of Export Excellence' for handicrafts by the Government of India. Approximately 40-50 percent of metal craft exports in India have origin in Moradabad (Katyal, 2016). Within UP, 85 percent of metal craft exports were from Moradabad (SME Times, 2016). In 2001, metal art exports were to the tune of Rs 40 billion, which dropped to Rs 30 billion in 2006 (UNIDO, 2008). In 2022-23, metal craft and related items' exports amounted to Rs 61.96 billion, which is 60 percent of the total exports (Rs 98.64 billion) from the district, playing significant role in making Moradabad, the leading export district from the state. Overall, the district ranked as the third largest exporting district in UP. Metal craft has also contributed significantly to employment creation. According to the National Innovation Council, 3.5 lakh people were working in this cluster in 2014 (Mazurek, 2015).

In the light of the above the paper seeks to understand whether the dynamism reflected in employment creation and export promotion is indicative of the transformative nature of the Moradabad metal craft cluster. The study has the following three objectives:

- Analyse the functional dynamics and the factors that determine the current characteristics of this cluster.
- Discuss issues and challenges in the growth of the cluster in recent times.
- Explain institutional set up and policies promoting or constraining the growth of the cluster.

The paper is divided into six sections. Section 2 presents the database and methodology. Section 3 analyses the changing dynamics of metal craft in the cluster. Section 4 highlights the issues facing the craft and the role of institutions. Section 5 summarises the paper.

2. Database and Methodology

Fieldwork in Moradabad was case study based conducted in three phases spanning from May to August 2023. Thirty-seven enterprises were surveyed through semi-structured questionnaires using snowball technique. However, these enterprises do not constitute a

² <https://dashboard.commerce.gov.in/commercedashboard.aspx>

representative sample. According to the Udyam Registration data from July 1, 2020 to December 31, 2023 (accessed from District Industry Centre, DIC, Moradabad), there are 43,071 registered enterprises in the district. Of these 12,702 (approximately 30 percent) are manufacturing units. Analysing the data, 26 percent manufacturing units are related to metal. Among these units, 91 percent are owned by Other Backward Castes (OBCs), and nine percent by the general category. Females constitute only two percent of the owners.

Other than enterprises survey, interviews were conducted with District Industry Centre (DIC) Officials; General Manager, Metal Handicraft Service Centre (MHSC); and Manager, Canara Bank, the lead bank in the district. Indian Industry Association (IIA), an association of MSME units in UP, played important role in getting access to units. Local voices also help in getting connected with artisans. Efforts were made to cover artisans from each segment of metalwork. Table 1 provides details of the fieldwork.

Table 1: Duration of Fieldwork and Artisans and Others Covered

Phase	Dates	Industrial Areas	No. of MSMEs Interviewed	Description: MSMEs and Others
I	May 20-21, 2023	Behind Hotel Drive Inn-24, Delhi Road; Niryat Nagar; Gulab Bari; Lalbagh	6	2 micro and 4 small units (small units were manufacturing and exporting; one was President of the IIA, Moradabad Chapter); and General Manager, MHSC
II	June 5-7, 2023	Lal Masjid Road; Prince Road (Peerzada, Makbara, Galasahid); Dingarpur Road; Veerapur Industrial Area, Sambhal Road	20	12 artisans; 5 micro units; 3 small units (SEZ unit; Scrap Trader; Raw Material Bank (RMB) under Comprehensive Handicraft Cluster Development Scheme, CHCDS, Ministry of Textiles); MHSC; and DIC
III	August 23-25, 2023	Faiz Gunj Road; Hartala; Buddh Bazar	11	7 artisans and 4 small units DIC; Lead Bank Manager (Canara Bank)
I-III	May-August 2023		37	MSMEs; DIC; MHSC; Lead Bank Manager

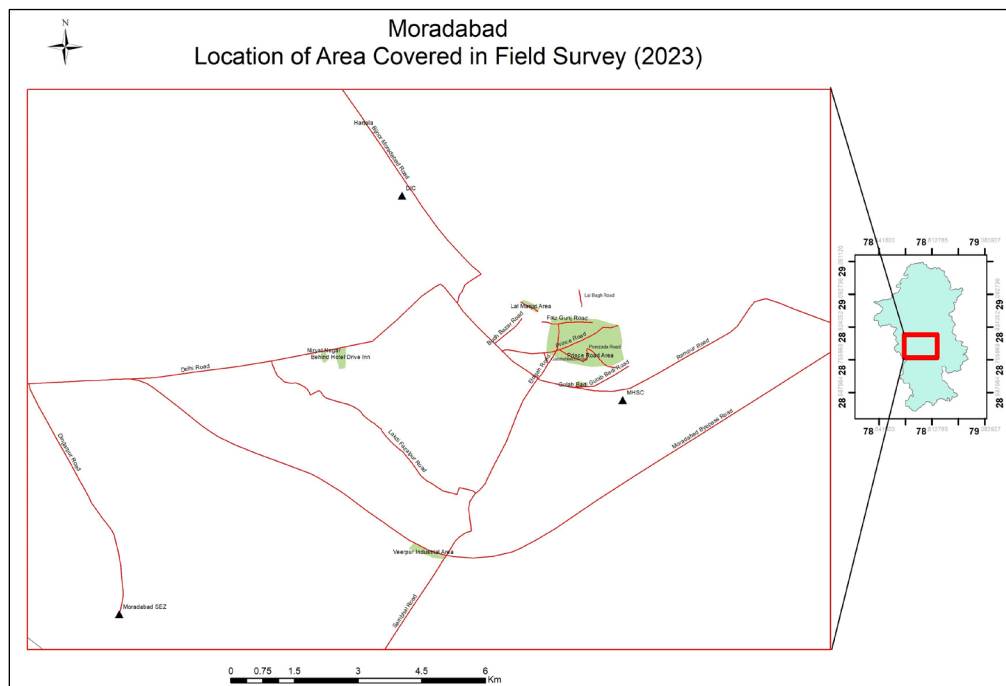
Source: Authors.

Among the 37 MSMEs interviewed, there were exporters (also involved in manufacturing), *karkhandedaars*, scrap trader, RMB unit and artisans. The size classification of these units is as follows: 11 small and 26 micro units, the latter comprising of *karkhandedaars* (also known as *bharatiya* or manufacturer) and artisans. There were 19 artisans interviewed and were basically single-process micro units. *karkhandedaars* on the other hand are owners of tiny manufacturing unit. The fieldwork revealed that the metal craft is primarily city-based and extends within a 20-30 km periphery. Artisans and *karkhandedaars* are concentrated in the old city. Small and medium size manufacturing and exporting firms are scattered throughout

industrial areas across the city. Noticeably, residences and industrial areas are interspersed with each other in the city. As per the estimates, the city's population in 2024 stands at 12.59 lakh persons (Census of India).³ The areal extent of the city was 75 sq km in 2011.

The fieldwork was conducted in Moradabad city, covering both traditional locations such as Prince Road and the industrial area set up as on Delhi Road (Figure 1). Overall, the survey covered five industrial areas situated along five important roads where industrial development has taken place in the city (Table 2) (Refer to MDA, 2013).

Figure 1: Moradabad: Study Area



Source: Authors using Google Map

Table 2: Road Wise Location of Industrial Areas Covered in the Fieldwork

<i>SNo.</i>	<i>Industrial Areas</i>	<i>Roads of Location</i>
1	Old City (Lal Masjid Road; Prince Road; Gulab Bari; Buddh Bazar; Faiz Gunj Road)	Moradabad-Rampur Road
2	Hartala	Moradabad-Kanth Road
3	Niryat Nagar; Industrial Area behind Hotel Drive Inn	Moradabad-Delhi Road
4	Special Economic Zone	Dingarpur Road that connects Moradabad-Delhi to Moradabad-Sambhal Road
5	Veerpur	Moradabad-Sambhal Road

Source: Figure 1.

³ <https://www.census2011.co.in/census/city/96-moradabad.html>

3. Functional Dynamics of the Cluster

Craft Process and Hierarchy

Broadly, the craft involves four layers of production, starting from the first stage of procuring raw materials to the final stage of packaging. Raw materials are available in two forms, ingot and sheet. Ingots (also known as *silli*), is mainly supplied from Moradabad. The metal sheet is mainly purchased from large companies such as Jindal, Tata and Bhushan Steel having local dealerships in the city. The big manufacturers and exporters also procure metal sheets directly from the companies. Ingot is the most commonly used material made largely from scrap purchased from scrap dealers based in the city. The process of making ingot is traditional one. Using coal, scrap is burnt in a furnace (*bhutti*) by placing it in the crucible (*kothali/ghadiya*). Once melted, it is cast into the shape of ingot using the moulds known as lines. Metal sheets, on the other hand is cut into required shapes using hand tools such as *kaati* or hydraulic machines. Figures 2 and 3 respectively illustrate the process of manufacturing using ingot and sheet.

Figure 2: Ingot-based Manufacturing

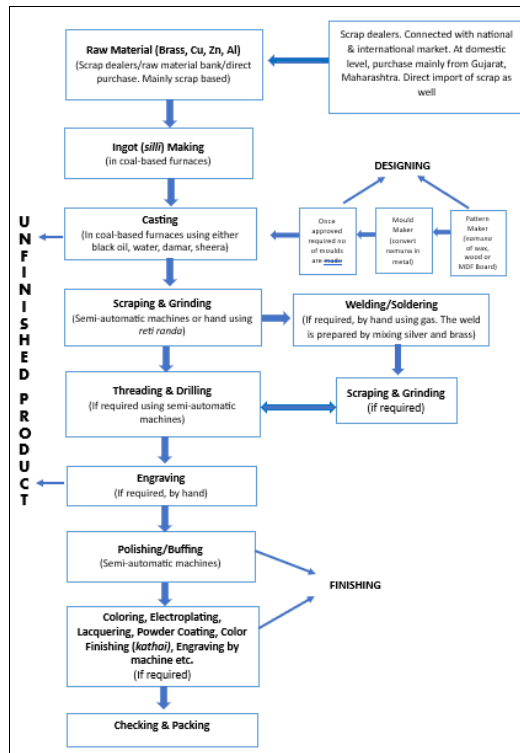
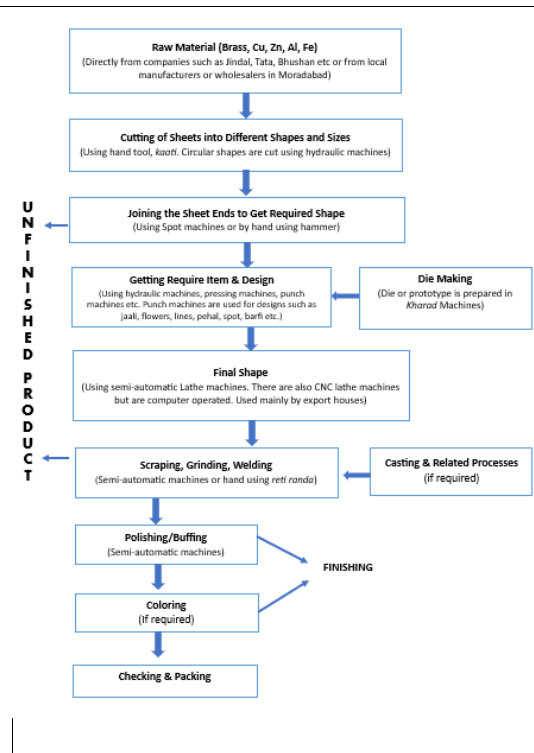


Figure 3: Sheet-based Manufacturing



Source: Authors' illustration based on field survey.

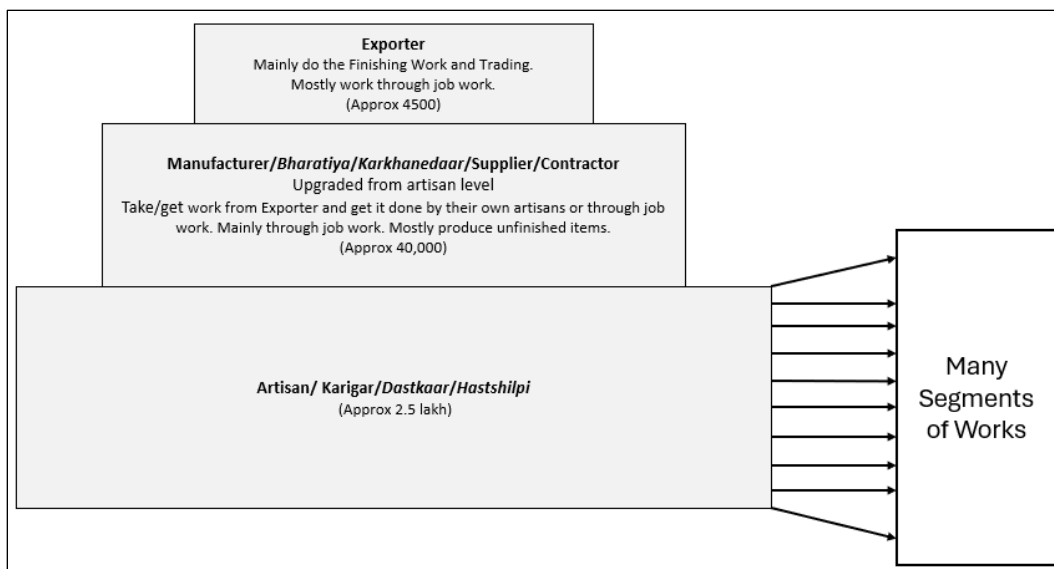
The next step is manufacturing unfinished items. The process using ingot involves creating a design (*namuna*), mould, ingot melting in furnace, casting (*dhalai*), scraping (*chillai*) or

grinding. If required it also involves welding/soldering, threading (*churi kattai*), drilling (making holes) and engraving. The metal sheets on the other side are first joined using a hammer or semi-automatic spot machines to obtain required shapes. The process followed is die or prototype making, which is then used on hydraulic, pressing, or punch machines to get the required item in the required quantity. The item is then given final shape using a semi-automatic lathe machine/computer numerical control (CNC) lathe (limited use), followed by processes of scraping or grinding and others such as welding etc. if required. The sheet work may also involve casting work and related processes.

The next stage is that of finishing which involves processes of polishing, colouring, electroplating, lacquering, and various types of coating, machine engraving, and so on. Polishing is conducted on all items, whereas all others processes depend on the specific requirements of the item. If required machine engraving is performed at the end.

The final stage is that of checking in terms of inspection and testing and packing the items. The entire process of production is carried out in a work chain that comprises of artisan or *karigar* at the bottom, the manufacturer or *karkhaneदार* in the middle, and the exporter (also involved in manufacturing) on the top (Figure 4).

Figure 4: Metal Craft: Functional Organisation



Source: Authors' illustration based on field survey.

Artisans are the backbone of the craft, making it an artisan-based cluster. There are many segments of work carried out by artisans in an informal job work system, primarily in their homes. There is flexible specialization, with each artisan specialising in one task or another in the craft. Approximately 2.5 lakh artisans with different skill levels are working in this craft. *karkhaneदारs* play a role in getting orders from exporters and get it done by their own hired artisans or through job work. However, the job-work system is a more common

practice in this craft. Their numbers are not officially counted, but people engaged in this craft expect that there are 40,000 *kharkhane*daars in the city. Both artisans and *karkhane*daars are located in the old city, and the majority of them belong to the Muslim community. Many of the *karkhane*daars were artisans scaled up to the position by gaining capacity to organise disparate groups of artisans in bringing out a product. The craft is mostly male dominated. Female artisans are almost nonexistent. Only a small proportion of female workers were found to be working in export units in the arranging and packaging of the items. Exporters are largely Hindus. Some of them have a long history of migration from West Punjab after independence (Burra, 1989). Muslims too have a sizable presence in the export market and happen to be latecomers in this business. It was also told during the interview that a sizable number of exporters and *karkhane*daars have scaled up within the system and occupied a prominent role in this sector. For example, C.L. Gupta, which is a big manufacturing and exporting metal craft firm in the city, was initially a micro entrepreneur. Interaction revealed that there are around 4500 exporters of metal crafts in the city.

The work-chain is based on a job-based contract. The contracts between exporters and *karkhane*daars are based on both oral and written contracts, while the job contracts between *karkhane*daars and artisans are purely informal. The work chain is more vertically linked. Exporters take orders from the international market and specify the design, size, raw material type and quantity of the items to the *karkhane*daars, who in turn get the work done by artisans. A specific job is assigned to artisans who complete the work in a given time, and the next stage of work is done by another artisan, and this chain goes on until the specific product is made. Exporters also have in-house labour for manufacturing, but many of them (basically small units) primarily carry out finishing and packaging work in their premises. Such relationships provide exposure to the *karkhane*daars and artisans regarding contemporary demand, as well as changes in other segments of the craft, such as raw materials and technology.

Broadly, the craft market can be divided into segments: the domestic market (local and national), and the international market driven by exporters. In fact, it is the international market that is the main driver of change. At the upper layer of the work chain, the process is both competitive and cooperative. The exporters and big manufacturers are highly secretive of the markets/clients they are serving. They do come together but for meeting out common demands such as the need to build common physical infrastructure by the government. There are industry-specific associations, such as IIA, that provide a common platform for enterprises.

Interactions with exporters and DIC officials revealed that 40-50 per cent of the item designs change every 15-20 days, making the cluster very dynamic in terms of products' design. The cluster is capable of handling large volumes of demand and has created a niche in the international market. Fifty to sixty per cent of the metal items manufactured in the city are exported. The cluster seems to be 'dancing with the customer' to be relevant and continue growing. The cluster produces finer, lightweight items that are in demand in contemporary times. Additionally, the cluster manufactures combination goods of metal with wood, stone,

glass, ceramic, rope, etc. The Moradabad cluster is considered to be growing with this product-based diversification.

However, it is facing threats from neighbouring countries like China, which is using mass production systems to predate in the market. Their 'handicrafts' are actually not handicrafts; they are machine-made. Undoubtedly, handicrafts may involve the use of machines, but handwork is important (GST Council, 2018). Moreover, the items should have a visual appeal that comes through artistic work of a substantial nature; they also possess distinctiveness, which separates them from machine-made goods. Those who know handicrafts tend to opt for Moradabad metal craft.

Diversification in Items Produced and Metal Used

Moradabad is known as '*peetalnagri*' or brass city due to the use of brass (copper plus zinc) in producing metal wares. However, the cluster in the last century has graduated from the manufacturing of brass utensils to brass-based crafts to a combination of metal crafts in the past two-three decades. In the early 1980s and 1990s, manufacturing focused solely on brass items. But, in the last 10–15 years, the use of other metals such as aluminium, iron, and steel has become dominant. Opinions vary regarding the extent of brass-based work being done in the city. Some are suggesting it is only 10 percent, others are estimating 15-20, and still others are indicating 20-25 percent. On average, it can be said that 15 to 20 per cent of the craft work is brass-based. Aluminium is now the main substituting metal used, making up around 50-60 percent of the metal products manufactured. Other substituting metals, namely iron, steel, and copper, make up another 25-30 percent. The reasons cited for diversification in raw material away from brass include changes in the international destination market, consumer preference for lighter metal crafts, high brass raw material cost, as well as competition from Chinese products, which are cheaper in the market.

An analysis of data from the London Metal Exchange (LME), one of the largest commodity exchanges in the world, shows an increasing trend in the prices of copper and zinc, the two constituents of brass. In contrast, the price of aluminium has remained relatively stable.⁴ As told by local voices, since 2008, there has been a decline in the use of brass because of its rising price. As per LME, between 2008 and 2023, the price of copper fluctuated between 4000 and 9000 USD per tonne, while zinc ranged between 1000 and 3000 USD per tonne. The price of aluminium ranged between 1000 and 3000 USD per tonne during the same period. Currently, the price of copper is nearly USD 9000 per tonne, zinc is around USD 3000 per tonne, and aluminium is approximately 2000 USD per tonne.

The role of exporters and international buyers is also quite significant in this diversification. Generally, exporters are aware of the buyers' preferences, as many of them participate in the international trade fairs and exhibitions. They also have established relations with international buyers. The design of a particular handicraft item is determined either

⁴ <https://www.westmetall.com/en/markdaten.php>

mutually or exclusively by buyers. Sometimes these buyers also visit the city to negotiate the price and design of the product. It was also observed from the interview that orders of products from the international buyers and their delivery take some time. As raw materials are purchased based on available funds, fluctuations in raw material prices during this period can affect their profit margins. Some exporting units said that China's production of brass-like items is lighter due to the use of combination materials such as aluminium and iron. The cost of production is also very low because of their mass production system (see E & Y, 2012). Additionally, with electroplating, it becomes challenging to immediately discern whether an item is made of brass or of combination metals.

Overall, a shift in the uses of metals from pure brass-based products to combination products can be easily identified in the city. Still, 15-20 per cent of products are made in brass, which are highly sought in Gulf countries. Aluminium based items are mostly in demand in European countries and in the United States. In the domestic market, mostly iron-made products are in demand due to their lower price.

Preference of Metal Sheet Over Ingot in Making Products

Another aspect that emerged during discussion is related to uses of ingot and metal sheet in making products. The choice between ingot and sheet depends on the nature of the item to be manufactured as well as the cost involved. Generally, brass in ingot form (with copper and zinc ratios of 70:30, 73:27, and 75:25) costs between Rs 500 and 600 per kg, while aluminium ingot costs between Rs 150 and 240 per kg. In the case of metal sheets, the prices were Rs 150-200 more for brass and Rs 100 more for aluminium. If an item can be manufactured in both ingot and sheet, then the preference is for the sheet, as illustrated in Table 3.

Table 3 illustrates the comparative cost between ingot and sheet using a nine-inch plate as an example. A nine-inch plate made of brass using ingot will require one kilogram of material, while the same plate made of aluminium will require only 600 grams of material. If the same item is manufactured through sheet, it will involve even less use of material, resulting in the same plate requiring 500-550 grams of brass or 400-500 grams of aluminium.

Table 3: Illustration – Manufacturing of Nine-inch Plate

<i>Metal</i>	<i>Ingot</i>				<i>Sheet</i>			
	<i>Raw Material Required</i>	<i>Raw Material Cost (per kg)</i>	<i>Other Costs (per kg)</i>	<i>Total Cost</i>	<i>Raw Material Required</i>	<i>Raw Material Cost (per kg)</i>	<i>Other Costs (per kg)</i>	<i>Total Cost</i>
Brass	1 kg	500-600	300	800-900	500-550 gm	800	300	700
Aluminium	600 gm	150-240	300	500-550	400-500 gm	300	300	400

Note: Aluminium considered for calculation of Rs 220 or Rs 240.

Source: Based on field interactions.

With an average of Rs 200 per kg for the cost of producing an unfinished item, plus Rs 100 per kg for normal finishing or polishing, a plate made of brass ingot will cost between Rs 800-900. The same plate made of aluminium, costing between Rs 220 and Rs 240 per kg, will cost between Rs 500-550. When using sheet, the cost will be around Rs 700 for brass and around Rs 400 for aluminium. Although sheets are more expensive, they involve less raw material, reducing the cost of production. The decision between using ingot and sheet depends on the feasibility of producing the item. It's not that sheet items have just begun being manufactured. The production using sheets began around 1940 with imported sheets, but its proportionate use has increased recently (Burra, 1989). Currently, the ratio between ingot and sheet is 60:40, respectively.

Equipment and Machine Used in the Production

The majority of the work in the cluster is carried out by artisans using both hand and semi-automatic equipment and machines. The casting in ingot is done by hand. Other processes, such as scraping and grinding, are performed using semi-automatic machines that craftsmen have devised (*jugaad*) to suit their requirements, involving craftsmen engaged in machine making. These semi-automatic machines have been in use for the last 40 years. These machines are procured mostly from Moradabad itself. Meerut and Jalandhar are other important areas from where these machines are purchased. Uses of automatic machines, such as computer-aided design, are used only by big firms.

In the case of sheet work hydraulic machines are commonly used, which are purchased from Gujarat and Maharashtra. Other machines, such as pressing, punching, and lathe machines, are procured locally from Moradabad, as well as from other districts in the state like Meerut, Aligarh, and Bagpat, as well as from Punjab (Jalandhar and Ludhiana). The CNC machines have also been introduced for sheet work. However, there are not many users of CNC machines as they are computer-operated and require pre-programming to produce the items. The artisans lack the required skill to operate these machines. Moreover, these machines are expensive. For example, a CNC lathe machine costs around Rs 7-8 lakh if bought from China and Rs 40 lakh from Italy. In contrast, a non-computerised lathe machine from Ludhiana costs only Rs 1.25 lakh. It has been reported that robotics has also begun to be used in the craft, but only three or four major firms have procured it. Some of these firms produce items for IKEA, an international brand that manufactures a variety of household items.

Labour Processes in the Production

The labour process in the craft can be identified from its origin, type, gender composition, work arrangements, and wage payment system. Broadly, labourers can be divided into two categories. Artisans, who are skilled, working mostly as a single processing unit, have more bargaining power in determining their wages and payment. Those who are unskilled in the craft are mostly helpers working with artisans and *karkhaneedaars*. They also engaged in exporting units in loading and unloading, packaging, and arranging the products. Both

artisans and helpers (unskilled workers) are primarily city-based, with some coming from villages neighbouring Moradabad city and nearby districts like Sambhal and Amroha. The craft is mainly male dominated with approximately two percent female participation, mainly in checking, packaging, and some in embossing.

Predominantly from the Muslim community, these artisans inherit their highly skilled craft training. Formal training has limited impact as it is generally short-term and generic. However, the number of craftsmen has declined. The local voices interviewed claim of five lakh artisans in the craft, around 10-15 years ago. The number has dwindled to 2.5 lakh as artisans migrated outside Moradabad within the country to the states of Gujarat, Maharashtra, West Bengal, Odisha, Karnataka, Punjab, and Andhra Pradesh, as well as outside India to countries like Nepal and Bangladesh. Some have switched to other work in the city. Moradabad District Export Action Plan 2020-21 puts direct and indirect employment in the cluster at 3,50,000 (MoCI, 2020). Wages for artisans are either calculated on a piece-rate or a kilogram basis, with options for daily and monthly payments available to those employed as daily wagers.

Table 4: Wages Paid in Different Segments of Work

Type of Work	Calculation Basis	Shift (hr)	Average Wage per day (in Rs)
Artisans			
Ingot Making	per-kilogram	12	1000-1200
Casting	per-kilogram	8	500-600
All other	per-kilogram/piece rate	8	500-600
Unskilled Workers	Daily	8	300-400 (Male) 200-250 (Female)

Source: Field Survey

The average wage per day is approximately Rs 500-600, regardless of whether one is working with ingot or sheet. In ingot, the making of ingots and casting are paid on a per-kilogram basis. However, ingot-making involves a 12-hour shift with wages ranging from Rs 1000-1200, casting involves an eight-hour shift with wage between Rs 500 and 600. Other tasks are typically carried out in an eight-hour work cycle and can be paid on either a per-kilogram or piece-rate basis. It has been noted that 70 to 80 percent of the work is paid on a piece-rate basis. The wages paid are determined by the size of the item, the quantity, and the quality of work. On average, the wage is between Rs 500 and 600, with differences of Rs 100 and 200 depending on various factors. For example, polishing a cup plate costs Rs 15 per piece, while polishing a *diya* costs Rs 5 per piece. Likewise, for scraping and grinding, it may be Rs 1-2 for a small piece and Rs 8-10 for a larger one. If the item has an intricate design that requires hand scraping, it may cost Rs 100 per piece. Similarly, for engraving, for instance, the eye of a bird, one gets Rs 1-2 per piece, while engraving a flowerpot with highly intricate and high-quality work may be Rs 400. In engraving, there are craftsmen who are considered celebrities,

producing very high-quality work. Their rates are on the higher side. The work of Shri Dilshad Hussain, the first Padma Shri in metal craft, falls under such a category.

On average, the wages for both small and big pieces come out to be equal. Small pieces with simple work can be produced in large quantities, unlike larger pieces that require more work. The *karkhaneedaar* provides job work to the contracting firm based on weight as well as quantity. On average, the *karkhaneedaar* contributes 4-5 quintals (400-500 kg) of job work per week, resulting in savings of Rs 15-20 per kg.

For unskilled workers the wages calculated on a daily basis are paid daily or monthly. For males, the daily wage for an eight-hour shift is Rs 300-400, and for females Rs 200-250 per day.

4. Challenges Facing the Cluster

The difficulties faced by craftspeople in micro and small units vary greatly. The growth of small firms is mainly constrained by cumbersome regulatory processes and compliances, inadequate infrastructure development (such as proper construction of approach roads to industrial areas from the main road), delayed payments by buyers, fluctuation in raw material prices, and a crisis-like situation (COVID-19, Ukraine war) in the international market. Because small businesses and artisans are involved in the same manufacturing processes, issues that small businesses face also impact artisans and micro units. Payments to micro units, for instance, are directly impacted by order cancellations or delays, which in turn impacts the micro units' operations. Their work is negatively impacted since many of these are single-process businesses that depend on daily revenue. Lack of new technology, autonomous market access, and adequate formal training also affect artisans and micro units. In this section, several of these topics are covered in further detail.

- a) Regulatory Compliances: According to the UP Nivesh Portal and small units surveyed, there are 38 departments in the state that offer industrial services.⁵ A large number of them need to be contacted, no-objection certificates (NOCs) obtained, and fees paid during the production and sale process in the market. The Municipal Corporation, the Moradabad Development Authority, the Labor Department, the Pollution Control Board, and the Fire Department are a few of these. Small units demonstrate that, despite UP's single window clearing approach, the procedure is time- and money-consuming. These problems also emphasize harassment. All of this makes it more difficult to begin and increase manufacturing. The visits from departments of labour, fire, and pollution also instill dread in the units. This indicates that either the rules themselves are not clear to them or the units are not adhering to the rules and regulations.

⁵ <https://niveshmitra.up.nic.in/services.aspx>

- b) Export Incentives: Under the export-incentivizing Focus Product Scheme (FPS), metal crafting has advanced, as stated by exporters and *karkhamedaars*. The program's main goal was to encourage the export of goods with a high potential for both export and employment. When the Foreign Trade Policy of 2009–14 (FTPs) was implemented, the incentive in the form of duty credit scrip, which was first offered in 2006, was raised to two percent (MoCI, 2010; MoCI, 2007). Handicrafts were provided with a higher incentive of five percent. In addition, a two percent bonus benefit was given making the highest duty credit scrip that could be applied to handicrafts as seven percent of the exports' free on board (FOB) value in free foreign exchange.

In 2015, the FPS was replaced with Merchandise Export of India Scheme (MEIS). In response to the USA's challenge to the MEIS subsidy at the WTO, the latter was further replaced in January 2021 by the Remission of Duties and Taxes on Export Products (RoDTEP) scheme. The RoDTEP is a duty exemption and remission program, in contrast to the MEIS and FPS, which were export incentive programs. Not only have incentives decreased due to the dilution of FPS, but the coverage of products has also decreased. There was a 3–5% duty-free credit scrip under MEIS that was exclusively available for certain metal craft items (MoCI, 2015). For handicrafts, the RoDTEP rebates vary from 0.01 to 2.30 percent (in 2021 the maximum was 2.40 percent) (EPCH, 2024; EPCH, 2021). As Moradabad's metalworking industry is export-oriented and vulnerable to the global economic downturn, there has been a demand to safeguard it with export subsidies. EPCH stipulated that the rate must range from five to seven percent (The Economic Times, 2021). Every export unit surveyed claimed that their exports had not increased as a result of the government's removal of benefits.

- c) Issues of Common Infrastructure Development: Firms in industrial areas expressed serious discontent regarding the level of infrastructure. Firms located in Niryat Nagar on Delhi Road told that the access roads have only recently been constructed, though the industrial area was founded in 1994. Since manufacturing processes cause toxic emissions due to the use of metals and there are fire dangers, it is required of industrial enterprises to keep an emission treatment facility and a fire tank with a capacity of one lakh litres. However, entrepreneurs lamented that this takes up manufacturing space and drives up their maintenance costs. They suggested that units may be charged a monthly fee for the same facilities, which the government could offer on a shared basis. Additionally, units bemoaned the absence of a strong raw material bank; under CHCDS, only one scrap-based RMB has been established. Set up through a private Special Purpose Vehicle (SPV), the RMB offers raw materials at the same price as other suppliers. One needs to place external orders in order to obtain raw materials of high grade. Therefore, raw material banks with regulated pricing are in demand. As per the information obtained from the DIC office there are a total of 11 CFCs set up under ASIDE, ten under CHCDS, and one in ODOP. All of these are managed by private SPVs.

Additionally, there are insufficient logistics and warehousing facilities. Although inland transportation takes time, customers want their orders delivered quickly because they have a lot of options.

The infrastructure issues are tremendous in the old city, a center for artisan activity. This part of the city is extremely crowded and without any safety or pollution controls. Attempts are being made to move these units to clusters planned on the city's outskirts. However, there are no takers. Artisans are reluctant to relocate as it would disconnect them from their social milieu and the facilities available at their doorstep. Such socioeconomic capital is lacking in new locations. Commuting is also undesirable as it would increase transportation costs to and from the city.

- d) Issues in Implementation and Collection of Goods and Services Tax- High rates, compliance, and GST refunds are significant issues in the cluster. According to the exporting units and *karkhaneedaars*, GST rates are 18 percent on raw material and 12 percent on finished items. Since these units produce items in small batches, the high taxes reduce their profit margin as buyers also bargain for lower prices, resulting in a reduction in wages. Moreover, separate personnel are required to meet this requirement. Often, that is a problem for micro units that are generally single-member units. Lacking in resources and financial literacy makes GST a problem area for them. Although units with an annual turnover under Rs 40 lakhs are exempted from GST, all those units that are suppliers to contracting firms have to meet the minimum documentation requirement of GST. The *Kachhi Parchi* system, wherein *karkhaneedaars* get raw material without paying GST, is still prevalent. The dealing is done without proper billing. Some of the reasons for the prevalence of this system include non-receiving of advance and late refunds of GST. Since they work on very low margins, they find it difficult to have 18 percent of their cash flow stuck in the GST system for months. However, this causes problems for contracting firms in getting a refund. In fact, in some exporting countries, the buyer demands tax compliances as a precondition. There are also agencies that provide fake GST bills for some minimum payment. Since GST is to be paid at each stage, if one stage is scrutinised and found guilty, the reverse payments to the following stages are stopped. Also, refunds take between 90 and 180 days. The small firms are found making payments to commission agents to get refunds, with the commission charge being around three percent.
- e) Inter-firm Disputes- Cancellation of orders and delayed payments due to international upheavals affect the relationships between firms. As *karkhaneedaars* are the ones who coordinate the work done by a diverse group of artisans, they feel the pressure, which is then passed on to the artisans. Contracting firms offer them lower rates, which in turn reduces wages for artisans as well. Working with a low profit margin, they require prompt payment to sustain their operations. In the absence of work, they are willing to work at the given rate. Handwork is not properly valued and priced, resulting in reduced wage payments to artisans. One

karkhaneedaar mentioned that he used to employ 70-80 artisans, but now only 30 artisans are working. His profit margin, which was 10-12 per cent of the product earlier, has reduced to 3-4 per cent in FY 2022-23. Even during covid times there was uptick in the work in the cluster due to high online demand and movement away from China. The Ukraine crisis however has affected the work orders and sales from the cluster which affected his work also. Currently, he is making daily wage payments of Rs 400-500. Before the crisis, the wage payment was Rs 700-800. His annual turnover has also reduced to Rs 50-60 lakh in FY 2022-23 from Rs 2.5 crore in FY 2021-22. A similar issue was highlighted by another *karkhaneedaar*, whose turnover during the same period reduced to Rs 80-90 lakh from Rs 2 crore. The units lamented about a 40-50 per cent reduction in work in the cluster. Europe is a significant market for these products, but demand has declined due to the Ukraine crisis.

Moreover, there are situations where a contracting firm asks a *karkhaneedaar* to prepare a design but then gives the final order to someone else who offers a lower rate. Such situations often arise during periods of reduced work. These market imperfections impact the health of the cluster.

- f) Provision of Formal Trainings- It appeared from the interactions that the existing training courses are general in nature and have short durations. The course design is insufficient to improve the necessary specialised abilities. Since the craft is divided into numerous segments, specialized training is required for each one. The state government's One District One Product (ODOP) training, which lasts for ten days and comes with a toolkit, is one of the ongoing training programs in the state. Other programs include the six-month Hastshilpi Kaushal Vikas Prashikshan (HKVP) Yojna, the six-day Vishvakarma Shram Samman Yojna (VSSY) program, and the six-month Guru Shishya Hastshilp Prashikshan (GSHP) program. The first three are run by state government, the last one by the Ministry of Tourism, Government of India (GoUP, 2020a; GoUP, undated a; GoUP, undated b; DCH, 2022). Furthermore, HKVP although covers Moradabad, not available every year. The scheme is made available to only limited districts out of selected 28 districts, depending upon each year budget. It is a six month training which gives monthly stipend of Rs 500, insufficient to draw in fresh entrants into the trade. VSSY on the other hand is available only for ten traditional occupations which does not include metal craft. Likewise, GSHP is available upon request from the organization hosting the event. The scheme is not operational in the district.

So, it is basically ODOP which is a principal skill development scheme. A ten day ODOP training offers each trainee a daily stipend of Rs 200 along with a toolkit of approximately Rs 18,000. For freshers, the ten days are insufficient to learn the craft and for old who mainly require exposure to new technology, marketing and digital training is found to be lacking. It is important to note that ODOP offers RPL (Recognition of Prior Learning) certification, which although gives recognition to

the craftsmen but those who are already employed in the field are not very keen to take this training.

The focus under ODOP is mainly on newcomers to preserve and promote the craft. According to the DIC office, it is mostly a new generation of people who are receiving training under ODOP. For such newcomers, longer-duration training becomes even more significant as the current training does not make them skilled enough to secure a job. The 10-day general training is deemed insufficient. It has been suggested that each segment of the craft needs customised training as well as a customised toolkit. At the same time, small units lament not only the lack of skilled labour, but also its irregular availability. Although training is provided at the shop floor level, retaining skilled labour remains a challenge. Since the labour force is largely uneducated, their attitude towards the work affects productivity. The problem is also acute at the middle management level.

5. Institutional Set Up and Its Role in Policy Implementation

The establishment of brassware corporation in 1974 can be termed as a major intervention by the government that provided financial assistance to artisans in procuring raw materials and purchase of machines up to the cost of Rs 10,000. Headquartered in Moradabad, the corporation had branches in other parts of UP. It also established a *petal basti* to offer a better living and working environment for artisans. The corporation got defunct in later years and no longer functioning. In 1983-84, MHSC was set up on the same site by the Government of India with the support of the Government of UP and the United Nations Development Programme. The centre provides training support, metal finishing (electroplating, powder coating, lacquering, etc.), a Testing and Calibration Laboratory (NABL Accredited), and a Design Bank.

In the current scenario, institutional set up functioning in the city can be divided into two parts. One, that is provided and monitored by DIC office in Moradabad, and the others functioning under Ministry of Textiles (MoT) and Ministry of Commerce and Industry (MoCI). DIC Moradabad like all other DICs is the implementing agency for central and state schemes aimed at promoting MSMEs. Registration of unregistered enterprises under Udyam has been a major activity that was going on during our field visit in May 2023. But as told by the Deputy Commissioner (DC), DIC, only 20 percent of manufacturing MSMEs had been registered. Although registration provides range of benefits from identity to priority sector lending, public procurement (minimum 25 percent), credit guarantee and others, micro units are hesitant to register due to the fear of being subjected to various regulations. The Government of UP has recently started Mukhymantri Suksham Udyami Durghatna Beema Yojna of Rs 5 lakh for those registered under Udyam. The officials had confidence that the scheme would give impetus to registration. Artisans and *karkhaneedaars* did not see much benefit of registration. Some of them told of having separate registration under Pehchan scheme of MoT, hence a new registration will not solve their basic problems. However, we

found that both the schemes have different objectives. The lack of awareness and the fear of being subjected to rules and regulations are the major factors of low registration.

DIC is involved in each component of the support system required for start and operation of MSMEs. Other than registration, DIC is involved in providing credit support, training and marketing of the product. Currently, credit support is offered under state government-run schemes of ODOP, Mukhyamantri Yuva Swarozgar Yojana, and UP Micro and Small Enterprises Technical Upgradation Scheme (GoUP, 2018; GoUP, 2020b; GoUP, undated c; GoUP, 2019). Prime Minister Employment Generation Programme (PMEGP), which is a central government scheme is also operational (MoMSME, 2022). However, the role played by DIC is limited and extend only upto preparing a list of probable beneficiaries. The loan is actually sanctioned by the banks which follow a set of conditions. To illustrate, all those who have availed loan in any existing scheme cannot take loan in another scheme. Similarly, those who have defaulted in the past are barred from availing loan. According to the manager of the lead bank in Moradabad, the good civil score of an applicant is a major criteria of loan disbursement. Physical inspection of the unit is also undertaken. It was found that in these schemes there is a provision of collateral free loan for a loan upto 10 lakhs, still banks ask for some kind of mortgages. How DIC can ensure a hassle-free loan is a major issue raised by artisans and *karkhandedaars*. Exporting units did not report such issues as they got a loan whenever is needed.

In case of training DIC receives applications and shortlist candidates under different schemes. ODOP (training component) and HKVP are the skill development schemes that are functional. Under ODOP, ten days' training is provided by external agencies which are selected by DIC. The candidates, maximum upto 25, are given per day stipend of Rs 200 and a toolkit related to the craft on successful completion of the training. In HKVP, sixth month training is provided at the master craftsmen place in a Guru-Shishya system, wherein at most 10 candidates are trained with a monthly stipend of Rs 500. The craftsmen get Rs 4000 per month and Rs 1000 for raw material. The training is not available every year. Of the 28 districts under the training scheme training is available in selected depending upon the year-wise budget. The entire training is financed by the government of UP. However, some issues related to duration of training, course content, quality of toolkit, and employability of those who got training were raised.

With respect to marketing DIC office provides information about upcoming fairs and exhibitions, and it also reimburses marketing assistance as under ODOP and Handicraft Marketing Incentive Scheme (GoUP, 2019; GoUP, 2020c; GoUP, undated d). However, the information provided by DIC is limited to ODOP list of fairs and exhibitions. The information about fairs and exhibitions supported by ministry of Textiles is not provided. MoT also provides assistance in organising and participating in fairs etc. under National Handloom and Handicraft Development Programmes. The marketing link in the chain of assistance provided by MSMEs is found to be very weak. Many of the artisans and micro units are unaware of assistance provided by other central government ministries/departments. Information on how to go about exports is completely lacking.

The DIC also functions as a working institution for CFC. It is responsible for ensuring the quality and timely completion of CFC. Under ODOP, one CFC on Physical Vapour Deposition (PVD) coating has been implemented in the district, while the other two, Crystal PVD and Enterprise Resource Planning (ERP), are in the process of implementation. Additionally, there are 11 other CFCs set up under the ASIDE scheme of MoT and ten under the CHCDS scheme of MoCI. All these CFCs are set up by private entities, with no benefit accruing to artisans and micro units.

DIC is also working on the sustainability aspect of the cluster, replacing coal-based furnaces with gas ones. As per DC, DIC, the project has been given to SIDBI to implement gas-based furnaces. Four energy services companies have been given a contract to set up 25 such furnaces on a pilot basis. The project is known as Project Green Inclusivity (GRiT) (SIDBI, 2023). Half of the furnace's cost is contributed by SIDBI and the other half by the artisan. One such company is Mitcon based in Pune. The company, in collaboration with the local artisan we interviewed, has developed the prototype of the gas furnace and has installed the same at 12 places. All of these furnaces are used for producing brass ingot. The cost of this furnace is Rs 44,000. The project appears to be a long one and would not solve pollution and emission related issues in the near future. The artisans, local voices interviewed informed that about 1000-1500 units are engaged in ingot manufacturing, and another 50,000 in casting in city and surrounding villages.

Amongst the central government ministries, it is the textile and commerce and industry ministry that have an important role to play in the cluster. Both the ministries have helped in setting up CFCs under CHCDS and ASIDE schemes, respectively. The former is also assisting in training, marketing etc. through schemes under the National Handicraft Development Programme. MHSC, an important centre for training, design and testing, is under the ministry. The GSHP training scheme of the ministry that was provided in Moradabad earlier was found to be very effective. However, it is not available in recent years as its operation is subject to proposals made by the implementing agency. Under the scheme, the trainer receives Rs 30,000 per month, and the trainee receives Rs 300 per day. The training under the scheme is a longer one that lasts in general between 2 to six months.

Specialised agencies such as UNIDO have also been involved in the cluster development programme in Moradabad. The National Innovation Council (no more existing) and the Council for Scientific and Industrial Research (CSIR) initiated several innovation projects in Moradabad, including an improved coal-based furnace, the establishment of a Cluster Innovation Centre, and lacquering and cyanide-free electroplating (Sachan, Munagala, and Chakravarty, 2013). Local bodies such as industry associations are also very active. For instance, Moradabad chapter of Indian Industry Association, is found very helpful for the units. The association apprises government of the need of MSMEs for effective policy making, liaison at government level to help overcome troubles of units, provide consultancy to units in technology, legal and policy related matters, help identify market opportunities, conduct capacity building programmes etc. However, their assistance is limited to their

members which are basically small and medium units. The artisan's associations or the associations of micro units are lacking in the district.

6. Summary and Conclusion

The metal craft cluster of Moradabad is one of the major traditional craft clusters in India. The high standard of craftsmanship is exhibited by artisans, having been passed down through centuries. As the cluster is export-oriented, it is affected by upheavals at international level. Nevertheless, the cluster managed to endure and recover from these kinds of crises. In the light of these facts, the study attempted to analyze the pattern and procedure that has gone into making it a dynamic craft cluster. To gain an understanding of this, the study has looked at the cluster's functional dynamics, characteristics determining factors, growth obstacles and issues, and institutional role in supporting cluster expansion. The data for the investigation comes from case studies of artisans, micro and small enterprises and interviews of key officials.

The Moradabad cluster is location-specific and centered in-and-around Moradabad city, much like all other natural clusters that are defined by regional industrial specialisation. The cluster's overall spatial extent may be estimated to be between 20 and 30 kilometers from the city limits. The old city is home and production center to the artisans as well as *karkhandedaars*. Muslims make up the majority of artisans and *karkhandedaars*. Small and medium-sized production and exporting enterprises are dispersed across the city's industrial zones. The city's residential and commercial districts are interspersed, indicating the cluster's organic structure. The artisans are the backbone of the craft in terms of the functional specialisation of the cluster. Working over generations, they are so well versed in their craft that they can produce any item by just seeing the picture. *Karkhandedaars*, the linking pin between the artisans and exporters, stand in between, and exporters are on top. Exporters and big manufacturers have their own in-house production facilities but taking work from *karkhandedars* or directly through artisans is a common practice. Exporters take orders and mainly get them fulfilled through *karkhandedaars* in a job work system.

Flexible specialization is demonstrated by the production processes. The procedure is cooperative and competitive at the level of exporters and big manufacturers. An item is produced by a number of work segments, each carried out by a skilled craftsman. They are working in a vertically connected work chain on a job contract. Before the item is packed, the item passes through several hands, making actual valuation of an item difficult. What is more problematic is that in times of slump, it affects the wages of the artisans.

The cluster is characterized by two marketing systems: the international market, which is exporter-driven, and the domestic market, where artisans and *karkhandedaars* also engage in direct selling. It is these two marketing systems that are helping in the thriving of this cluster. Being an important handicraft export from India, the metal craft work has kept in tune with time and been able to fulfill changed requirements of the market in terms of items, their designs, and their preferred metal type. The increasing consumer demand from within the

country for decorative items in cheaper metals has also been met by the cluster. It is primarily the export market that provides strength to the cluster. As per the interactions, the design of the products changes very frequently, with 40-50 percent of the design of an item changing every 15-20 days, making it one of the very innovative clusters. The cluster has modified so much that the brass manufacturing has remained just 15-20 percent. Earlier, manufacturing focused solely on brass items. But, in the last 10-15 years, the use of other metals such as aluminium, iron, and steel has become dominant. Aluminium makes up 50–60 percent of the products manufactured. Changes in consumer demand, high raw material costs, competition from China, imitation push by exporters, and changes in the selling market are the reasons cited for the change in raw materials used. Within metals, the form of raw material used has also been changed. It is ingot, which is mainly used, but the sheets are also increasingly preferred as sheet-based work involves a low amount of raw material, which brings down the cost. The other advantage is that items produced are lighter in weight. But it is not that the sheet use has started only nowadays. The production using sheets started before independence, however, its proportionate use has increased recently. Currently, the ratio between ingot and sheet is said to be 60:40, respectively.

Being an artisanal cluster, it is the traditional mechanism that is strongly exhibited in the cluster. The majority of the work in the cluster is carried out by artisans using both hand and semi-automatic machines. The machines are largely improvised, locally sourced, and obtained from neighbouring states such as Punjab. While CNC and robotics have been introduced to production processes involving sheets, their utilisation is limited. The primary stage of obtaining raw material in the form of ingot as well as the casting is carried out in an age-old system of using coal-based furnaces. Efforts to shift it to a gas-based system are still in the pilot stage.

In the long history of cluster, with export as the mainstay, artisans have also seen progression to the position of *karkhandedaar*. Even those who started small have become big. However, the problems encountered by micro and small units are quite different. Small firms face issues related to regulatory compliance, withdrawal of export incentives, lack of infrastructure development, delayed payments, and international crises. However, as small and micro units are interconnected, the problems faced by small firms also impact micro units. The other issues that affect micro units involve lack of formal training, lack of exposure to new technologies, and difficulties in accessing markets independently. These units, basically those of *karkhandedaars* and artisans concentrated in the old city, have health as one of the major issues of concern. The question is, are there any solutions? The problems relating to common infrastructure and compliances can be easily tackled by creating infrastructure and undertaking process reforms. The need is felt for integrating the infrastructure requirements of these units with regional master planning. The plans of course need to be realistic in nature and implemented in a timely manner. As far as processes are concerned, rules, orders, and regulations could be made clear so that no violation takes place. The entire process of interacting with the government and its agencies could be made paperless, contactless, and faceless. GST is a big concern in the cluster for both micro and small. The problem with GST

is rates, compliance burdens, and refunds. There is a need to streamline rates, simplify compliance, and ensure timely refunds. As majority of the units are single process ones, it should be seen whether some personnel could be appointed in DIC to help these units fulfill the GST requirement. Industry associations are very important in this respect, but they are hard to come by for artisans.

For artisans and other micro units, DIC can play a significant role. DIC, which is in direct contact with MSMEs at district level, can actually meet the handhold needs of these units. However, that requires strengthening of DICs. The institution could be made effective by assigning field staff and a dedicated research wing to work hand in hand with units with respect to their needs of finance, its better utilisation, skill upgrading, technology, marketing, and various compliance related matters. Although various implementation works are being assigned to DIC, it undertakes many of them with the help of other agencies. Training is one such area. DIC could be made an apex body for training. Using local experts, which the others are also using, it can directly impart training. In fact, training blocks of its own can be built. For its effective functioning separate but integrated wings dealing with major requirements of MSMEs should be developed. Other than DIC, local voice organisations are critical for creating awareness about government schemes and building networks between artisans and governments. Similarly, industry associations can play an important role in facilitating market access, providing clarity about rules and regulations, and acting as a chain between units and governments to apprise each other's demands. Such associations are working for small business, the issue is how artisan units can be organised in some effective group. Health related issues of these units can be tackled, and sustainability of the cluster can be ensured when their needs are not just felt but effectively communicated too.

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