

2019

## Cluster Profile

# Plastic Products Manufacturing, Rawalpindi



### ***Turn Potential Into Profit***

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Ministry of Industries and Production (MoI&P)  
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## 1 Description of Cluster

### 1.1 Introduction

Plastic is a material comprising of any of a wide range of synthetic or semi-synthetic organic compounds that are soft and flexible and therefore can be molded into solid objects. In recent years, the use of plastic has increased tremendously as plastic has substituted other materials such as metal, paper, ceramics, glass and wood due to its strong characteristics of light weight, heat resistance, durability and much more. Presently, plastic is extensively used in a wide range of products including, kitchen utensils, auto mobiles, home appliances, packaging, electronics, construction etc.

The plastic industry is recognized as one of the fastest emerging industry that cater for the needs of local packaging, automobile, home appliances and construction sector. According to SBP study, there are about 6,000 plastic units in Pakistan, from which 60% are in Punjab with 360,000 workforce, 30% in Sindh with 180,000 workforce, 7% in NWFP with 42,000 workforce and 3% in Baluchistan with 18,000 workforce. Within Punjab industry is predominantly scattered in the major cities like, Lahore, Gujranwala, Rawalpindi and Gujrat. Primarily, Lahore and Gujranwala are famous for production of high end products and comprise of medium to large size enterprises, working as organized sector. Whereas, plastic industry in Rawalpindi is unorganized and comprises of a large number of small or cottage level units with exception of few medium and large units.

The manufacturing of plastic products in Rawalpindi started with production of low profile plastic products, especially, general purpose shoes (chapeles) and sleeper, bottles and simple kitchen items (jars, containers, storage boxes etc.). With the passage of time, cluster has transformed from a conventional low tech manufacturing of basic plastic products to a semi-automated manufacturing of wide range of plastic products relating to packaging, automobile, construction and kitchen utensils sector. The cluster is progressing towards high-tech manufacturing with machinery imported from Japan, Korea, Italy, Taiwan, Hong Kong, England, China and Germany. However, majority of units are still operating on low scale with obsolete and conventional technologies and suffer with the issues relating to managing operations, product standardization and skill competencies.

Presently, Rawalpindi plastic products manufacturing cluster is comprising of around 300<sup>1</sup> manufacturing units and is providing direct employment opportunities to around 5,000 people. The cluster is primarily catering for the domestic market needs, especially at local Rawalpindi level and adjoining regions. However, large units have been able to establish sales networks across the country and exporting as well.

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<sup>1</sup> Source: Rawalpindi Chamber of Commerce & Industry (RCCI); Pakistan Plastic Manufacturers Association (PPMA)



## 1.2 Defining the Products

There is a variety of products, that can be included in the product range of plastic products. Many sectors, including home utensils and appliances, packaging and storage, automobile, construction, FMCG and etc., are dependent on the plastic industry. The products manufactured in the Rawalpindi cluster mainly include, but not limited to the following.

- Bottles and Bottle Caps (different types and sizes)
- Disposable Dinnerware and Tableware
- Kitchen Utensils
- Storage Items (Jars, Containers etc.)
- Packaging Items
- Woven Sacks
- Construction and Sanitary Items
- Plastic Furniture
- Electrical Panels and Fittings
- PVC Shoes and Sleepers
- Disposable Syringes

## 1.3 Core Cluster Actors

The manufacturers of the above mentioned products are the core cluster actors. According to industry sources, Rawalpindi plastic products manufacturing cluster comprises of around 300 manufacturing units, with majority of the units are of small and cottage sizes, with exception of few medium and large ones. The key industry statistics are as follows:

**Table 1: Plastic Products Manufacturing Cluster, Rawalpindi**

Number of Units	<p>Approximately 300 units</p> <ul style="list-style-type: none"> <li>• 10 Units, Large and Organized (<i>Registered Member of Rawalpindi Chamber of Commerce and Industry</i>)</li> <li>• 30 Units, Medium and Small (<i>Organized and Registered Member of Rawalpindi Chamber of Commerce and Industry</i>)</li> </ul> <p>Moreover, as per Rawalpindi Chamber and Industry Sources there are around 250-260 units of Small and Cottage size operating as unorganized sector in Rawalpindi. These units manufacture different products like plastic shoes, low profile furniture, plastic pots etc. These Units are connected with different distributors and shop</p>
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	owners in different cities for their products selling. Most of their sale is domestic.
Employment Generated	About 2,500 people are directly employed by the manufacturing units. Basically, plastic manufacturing is not highly labor intensive. Generally, manufacturers engage the temporary labor as per the production requirement and demand.  The estimated employment generation involving temporary labor or indirect labor is not available.
Estimated Revenues	Approximately Rs. 28 Billion
Capacity Utilization	60% to 85%

Source: Rawalpindi Chamber of Commerce & Industry (RCCI); Pakistan Plastic Manufacturers Association (PPMA); Directory of Industrial Establishments in Punjab

#### 1.4 Other Cluster Actors

The key cluster support actors who provide support services to core cluster in the area are including but not limited to raw material suppliers, machinery suppliers, finishing and packaging service providers etc.

**Table 2: Other Support Actors, Plastic Products Manufacturing Cluster, Rawalpindi**

Description	Details
Raw Material and Chemical Suppliers	The major raw material required for manufacturing of plastic products comprises of small hard granules, resins and different chemicals. The traders and suppliers of these raw material are operating in the cluster. Majority of raw material is imported from China, Saudi Arabia, UAE and Far eastern Countries, whereas high quality food graded granule or resin is imported from Germany and USA.  The traders within the cluster or from other major cities (i.e. Karachi, Lahore and Gujranwala) supply both local and imported raw material to the manufacturers.
Machinery Suppliers	Plastic processing machinery is mostly imported from Japan, Korea, China and Germany. However, locally manufactured machinery is also being used. Majority of imported machinery suppliers as well as manufacturers of local machinery are located in Karachi, Lahore and Gujranwala.
Traders, Wholesalers and Distributors	A large number of Traders, Wholesalers and Distributors are operative in the cluster for the sale of finished plastic products in the Rawalpindi city as well as across the country.

## 1.5 Geographical Location

The cluster is scattered around the city; however main concentrations are on:

- Rawat Industrial Estate
- Industrial Estate I-9
- Pir Wadai
- Kahota Triangle (Humak)
- Westridge

Majority of organized sector is located at Rawat Industrial Estate and I-9 Industrial Estate, whereas, organized sector is also located in the other areas as stated above.

## 1.6 Current Cluster Scenario

The cluster requires major investment for transformation of industry from semi-automation to complete automation in order to be competitive in the market. Similarly, more attention is required in availability of locally made dyes and molds, which are presently being imported. The non-availability of local molds and dies restricted the manufacturers to produce the typical products with limited design variations. Majority of units are operating as family businesses and lack managerial competencies.

The organized sector is capable of producing quality products whereas the unorganized sector produces low quality, cheap products through excessive use of plastic scrap. During the last decade, the unorganized sector has grown much more rapidly comparing to the organized sector. The cluster direly needed to comply with the international environmental, management, safety and sanitary standards.

Moreover, the recent penetration of cheap Chinese products into Pakistan has made the competitive situation in the local plastic industry very intense. Local manufacturers have to import raw material which has a substantive cost of their total produce while Chinese products offering a large variety at affordable rates have made survival difficult for the local industry.

## 2 Analysis of Business Operation

### 2.1 Production Operations

Plastic manufacturing products include variety of finished goods, therefore the production operations and manufacturing processes vary for different kind of products. Therefore, individual business owners have distinctive production process requirements as per their finished goods requirement. Majority of the processors are involved in injection molding, which is most appropriate process of production of household utensils and disposable items that comprise of the major demand in the cluster.

There are several different processing methods used to make plastic products. Below are the main methods in which plastics are processed to form the products that end consumers use.



**Table 3: Production Processes for Plastics Products Manufacturing**

Sr. No.	Molding Process	Products
1	Extrusion Molding	Pipe, fiber , film, sheet and thermoforming, profile, pipe, wire and cable etc.
2	Injection Molding	Bucket, housing of automation equipment
3	Blow Molding	Container, jar, bottle
4	Vacuum Forming	Pack cases (i.e. thin film product)
5	Pressure Forming	Suitcase (i.e. thick sheet product)
6	Rotation Molding	Bottle, doll

***Extrusion Molding*** -- the main process used to form plastics. A heated plastic compound is forced continuously through a forming die made in the desired shape (like squeezing toothpaste from a tube, it produces a long, usually narrow, continuous product). The formed plastic cools under blown air or in a water bath and hardens on a moving belt. Rods, tubes, pipes and sheet and thin film (such as food wraps) are extruded then coiled or cut to desired lengths.

Plastic fibers also are made by an extrusion process. Liquid resin is squeezed through thousands of tiny holes called spinnerets to produce the fine threads from which plastic fabrics are woven.

***Injection Molding*** -- is the second most widely used process to form plastics. The plastic compound, heated to a semi fluid state, is squirted into a mold under great pressure and hardens quickly. The mold then opens and the part is released. This process can be repeated as many times as necessary and is particularly suited to mass production methods. Injection molding is used for a wide variety of plastic products, from small cups and toys to large objects weighing 30 pounds or more.

***Blow Molding*** -- pressure is used to form hollow objects, such as the soda pop bottle or two-gallon milk bottle, in a direct or indirect method. In the direct blow-molding method, a partially shaped, heated plastic form is inserted into a mold. Air is blown into the form, forcing it to expand to the shape of the mold. In the indirect method, a plastic sheet or special shape is heated then clamped between a die and a cover. Air is forced between the plastic and the cover and presses the material into the shape of the die.

## 2.2 Raw Materials

Raw material for the plastic products manufacturing comprises of small hard granules or resins, which are mostly imported from China, Saudi Arabia, India, UAE and Far Eastern Countries. Whereas, special grade raw material is imported from Germany and USA. These plastic granules are then melted in molten state at high temperature and dyed to the desired shape and size.

Following are the main raw materials or inputs used in production of plastic goods.



**Table 4: Major Raw Materials**

Description	Details
Poly Ethylene Terephthalate (PET)	Used for fizzy drink bottles and frozen ready meal packages.
High Density Poly Ethylene (HDPE)	Used for milk, water drinking and other washable liquid bottles.
Poly Ethylene (PE)	The major thermoplastic material, has established its usage in packaging film, household articles, automotive and industrial parts.
Poly Propylene (PP)	Used in the form of woven bags, margarine tubs, microwaveable meal trays, household articles, furniture and packaging film.
Poly Styrene (PS)	Being consumed in yoghurt pots, foam meat or fish trays, hamburger boxes and egg cartons, vending cups, plastic cutlery, protective packaging for electrical and electronic parts, house hold articles, automotive parts and packing material.
Poly Vinyl Chloride (PVC)	Used for food trays, cling film, bottles for squash, mineral water, shampoo, doors, windows, pipes & fittings, profiles, food packaging, furniture, electronic components, foot-wear and cables.
Low Density Poly Ethylene (LDPE)	Used in manufacturing of carrier bags and bin liners

### 2.3 Technology Status

There is lack of use of modern manufacturing machines and techniques. Currently, semi-automatic machinery is being used by the industry. The required machinery is mainly imported from China and Taiwan. However, local machinery is also available from Gujranwala and Lahore.

Dies and molds are important components for manufacturing high quality and standardized products. Mainly, manufacturers are using imported dies / molds, especially from China. According to industry estimates, around 6,000 molds are imported from China every year by the cluster. Locally made dies and molds are generally produced through conventional machine tools that limits manufacturers production capability to produce special / modern designs. Moreover, conventional die making method also increases the duration of die making and sometimes it takes more than one year.

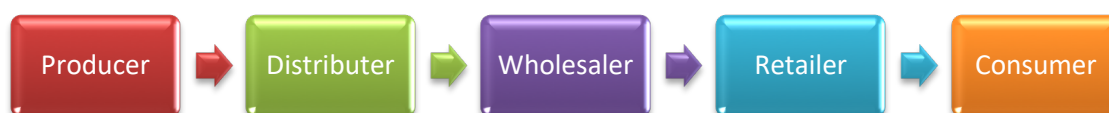


## 2.4 Marketing & Sales

Rawalpindi Plastic Products Manufacturing Cluster is primarily targeting the local market; around 80% of the plastic goods produced in the cluster are sold in the nearby regions including, Khyber Pakhtun Khwa, Azad Kashmir, Attock, Chakwal, Jhelum, Islamabad etc. Whereas rest of the products are distributed to other cities across Pakistan. A few of the manufacturers are also exporting the plastic products to different countries in the world.

Presently, the cluster primarily caters to the demand of local market; however, there is lot of scope for exporting locally manufactured plastic products to various markets in the Middle East, Africa and even USA, to fetch millions of dollars.

The sales and distribution network flow in local market trade is as follows;



Some of the manufacturers also have their own retail and distribution arrangements for distribution of products. Additionally, export agents and local sales agents are also working to facilitate sales of plastic products.

## 2.5 Financing

Generally, investors rely either on their personal investment or friends and family sources of financing. However, almost all the registered financial institutions of Pakistan have their branches within the geographical area of the cluster and are providing the financing. However, financing to plastic manufacturers is predominantly limited to larger units.

At present, no financial institution has developed / offered any customized lending scheme for the requirement of plastic product manufacturers. The available financial products are not appropriate to cater the requirements of the cluster, especially interest rates are very high.

## 2.6 Human Resource Management

The education level of workers / labor working in this cluster is very low, which is a major hindrance in learning and accepting new tools and techniques. The industry is forced to work on conventional lines. There are no vocational training facilities for the training of workers of this cluster. Most of the labor is semi-skilled and is trained on job.

There is no specialized marketing or accounts department. They identify sales leads through personal contacts and mostly no proper accounts are maintained. Therefore, certain problems related to tax return, monitoring and evaluation are faced. The accounts are handled generally by primary or intermediate level employees. The production supervisors, designing or molding in-charge and accountants are considered as part of middle level management.

## 2.7 SWOT Analysis

### Strengths

- Easy availability of cheap labor
- Increasing domestic market having demand from both low-end and high-end segments.
- Industrial Zones facilities are available.
- Location is a competitive strength, as cluster is geographically linked-up with major cities.
- Diversified range of product mix.
- Good entrepreneurial skills

### Weaknesses

- The industry is largely unorganized and scattered.
- Technological obsolescence and lack of availability of modern technology
- Professional management is not perceptible in the cluster.
- The manufacturers are dependent on imported raw material
- Lack of Research & Development efforts
- Lack of vision / planning.
- Traditional designs and lack of innovations.
- Not getting benefits from support institutions.
- Intra-market price competition
- No internationally accredited testing laboratory
- Limited product innovation
- Lack of branding
- High power prices
- Nominal Export

### Opportunities

- Pakistan is emerging as a major consumer market and international demand is also on the rise for plastic products.
- Potential global market for export e.g. Middle East, Sri Lanka, Afghanistan, Africa, Bangladesh etc.
- High growth potential due to expected growth in housing, construction and automobile sectors

### Threats

- Domestic / international political situation
- Critical labor shortage of skilled workers
- Globalization and free trade, especially Import from China is a continuous threat to the local manufacturers which is succeeding to get sizable share in the market



- High custom duties on import of Raw Material
- Technological advancement in composite materials based plastic products

### 3 Institutional Setup

#### 3.1 Entrepreneurs Associations

##### **Pakistan Plastic Manufacturers Association (PPMA)**

Address: Suit # 8, 2nd Floor , B9/B2 , Estate Avenue, Metro Chowrangi, S.I.T.E Karachi

Tel: (+92 21) 36040111, 32585050

Email: [ppma@pakplas.com.pk](mailto:ppma@pakplas.com.pk)

Web: [www.pakplas.com.pk](http://www.pakplas.com.pk)

##### **Rawalpindi Chamber of Commerce and industry (RCCI)**

Address: Chamber House # 39, Civil Lines, Mayo Road, Rawalpindi

Tel: (+92 51) 5111055

Web: [www.rcci.pk](http://www.rcci.pk)

#### 3.2 Support Institutions

##### **Regional Business Center (RBC) – Small & Medium Enterprises Development Authority (SMEDA)**

Address: Chamber House # 39, Civil Lines, Mayo Road, Rawalpindi

Tel: (+92 51) 9273019-20

Web: [www.smeda.org.pk](http://www.smeda.org.pk)

Email: [rbcrawalpindi@gmail.com](mailto:rbcrawalpindi@gmail.com)

##### **Punjab Small Industries Corporation (PSIC)**

Address: Regional Office Moti Mahel, Murre Road, Rawalpindi

Web: [www.psic.gop](http://www.psic.gop)

##### **Trade Development Authority of Pakistan (TDAP)**

Address: Regional Office, 26-D, West Kashmir Plaza, Blue Area Islamabad

Tel: (+92 51) 9212174, 9207348

Web: [www.tdap.gov.pk](http://www.tdap.gov.pk)

#### 3.3 Banks and Financial Institutions

Almost all the registered financial institutions of Pakistan have their branches in the cluster.



## 4 Major Issues and Problems

- Majority of the existing manufacturing units need up-gradation to new plants and latest machinery to remain competitive in regard to quality and price not only globally but also in local market against imported products.
- A Technology Up-gradation Fund Scheme for plastic industry is needed. Such scheme may offer loan to local manufacturers at subsidized rates for machinery up-gradation specifically for setting up of new units with state-of-the-art technology.
- Lack of modern marketing and branding techniques is an issue restricting the growth and development of this cluster, as there is not any specialized marketing department even in medium level units.
- Further, absence of websites, branding and product advertisement, non-participation in national or international Exhibitions, lack of educated, certified and professionally trained / skilled workforce makes things more difficult.
- There are no export ware houses particularly for capturing South African market. Trade Development Authority of Pakistan needs to enhance its cooperation with the manufacturers in international exhibitions.
- They are using old machines for manufacturing plastic products and the capacity of these machines is very limited, which is also hindering these units in entering into export markets.
- The education level of workers/labor working in this cluster is very low which also creates difficulties in learning and accepting new tools and techniques.
- Cost of energy and continual supply of energy is another issue for the manufacturers that needs to be addressed to remain competitive in the market.

## 5 Investment Opportunities

The growing market both at domestic and international levels offers many lucrative investment opportunities to the investors. The need for following projects as potential investment opportunities in Plastic Cluster Rawalpindi has been identified on the basis of the key strengths of this cluster;

- Acrylic Buttons Manufacturing
- Air Bubble Packaging Wrapper
- Blow-Molded Plastic Product Manufacturing
- Disposable Plastic Cup Glass Manufacturing
- Disposable Plastic Syringe Making
- Drinking Straw Manufacturing
- Pet Bottles Manufacturing



- HDPE Bag Making
- Pharmaceutical Strip Manufacturing
- Plastic Buttons Manufacturing
- Plastic carry bag Making
- Plastic Jerry Can Making
- Plastic Toothpick Production
- PVC Battery Container Making
- PVC Coated Electric Wire Manufacturing
- PVC Insulation Tape Manufacturing
- PVC Pipe Manufacturing
- Rain Coat Manufacturing
- Spectacles Frame Manufacturing
- Water Storage Tank Manufacturing

Moreover, the following pre-feasibilities on 'Bio-degradable Plastic Bags (Manufacturing Unit), Injection Molding Plastic Products, Polypropylene Woven Bags (Manufacturing Unit) is available on SMEDA website and can be consulted for further information. The said documents can be downloaded from [www.smeda.org.pk](http://www.smeda.org.pk).

In case of any other relevant inquiry kindly visit SMEDA Regional Business Centre, Rawalpindi.