



FINDING OPPORTUNITIES IN CHAOS

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Plastic Industry of Pakistan: Prospects and Challenges amid Coronavirus Crisis

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1. Evolution of Plastic Industry

In the backdrop of increasing economic crisis and lowering GDP growth resultant of coronavirus pandemic, some industries are fighting courageously to help the government and healthcare workers in their struggle against the virus. Plastic industry is one of these valiant industries of Pakistan.

Plastic industry has been evolving tremendously since 1947. The British left no formal base for any industry. It is one of those inspiring industries that had started from scratch. Brief history of its evolution is as follows:

- **1947:** It was reported that some hand-molding machines were operating in Lahore.
- **1950:** Four plastic manufacturing companies; Golden Plastic , Maniar Plastic, Plastico & Atlas Plastics started their production to meet the needs of defense, industries and households.
- **1953:** First plastic and polymer research center was established with the establishment of Pakistan Council of Scientific and Industrial Research (PCSIR) in Karachi. At that time, plastic resin was used to be sold for Rs.3.05 per pound in local markets.
- **1964:** Pakistan was the only country in South East Asia to start producing Polyethylene (PE) by Valika Chemicals and was at par with Japan. Unfortunately, the industry was closed due to nationalization in 1972.
- **1965:** Pak-Swiss Training Center (PSTC) was established by PCSIR in collaboration with Swiss Foundation for Technical Assistance to impart training in precision, mechanics and instrument technology.
- **1966:** Arkoy Chemical Industries became the first unit to manufacture PVC pipes in Pakistan.
- **1968:** Polyester in large quantity was being produced and used in shirts made from "Karolin" cloth which was a popular trend then.
- **1970:** Pakistan switched to international system of measurements. Plastic Resin was started selling in grams instead of pounds, and a decrease in prices was recorded.

- **1971:** Import of plastic raw material were recorded at **Rs.30.7 million**. With Indian interference in East Pakistan, supply of jute was disrupted. Alternates were sought and nylon products became widely popular.
- **1973:** 120% increase in price of plastic resins was recorded till 1973. Plastic products worth **Rs.0.465 million** were exported for the first time.
- **1977:** "Rahber" a brand name of Plasticrafter, manufacturers of water coolers created uproar in the country. Rahber continued to dominate the market for next ten years.
- **1978:** Auto industry registered a downward trend and activities at all manufacturing facilities came to a standstill.
- **1980: Pakistan Plastics Manufacturers Association (PPMA)** was formed. The association was registered with the Ministry of Commerce in the month of May.
- **1980:** A major bottle neck of plastic industry was removed by allowing import of injection molding machines from 1- 8 ounces.
- **1982:** Poly Industries set up a cast acrylic and polystyrene sheet plant at Hub, Lasbella, 35 km west of Karachi.
- **1983:** Production of auto parts started in the country with the introduction of Suzuki FX 800CC car.
- **1984-1986:** Production of polyester filament yarn, polyester chips and PET resin, started.
- **1988: Plastics Technology Centre (PTC)** was established by Federal Chemicals & Ceramics Cooperation Limited (FCCCL) with the assistance of UNIDO at Korangi Industrial Area, Karachi.
- **1989:** Production of Styrene was started. Pak Suzuki Motor launched new models of "Mehran" and "Khyber".
- **1993:** One and 1.5 liter PET bottles became widely popular. More companies set up PET bottle manufacturing units. Within 3 years the number of such companies exceeded 30. Indus Motor Company sets up Toyota Corolla assembly plant in Karachi.
- **1994:** Pakpetro Chemicals started production of HIPS near Karachi.
- **1995:** The number of plastic processors increased to 6000.
- **1996:** Mitsubishi Corporation showed interest to invest in PVC sector.
- **1997:** PPMA membership reached 700. Prices of resins grew 1000% in local markets in 45 years. World Bank, PPMA and National Development Finance Corporation held talks to phase out Chlorofluorocarbons (CFCs) gases.

- **1998:** Plastics industry grew at 17.5%. World Bank approved a grant of US\$ 2.3 million for thermoware industry of Pakistan.
- **1999:** Engro Asahi Chemical with an investment of US\$80 million set up 100,000 tons PVC plant at Port Qasim. Pak Petrochemicals started production of HIPS.
- **2000:** First exhibition on auto-parts held in Karachi.
- **2002:** Central Board of Revenue restricted clearance of any plastic scrap without a certificate from Chamber of Commerce. The government of Pakistan in collaboration with Japan approved an "Upgradation of Plastics Technology Centre" project with a capital cost of Rs.455.00 million.
- **2003:** Polypropylene import increased by 68% in one year. Chinese plastic goods flooded Pakistani markets.
- **2004:** PPMA organized second (local) exhibition in Lahore.
- **2006:** Members of PPMA attended Plastindia, the largest plastic exhibition held in New Delhi, India. In May, PPMA organized a plastics exhibition in Karachi, the biggest so far.
- **2008:** Every second plastic unit in Pakistan felt the importance of recycled material and instead of relying heavily on recyclers, installed crushers at their own factories
- **2010:** The Ministry of Environment proposed legislation to ban non-biodegradable bags and instead encourage oxo-biodegradable bags. The Ministry has also asked the Federal Bureau of Revenue to reduce import duty from 6 to 0 percent on oxo-biodegradable additive for manufacturing of bags.
- **2018:** As an effort to reduce the cost of doing business, rate of income tax was reduced from 4.5 to 1.75% on industry and 6 to 4.5 percent on commercial imports.

2. Salient features of Plastic Industry of Pakistan:

The plastic industry of Pakistan has now been fully established with the world-class processing plants using technologies of international standard. This industry is not only meeting the domestic demand but also contributing significantly to the GDP of the country by exporting its products to various countries. Plastic industry is encouraged to take lead in spurring economic activity with government's support in form of necessary policy and regulatory reforms. Following are the current salient features of plastic industry of Pakistan:

- Currently, there are total four producers of plastic raw material in Pakistan which are located in Karachi due to the port proximity.
- Plastic industry is an important part of manufacturing sector of Pakistan. It comprises of approximately 11000 small, medium and large sized processing units.
- The Pakistan Plastic manufacturers Association (PPMA) is the representative body of plastic industry which has boosted its membership to 150 companies all over Pakistan. Besides, there are number of sector-wise and city-wise associations existed in the country with which many of the small and medium plastic units are attached. They mostly belong to toys, furniture, pipes, electric switches, water tanks, kitchen ware, etc.
- It is worth-mentioning that about 65 percent of the plastic processing units are located in Punjab.
- It is estimated that the total worth of plastic industry is around 1.5 million ton of raw material consumption.
- The plastic industry provides raw material to other industries and is interlinked with almost all sectors, it is contributing more than 15 percent to GDP.
- The plastic industry is contributing 15 percent to national tax collection.
- The plastic industry has domestic investment of around Rs.500 billion, suggesting a strong profitability of the industry.
- Pakistan's plastic industry is completely meeting the demand of its domestic market while raw materials are also being exported world-wide.
- Pakistan imports Polypropylene and Polyethylene mainly from Saudi Arab, UAE, Qatar, Oman, USA, Europe and Far East.

Table 1: Important Indicators of Plastic Industry

Total plastic raw material producers	4 (all located in Karachi)
Total processing units (large, medium and small)	Approx. 11000
Plastic processing units in Punjab	65%
Contribution to GDP	15%
Contribution to national tax collection	15%
Domestic Investment	Rs.500 million
Plastic industry workforce	Direct: 500,000 Indirect: 2 million

Source: Pakistan Plastic Manufacturers Association (PPMA)

2.1. Production Capacity

Total capacity of plastic industry is **745,000** tons. Engro Polymer & Chemicals Ltd., Pakistan Petrochemical Industries (Pvt) Ltd., Gatron industries Ltd. / Novatex and Dynea Pakistan are producing and supplying plastic products and plastic raw material to the large, medium and small processors of plastic. These units are producing variety of raw materials and supplying to domestic and international markets.

The products being manufactured are in Pakistan:

Polyvinyl chloride (**PVC**)



General Purpose Polystyrene (**GPPS**)



High Impact Polystyrene (**HIPS**)



Expanded PolyStyrene (**EPS**)



Polyethylene Terephthalate (**PET**)
Chip Bottle



Preform



Urea



Melamine



Engro Polymer & Chemicals Ltd. is the largest producer of plastic raw material, producing 195,000 tons of PVC. It plans to expand its production by further 100,000 MT by 2020.

Pakistan Petrochemical Industries (Pvt) Ltd. is producing GPPS, HIPS and EPS to the tune of 100,000 combine while also plans to produce Acrylonitrile Butadiene Styrene (ABS).

Gatron industries Ltd. / Novatex produces PET Chip Bottle (350,000 tons) and Preform (50,000).

Dynea Pakistan is producing 50,000 tons of Urea and Melamine (See Table 2).

Table 2: Production of Major manufacturers

Company	Product	Capacity (tons)	Remarks
Engro Polymer & Chemicals Ltd.	PVC	195,000	Expansion 100,000 MT by 2020
Pakistan Petrochemical Industries (Pvt) Ltd.	GPPS, HIPS and EPS	100,000	Plan to produce ABS
Gatron industries Ltd. / Novatex	PET Chip Bottle Preform	350,000 50,000	
Dynea Pakistan	Urea & Melamine	50,000	

Source: Pakistan Plastic Manufacturers Association (PPMA)

2.2. Trade Snapshot of Plastic Industry:

- The exports of plastic materials are calculated under the head Chemical and Pharmaceutical Products in total exports (SBP, 2020). In this head, plastic materials exports are second largest after the exports of Fertilizers Manufactured.

- The export of Plastic Materials constituted 1.39 percent of total exports in FY19 which has increased from 1.03 percent in FY18.
- The import of Plastic Materials comprised of 3.86 percent of total imports in FY18 which increased significantly to 4.05 percent in FY19.
- Exports of Plastic material have increased from US\$238 million in FY18 to US\$318.6 million in FY19, depicting an absolute increase of 80.5 percent.
- Imports have shown an absolute decrease of 126.2 percent, falling from US\$2,347.2 million in FY18 to US\$2,221 million in FY19.

Table 3: Trade of Plastic Materials (US\$ million)

	FY18	FY19	Abs. change	Quant. impact	Price impact
Exports	238.0	318.6	80.5	51.5	29.0
Imports	2,347.2	2,221.0	-126.2	36.8	-163.0

Source: SBP

2.2.1. Quantum change in exports and imports of finished plastic products:

Export of finished plastic products has decreased significantly from 8,749 MT in FY18 to 6,504 MT in FY19 while imports of finished plastic products increased slightly from 20,360 MT in 2017-2018 to 20,445 MT in 2018-19. Polymer is the main trading component of plastic industry. Export of Polymers has increased remarkably from 154,005 MT in 2017-18 to 202,480 MT in 2018-19. Import of Polymers decrease from 1,181,309 MT 2017-18 to 1,149,913 MT in 2018-19. This shows that Pakistan has been producing sufficiently enough to fulfil not only its local demand, but also export much of the amount to the world.

Table 4: Quantum of export and import of finished plastic products (MT)

Segment	2017-18	2018-19
Export	8,749	6,504
Import	20,360	20,445

Source: Pakistan Plastic Manufacturers Association (PPMA)

Table 5: Trade in Polymers (Quantity in MT)

Segment	2017-18	2018-19
Export	154,005	202,480
Import	1,181,309	1,149,913

Source: Pakistan Plastic Manufacturers Association (PPMA)

2.2.2. Buyers of Pakistani Plastic products/materials:

Over years, Pakistani plastic industry has established a good reputation in the world with its sophisticated technology and state of the art plants. Pakistan has registered growth of 5 percent in plastic exports during 2015-19.

Countries:

Major importers of Pakistani plastic are United States of America, Afghanistan, Canada, Turkey, UAE, India, Italy, Tanzania, Belgium, Germany, Bangladesh, Qatar, UK and China.

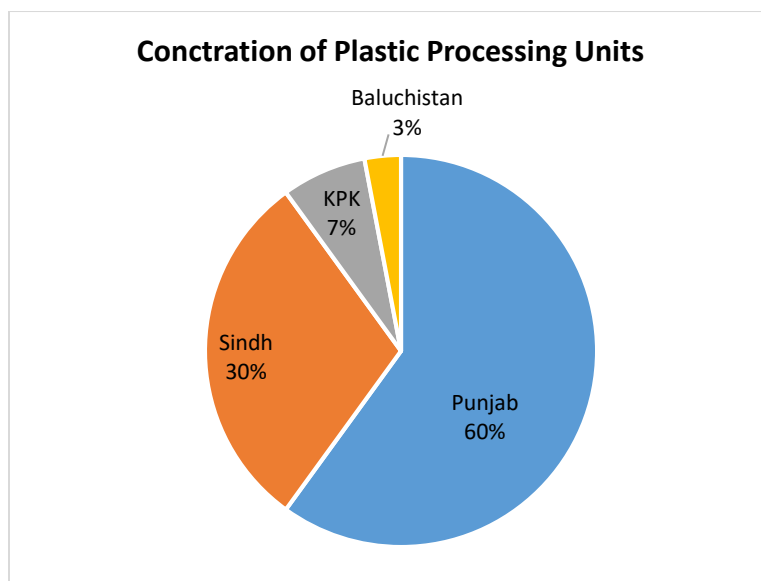
Companies:

Prominent companies which are buying Pakistani plastic products are Coca Cola, Pepsi, Unilever, Cadbury Pakistan, Becton Dickinson Pakistan, Haier, Nestle Pakistan, Tetrapack, Procter & Gamble, Colgate Palmolive, Toyota, Suzuki, Honda, Hinopak, Yamaha, Nissan, Clariant Chemical Pakistan Ltd., ICI Pakistan Ltd., Serio Plas Pakistan, Gillete, Arcelik Turkish Group and Dutch dairy giant Royal Friesland.

2.3. Concentration of Plastic Industry:

The Plastic industry of Pakistan has approximately 11000 small, medium and large sized processing units all over Pakistan. *The entire industry is self-financed and SME.* Major

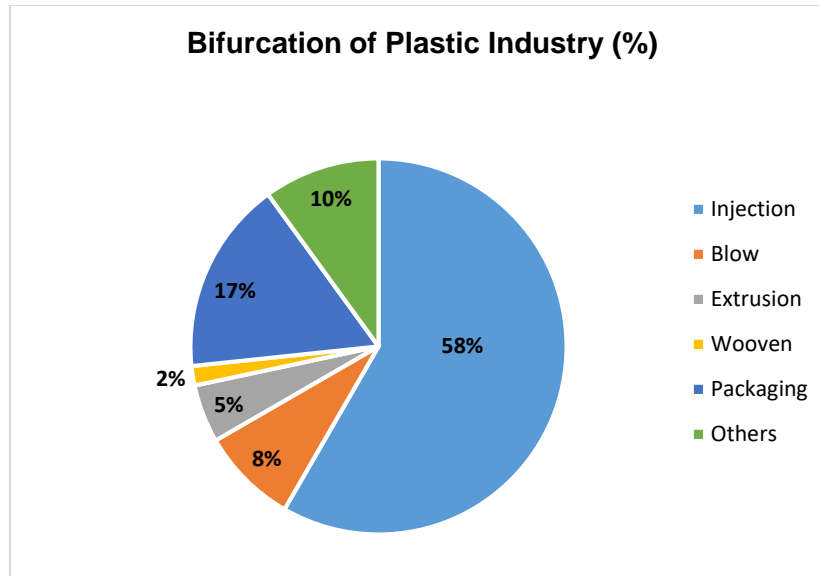
concentration of plastic processors are around the industrial hubs of Karachi, Lahore, Gujranwala, Peshawar, Faisalabad, Hyderabad, Rawalpindi, Gadoon and Hattar. 60 percent processors are located in Punjab, while 30 percent are in Sindh, 7 percent in KPK and 3 percent in Baluchistan.



2.4. Bifurcation of Plastic Industry:

The plastic industry is divided into organized and unorganized sectors. More than 50 percent of the plastic plants are producing quality plastic products who have also secured place in international market. A significant surplus amount is being exported to many countries. However, it is interesting to note that the unorganized plastic sector has also been growing rapidly as compared of organized sector despite producing low quality and cheap products.

Out of these total number of plants, 58 percent plants are producing injection, 17 percent Packaging, 8 percent Blow, 5 percent Extrusion and 2 percent are producing Wooven.



2.5. Plastic Industry is interlinked with other industries:

The plastic is used in almost all industries in one form or the other which makes plastic industry an integral part of all industries. Food, pharmaceutical and automotive are using plastic material whether as packaging or as a part of their products. Take the example of automotive, automobiles are not complete without plastic auto parts.

With its improved quality and productivity through innovative techniques, Pakistan is not only meeting the demand of local automotive industry but exporting significant plastic auto parts to the world. Packaging for food and pharmaceutical products has also improved over the years. It is appreciable that plastic industry has been following the international standards to produce safe and healthy packaging for the essential items.

2.6. Supply Chain of Plastic Industry:

The supply chain of plastic industry involves numerous components working rigorously. Precisely, it involves material suppliers, processors, equipment and moldmakers, brand owners and recycling plants.



Source: The Plastic Industry Association

- **Material Suppliers**

- These are either the raw material producers located in Karachi or the importers which are supplying plastic raw material (plastic granules, etc.) to local large, medium and small processing units.

- **Processors:**

- The plastic processing units take the raw materials and convert them into products. The processors work as per the demands of all companies and fulfill. They manufacture products as per the requirements of the industry.

- **Machines, Equipment Suppliers and mold-makers:**

- Initially, there was a ban on the import of new plastic related machinery as government had misperception that the plastic raw material was being imported only so there was no need to import machines and also the new machines might be misused for other purposes. The ban was lifted in 1984 when the government got convinced by the plastic manufacturers that the plastic related machines would generate the capacity to produce plastic raw materials locally and the machines cannot be used for any other purpose.
- *Majority of the Machines are imported. However domestic Industry does have the capacity to manufacture film extruders, recycling machines, regrind crushers, and chillers. To an extent, local assembly in an unorganized manner is now in process for Injection molding machines with imported CKD's.*
- Pakistani plastic industry is making molds and equipment as well as plastic machinery. However, most of the plastic machinery is being imported.

- **Brand owners:**
 - Brands are the end users of plastic material. They use plastic packaging to deliver their products to the customers. Large multinational brands are using Pakistani plastic packaging for their goods, these include Coca Cola, Pepsi, Unilever, Cadbury Pakistan, Becton Dickinson Pakistan, Haier, Nestle Pakistan, Tetrapack, Procter & Gamble, Colgate Palmolive, Toyota, Suzuki, Honda
- **Sustainability and Recycling:**
 - Plastic has several lives. A part of plastic industry is engaged in recycling plastic materials. These companies collect the plastic waste, recycle it into plastic granules and supply them to processing units.

3. Plastic Industry under Lockdown:

Pakistan's plastic industry had been working at its full capacity before the lockdown. At this point of time, about 60 percent of the plastic units are closed. Only those units are operational which are supplying packaging to pharmaceutical and food industries.



Despite difficulties due to lockdown, the plastic industry is working hand in hand with other industries and with the government. As soon as coronavirus hit our country, plastic industry stepped in not only to fulfil the rising demand of plastic packaging used in food and pharmaceuticals but also worked diligently to design new healthcare products being needed on emergency basis. Their tireless efforts are appreciable which made possible the supply of Face Shields, PPE Suits, Mask, Gown, PP non-woven bed sheets, Syringes, Dextrose bottles, drips and other packaging for pharmaceutical industry in the market in a very short time span.

3.1. Collaborative response of Pakistan Plastic Manufacturer Association (PPMA) and Pakistan Association of Automotive Parts & Accessories Manufacturers (PAAPAM)

It is a proud moment for Pakistan that Pakistan has started manufacturing ventilators. This initiative is a collaborative effort of the members of Pakistan Plastic Manufacturer Association (PPMA) and Pakistan Association of Automotive Parts & Accessories Manufacturers (PAAPAM).

The detail of the products being manufactured recently to tackle coronavirus crisis:

SR #	Company	Innovation	Detail
1	Infinity Engg	Joint consortium for development of Vent2Go disposable Ventilator device.24 components, R&D, Tool manufacturing, Testing, controls	
2	Techman Engg		
3	SPEL		
4	Alpha Rubber & Plastic Works		
5	T.M. Engineering		
6	Thermosole Inds		
7	Grand Engineering		
8	Mehran Commercial Enterprises	1. Face masks 2. Protective clothing's	
9	Alpha Rubber & Plastic Works	1. Ventilator Splitter 2. Eye Safety Goggles 3. Face Shield	
10	SPEL	Face Shield	
11	Kissan Engineering	Conversion of Water Tankers to disinfectant Spraying vehicle	
12	Thermosole Inds Pvt Ltd	1. COVIT SOP's Introduced by the GOPb 2. Hand Fogging pressure Sanitizer pump	

13	Precision Products Ent. Pvt Ltd	Portable Hand wash system with foot pump. Donating FOC to hospitals.	
14	Metaline Inds Pvt Ltd	Development of Hospital Beds / Accessories	

- A joint consortium of seven plastic processing companies have joined hands to develop Vent2Go disposable Ventilator device. The item is a remarkable initiative at this crucial time and would be out within a month.
- Metaline Inds Pvt Ltd. is in the process of manufacturing hospital beds which would be available in next three months.
- Except these, all remaining products mentioned in the table above have already been supplied in the market.
- Moreover, SPEL group has generously donated 10,000 Face Shields to the Government of Punjab, making our healthcare force well equipped on immediate basis.

3.2. Issues and recommendations amid Covid-19 crisis:

- Despite the fact that it is one of those few industries which are rescuing the country being the major barrier against Covid-19, the plastic industry of Pakistan is under continuous and undue criticism by environmentalists and judiciary. Before passing any judgement, it is necessary to first understand the dynamics of this industry and the measures that it is already taking to protect the environment.
- Pakistan's per capita consumption of plastic is the lowest in the world, approx. 7.5kg per person. Whereas, consumption in America and Europe is more than 100kg per person per year. These countries have attained this level through their advance domestic municipal controls, intelligent. The government of Pakistan should assist the plastic industry to achieve this level with safe usage of healthy plastic.
- Pakistan's plastic industry is using imported raw material mostly while it is exporting plastic products to many countries. China, Saudi Arabia and USA are the largest trading partners

of Pakistan's plastic and unfortunately badly hit countries of coronavirus. Almost all of the countries have either postponed or cancelled their orders. This situation is very difficult for SME processing units who do not have much to bear the cost of lockdown. This scenario might cause closing down of these units permanently, if the lockdown prolongs.

- *“Pakistan should also work on a Smart Plastic policy. As of today, Europe, UK and USA have all lifted ban on single-use plastic products, especially single-use bags as these are now considered safe and more hygienic than reusable bags. All single-use bags should be allowed and promoted to fight against Covid-19, like all developed countries are doing to protect their citizen”.*
- The plastic industry consists of mainly SMEs which utilize short term funds like running finance facilities, LC limits, FATR's etc. but do not have long term funding from banks. The SBP's recently announced support program focusses on large industries who are either in operation or really not much effected by the corona lockdown. No support has been provided to plastic industries for combating the current crisis.
- It would take six months to a year for the plastic industry of Pakistan to recover from the repercussions of Covid-19. A supportive government policy is needed badly to keep the plastic SMEs in to the business.
- An effective garbage collection system and rigorous recycling policies are the need of the hour. The government of Pakistan should step in to develop and improve its policies so that Pakistan can also enjoy the benefits of environment-friendly plastic products.
- Although, the idea to organize international plastic exhibitions in Pakistan is relatively new but Pakistan has successfully been organizing such exhibitions from last 5 years. The Government needs to facilitate such events and promote domestic plastic industry of Pakistan.

Source

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