

2021

Rice Sector Profile



Turn Potential Into Profit

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Table of Contents

1	Introduction	3
2	Rice Sector, Pakistan – Brief Overview	4
2.1	Geographical Distribution of Rice Cultivation in Pakistan	5
2.2	Rice Processing in Pakistan	6
3	Product Categories.....	7
4	Analysis of Business Operations	7
4.1	Value Chain	7
4.2	Production Operations	8
4.3	Cultivation and Process.....	9
4.3.1	Land Preparation	9
4.3.2	Plantation.....	9
4.3.3	Harvesting	10
4.3.4	Drying.....	10
4.3.5	Husking / Hulling	10
4.3.6	Milling	10
4.3.7	Polishing.....	11
4.3.8	Grading.....	11
4.3.9	Color Sorting	11
4.3.10	Packaging and Shipping	11
4.4	Byproducts / Waste	12
4.5	Technology.....	12
4.6	Human Resources.....	13
4.7	Quality Control	13
4.8	Sales and Distribution	14
5	Trade Analysis.....	15
5.1	Global Trade of Rice.....	15
5.1.1	Major Exporters	16
5.1.2	Major Product Mix	16
5.1.3	Major Import Destinations	17
5.2	Pakistan’s Exports of Rice	17
5.2.1	Pakistan’s Major Product Mix	18
5.2.2	Pakistan’s Export Destinations.....	18
5.3	Price Comparisons	19

6	Major Stakeholders.....	19
7	Major Issue & Problems	19
8	Key Interventions	20
9	Useful Links	21

1 Introduction

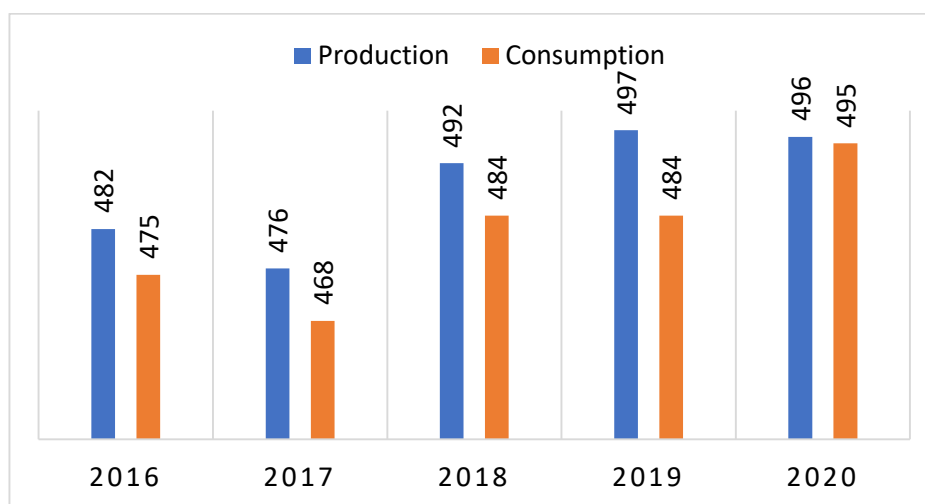
Wheat, Rice and Maize are the major leading food crops of the world. Rice is the staple food of more than half of the world's population, with more than 700 million tons produced annually (equivalent to 500 million tons of milled rice) at a global level¹. Although most rice is consumed in the countries where it is produced, a growing demand in some areas is feeding the international rice trade.

Rice is mostly grown and consumed in the Asian Region. China is the largest consumer of Rice, while India is the largest exporter, accounting for nearly 30% of rice trade². Cultivating rice is the major source of income for millions of people around the globe. Rice is grown in more than a hundred countries, with a total harvested area of approximately 158 million hectares³. The nutritional value derived from rice consumption largely depends on which variety of rice is chosen as well as the cooking method that is used in its preparation. For instance, while the consumption of white rice has historically been the most dominantly consumed variety, in recent years the demand for brown rice varieties has witnessed a sharp rise due to its associated health benefits.

Several countries of Asia and Africa are highly dependent on it as a source of foreign exchange earnings and government revenue. Rice is one of the most valuable agricultural commodities traded on the international market with a market size of US \$ 25.58 billion in 2020⁴.

According to Pakistan Credit Rating Agency (PCRA) report on Rice Sector, the average production and consumption of rice in the world have grown by 0.6% in the 2016 to 0.9% in 2020. However, the overall trade trend have slightly varying patterns on a year on year basis. The global stocks of Rice are predominantly ruled by China and India with around 30%-35% world production. The Rice production and consumption pattern of the world during the last five years is exhibited in the below graph.

Figure 1: World Rice Production & Consumption – Milled Rice (Million Metric Tons)



Source: United States Department of Agriculture (USDA)

¹ Ricepedia; <https://ricepedia.org>

² Rice Sector An Overview; The Pakistan Credit Rating Agency Limited. (PCRA)

³ International Rice Research Institute (IRRI); <https://irri.org>

⁴ Trade Map; <https://www.trademap.org/Index.aspx>

There are various types of Rice varieties produced worldwide. The produced rice varieties are based on varying geographical and tropical conditions, where it is grown. The main categories of rice⁵ produced in the world mainly comprise of the following;

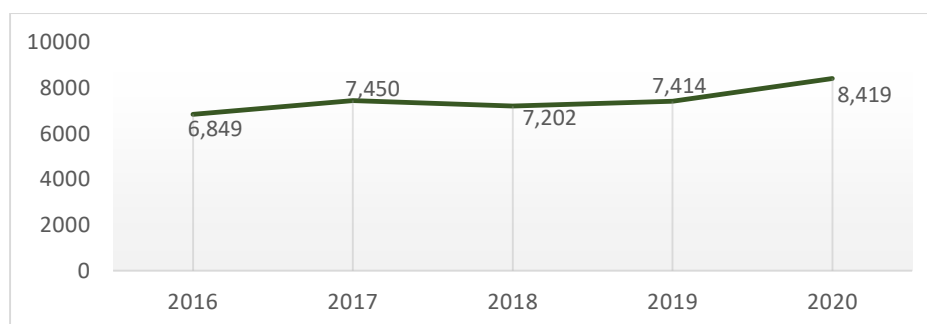
- **Indica**: Grown and produced in tropical and sub-tropical regions. It accounts for around 75% of the total Global Trade of Rice. IRRI Rice produced in Pakistan falls in this category.
- **Aromatic (Jasmine & Basmati)**: Predominantly grown and produced in Thailand, Vietnam, India and Pakistan. It accounts for approximately 16% ~ 18% of the Global Rice Trade.
- **Japonica**: It is mainly grown in the Regions with colder climates, this variety contributes to around 5% to 6% of Global Rice Trade.
- **Glutinous**: Primarily grown and produced in Southeast Asia and contributes to 15 to 2% of the Global Trade of Rice.

2 Rice Sector, Pakistan – Brief Overview

Agriculture is the backbone of Pakistan economy. More than 65-70 percent of the population depends on agriculture for its livelihood. The agriculture sector provides employment to 38.5 percent of the labor force and contributes 19.2 percent to the GDP of the country⁶. Rice is one of the major food as well as cash crops of Pakistan. It is the second main staple food crop after wheat and the second major exportable commodity after cotton.

According to Economic Survey of Pakistan 2020-21, the Rice Crop was cultivated on 3,335 thousand hectares, showing an increase of around 9.9 percent in comparison to the last year's cultivated area of 3,034 thousand hectares. The current year also observed a record production of 8.419 million tonnes Rice, which is 13.6% higher than last year's production of 7.414 million tonnes. This increase in rice cultivation and production is mainly attributed to rising profit margins and higher demand of Pakistani Rice in the global markets. The area, production and yield of rice during the last five years are shown in the below table and diagram.

Figure 2: Pakistan's Rice Production ('000' Metric Tons)



Source: Pakistan Bureau of Statistics; Economic Survey of Pakistan 2020-21

⁵ International Rice Research Institute (IRRI); <https://irri.org>

⁶ Economic Survey of Pakistan 2020-21

Table 1: Area, Production and Yield of Rice – Pakistan

Year	Area		Production		Yield	
	'000' Hectare	% Change	'000' Tonnes	% Change	Kgs/Hec.	% Change
2016-17	2,724	-	6,849	-	2,514	-
2017-18	2,901	6.5	7,450	8.8	2,568	2.1
2018-19	2,810	-3.1	7,202	-3.3	2,563	-0.2
2019-20	3,034	8.0	7,414	2.9	2,444	-4.6
2020-21 (P)	3,335	9.9	8,419	13.6	2,524	3.3

P: Provisional

Source: Pakistan Bureau of Statistics; Economic Survey of Pakistan 2020-21

2.1 Geographical Distribution of Rice Cultivation in Pakistan

The Rice cultivation and production in Pakistan is predominantly concentrated in the province of Punjab and Sindh, which accounts for around 85% of total Rice production in the country. However, Punjab leads with 55% share of total Rice production followed by Sindh with 30%, while Khyber Pakhtunkhwa and Baluchistan contribute around 10% and 5% of the production respectively⁷.

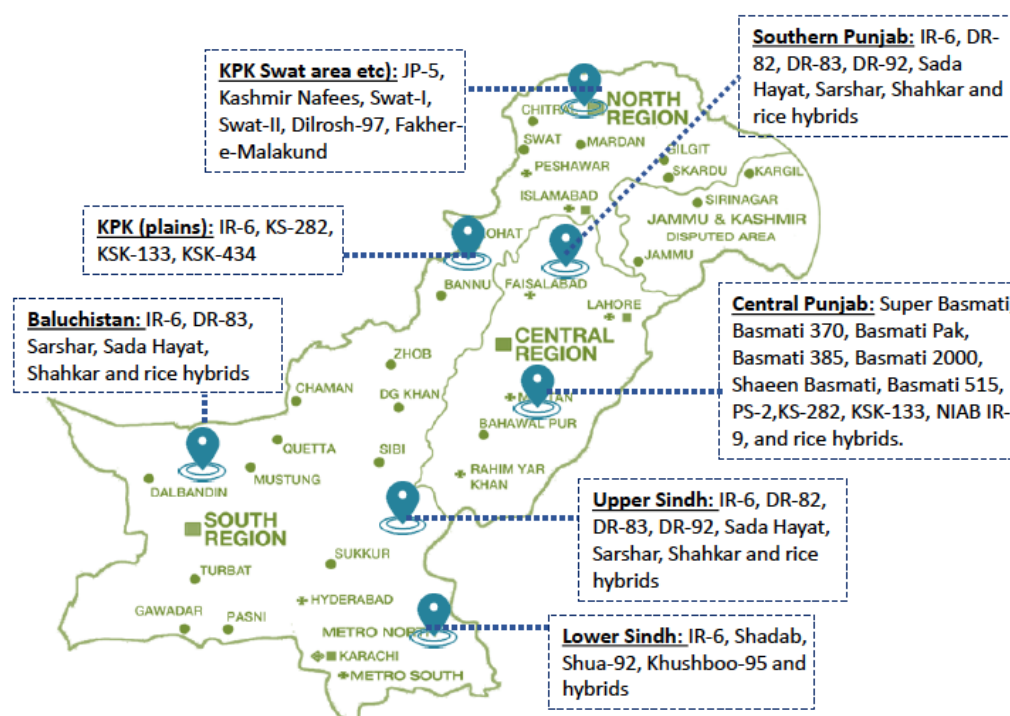
Punjab, due to its agro-climatic and soil conditions, predominantly produces of the Basmati Rice in the country, which is a premium quality and expensive rice as compared to non-basmati rice. Sindh region is enriched with cultivation of non-basmati rice, mainly IRRI-6⁸, which is majorly exported to the African Regions.

The overall geographical distribution of Rice cultivation of different varieties in Pakistan is exhibited in the below diagram.

⁷ Rice Sector an Overview; The Pakistan Credit Rating Agency Limited. (PCRA)

⁸ Pakistan Agriculture Research Council (PARC)

Figure 3: Map of Rice Cultivation in Pakistan



Source: Pakistan Agriculture Research Council (PARC)

2.2 Rice Processing in Pakistan

The trade of rice as commodity is dependent on well-organized and technological equipped processing sector, which mainly comprises of Rice Husking and Processing Mills segments. Rice processing sector in Pakistan is extremely pivotal to increase the exports and employment generation in the country. As already stated, in Pakistan Rice is predominantly grown and produced in Punjab and Sind therefore the processing sector is also mainly located in these two provinces. Presently, there are approximately 800⁹ Rice Processing Mills in the country, around 95% of these mills are the 'Husking Mills' categorized as Small and Medium Size units; while rest 5% of are Integrated Processing Mills (Husking and Polishing) recognized as Large Units. The milling sector is primarily scattered in the following locations in Pakistan.

Table 2: Geographical Distribution of Rice Processing Mills in Pakistan

Province	Districts / Cities
Punjab	Gujranwala, Mandi Bahauddin, Sheikhupura, Narowal, Hafizabad, Gujrat, Bahawalpur, Lahore, Faisalabad, Multan, Rahim Yar Khan
Sindh	Karachi, Hyderabad, Sukhar,
Khyber Pakhtunkhwa	Swat, Peshawar, Malakand, Mardan
Baluchistan	Nasirabad, Jaffarabad

⁹ Rice Export Association of Pakistan (REAP) and Industry Sources

As a whole Rice Processing and Farming Sector provides employment generation to around 1.3 million people in Pakistan. The locally produced rice is consumed around 50% in Local Market and 50% is exported to different countries. Pakistan's share in world export of Rice was 6.7%¹⁰ during the year 2020.

3 Product Categories

The trade of Rice is broadly categorized in following three primary forms¹¹:

- Fully Milled Rice: Both the Husk and Bran Layer removed.
- Brown Rice: Husk is removed but Bran Layer is attached.
- Paddy Rice: Not milled, thus have both the Husk and Bran Layer attached.

The harmonized Commodity Description and Coding System (referred as HS Codes) designated for trade of Rice is classified under the HS Code category 1006. The brief description of sub-categories falling under this product category include the following;

Table 3: Rice Product Categories

Product Category HS Code	Product Description
1006	Rice
100610	Rice in the Husk, 'Paddy' or 'Rough'
10061010	<i>Rice in Husk (Paddy or Rough): Of Seed Quality</i>
10061090	<i>Rice in Husk (Paddy or Rough): Other</i>
100620	Husked or Brown Rice
100630	Semi-milled or Wholly-milled Rice (whether or not Polished / Glazed)
10063020	<i>Basmati Rice</i>
10063090	<i>Other Types of Rice</i>
10064000	<i>Broken Rice</i>

4 Analysis of Business Operations

4.1 Value Chain

Rice is a 'Kharif' (i.e. Summer Season) crop, its sowing in Pakistan starts from April to June and harvested in the months of April to December. Overall, the value proposition of 'Rice Sector' is mainly comprised of three core segments i.e. Rice Growers (i.e. Farmers), Rice Processors (i.e. Millers) and Traders (both for Local and Export Markets).

¹⁰ Trade Map; <https://www.trademap.org/Index.aspx>

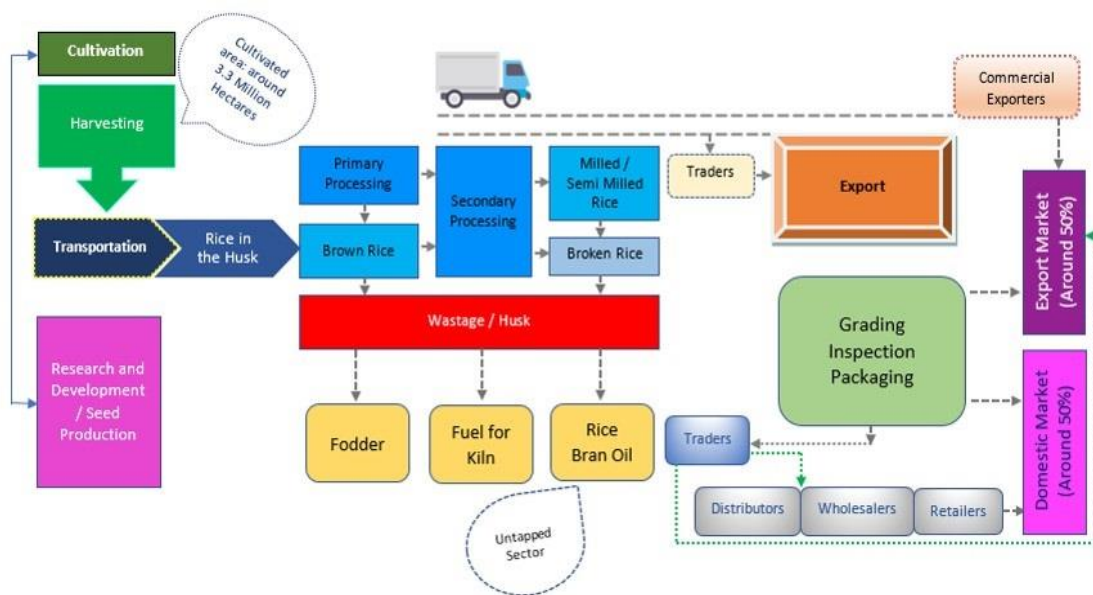
¹¹ International Rice Research Institute (IRRI); <https://irri.org>

Figure 4: Rice Value Chain



The complete value chain of Rice Sector in Pakistan is as given below:

Figure 5: Value Chain of Rice Sector Pakistan



Source: Industry & Rice Exporters Association of Pakistan (REAP)

Value chain of Rice Sector in Pakistan is very fragmented and disconnected. Majority of the key players (i.e. Farmers, Processors, Research Institutions and Traders etc.) involved in the value chain are operating in isolation without any appropriate coordination and networking. The major concern is lack of coordination between the farmers and millers. Similarly, lack of coordination between Government Departments and Research Institutions has resulted in limited innovation in farming practices, handling of paddy rice, processing activities and development of new varieties.

4.2 Production Operations

According to International Rice Research Institute (IRRI) the production operations of Rice can be broadly categorized into following three key steps;

⇒ **Pre-planting**

Pre-planting activities generally involve choosing the right variety, developing a cropping calendar and preparing the rice field for planting.

⇒ **Crop Growing**

Important management factors should be considered during the growing phase of the rice crop. These include planting method, water, fertilizer, weeds, diseases and pests.

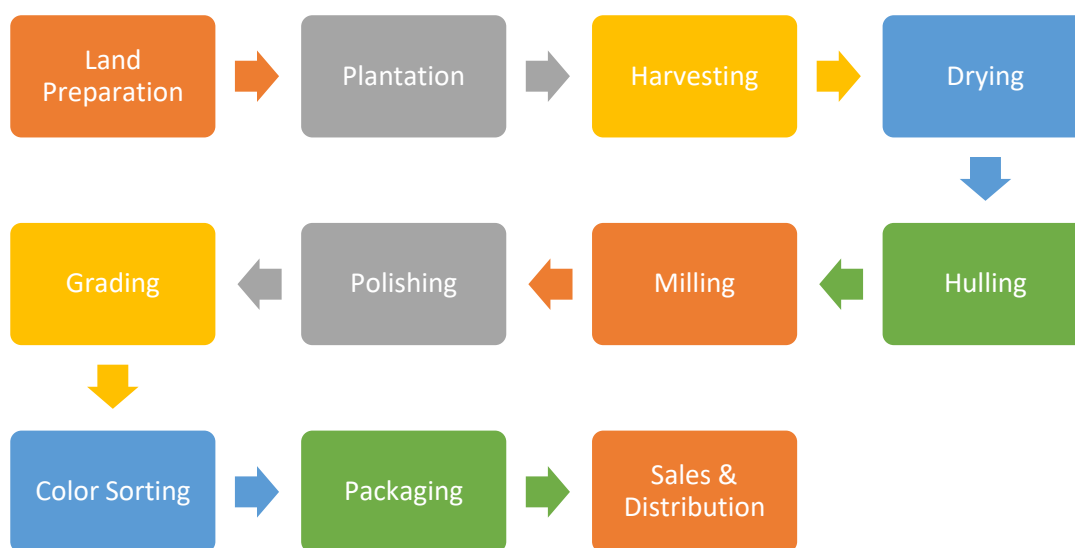
⇒ **Postproduction**

After harvesting, the paddy rice undergoes postharvest processes including drying, storage and milling to ensure good eating quality and marketability.

4.3 The Manufacturing Process

Based on above three key steps the complete manufacturing process of Rice Production is elaborated in the below diagram.

Figure 6: Value Chain of Rice Sector Pakistan



4.3.1 Land Preparation

Prior to start the plantation of rice, land preparation is done as per the requirement.

4.3.2 Plantation

The selected varieties of Rice Seeds are soaked in water before planting. Depending on the level of mechanization and the size of the farm land, planting occurs in different ways. In majority of Asian Countries, including Pakistan, the farming practices are not much mechanized and so the seeds are sown by hands. After 30-50 days, the seedlings are transplanted in bunches from nursery beds to flooded

paddies¹². Seeds can also be sown using a machine called a drill that places the seed in the ground. Large enterprises in advanced countries, e.g. USA also sow rice seed by the use of airplane. Low-flying planes distribute seed onto already flooded fields.

The few integrated units in Pakistan, who grow their own rice are using machines for seeding, but majority of farmers are still sowing the seed by hand.

4.3.3 Harvesting

Approximately in three months after the planation, Rice Plants attain the full growth and grains start to ripen. Normally, when the tops of rice plant begins to bow and the stems turn to yellow the water is drained from the fields. As the fields dry, the grains ripen further and harvesting is started. The harvesting of rice is also done either by hands or machines. Usually, small farmers and enterprises do the harvesting by hands while large farmers and enterprises use mechanization for harvesting.

4.3.4 Drying

Before milling, rice grains must be dried in order to decrease the moisture content to between 18-22%¹³. This is done with artificially heated air or, more often, with the help of naturally occurring sunshine. Rice grains are left on racks in fields to dry out naturally. Once dried, the rice grain, now called rough rice, is ready for processing.

4.3.5 Husking / Hulling

Husking or Hulling is the process of separating the rice from the husk. Rubber Roll and Hullers are used to shatter the rice paddy to produce rice. The rough rice is first cleaned by passing through a number of sieves that sift out the debris. Blown air removes top matter. Once clean, the rice is hulled by a machine that mimics the action of the handheld stones. The shelling machine loosens the hulls from the rice by rolling them between two sheets of metal coated with abrasives. 80-90% of the kernel hulls are removed during this process. Hulled rice grains are known as brown rice. The husking of paddy produces different products, including around 53% Head Rice, 10% Broken Rice, 3% Powder Rice and 33% Husk and 1% Waste / Dust Particles¹⁴. If white rice is desired, the brown rice is milled to remove the outer bran layers.

4.3.6 Milling

The basic objective of a rice milling system is to remove the bran layers and to produce white rice kernel that is sufficiently milled and free of impurities. Depending on the requirements of the customer, the rice should have a minimum number of broken kernels. Most rice varieties are composed of roughly 20% Rice Hull or Husk, 11% Bran Layers, and 69% Starchy Endosperm, also referred to as the total milled rice. In an ideal milling process this will result in the following fractions: 20% Husk, 8–12% Bran depending on the milling degree and 68–72% Milled Rice or White Rice depending on the variety¹⁵. Total milled rice also contains Whole Grains or Head Rice, and Broken Rice. The by-products in rice milling are Rice Hull, Rice Germ and Bran Layers, and Fine Broken.

¹² International Rice Research Institute (IRRI); <https://irri.org>

¹³ International Rice Research Institute (IRRI); <https://irri.org>

¹⁴ Industry & International Rice Research Institute (IRRI); <https://irri.org>

¹⁵ Industry & International Rice Research Institute (IRRI); <https://irri.org>

4.3.7 Polishing

In this stage the bran layers are removed through whitening and polishing machines to give rice a pearl white look. This process is carried out gradually in several gaps to save kernels from breaking. Number of gaps depends upon the degree of whiteness required. The mist polishers are used to impart an extremely clean and glossy appearance to the kernels of rice. The mist polishing provides a distinct advantage over traditional milling process.

The operations of polishing are spread over a period of eight months. In the current industrial practice, both the husking and polishing units are not operated at one time due to certain reasons. After the husking operation, the brown rice requires a time of six to ten weeks for the drying and conditioning. So, the brown rice is stored for a period of at least two months before taking it to the polishing process.

4.3.8 Grading

Rice is graded at different stages on the basis of thickness and length to remove malnourished, shriveled and broken grains from healthy pure and full grains. Advanced technology from Buhler in Drum Grader, Plan Sifter and Indented Cylinders are used at three different stages to achieve the optimum and uniform grain length.

4.3.9 Color Sorting

Before packing, rice is passed through the color sorter to remove discolored grains hence producing a final product with each grain having uniformity in all respects. Color sorting is done through Computer Controlled Process (CCD). The CCD system is used for high resolution- optical inspection of each and every kernel. It removes the high concentration of predominantly chalky and discolored kernels from healthy one. The CCD system has a product tracking and automatic calibration mechanism that ensures consistent sorting efficiency and performance. The feeding system with advanced force design ensures precise product presentation.

4.3.10 Packaging and Shipping

Some units have installed modern computerized bagging scales to ensure high degree of accuracy in weighing. Each and every bag shipped weighs precisely the same. The equipment is capable of packaging different sizes ranging from 0.5 Kg to 100Kg¹⁶. Following types of packaging materials are used as per customer demands:

- Cardboard Packs
- Paper-sack Packs
- Polypropylene or Polythene Bags
- Cotton Bags
- Jute Bags

Packaging process is carefully designed and performed to increase shelf life of products as well as easy handling till the point-of-consumption. Even a good product needs good presentation to sell in the market.

¹⁶ Industry & Rice Exporters Association of Pakistan (REAP)

Rice goes extra miles to present its products in beautiful, eye-catching and striking designs. Normally, designers are engaged for developing the packaging designs as per the requirements of customers or brands.

4.4 Byproducts / Waste

The following are the major byproducts and use of waste:

- Straw from the harvested rice plants is used as bedding for livestock.
- Oil extracted from Rice Bran is an edible oil, which is used in various forms of food preparation. It is also the basis of some vegetable ghee. Rice bran wax, obtained from rice bran oil, is used as a substitute for carnauba wax in cosmetics, confectionery, shoe creams, and polishing compounds.
- Hulls are used to produce mulch that will eventually be used to recondition the farm soil.

In Pakistan, the Rice Bran Oil is still untapped. Presently, the waste of rice crop is mainly being burnt by the farmers, which is also considered as major reason of smog, especially in Punjab.

4.5 Technology

Majority of Rice processors in Pakistan are using the outdated or conventional technology with the exception of large integrated processing mills who are using latest technology. Small and Medium Sized processor employ very limited technology. Lack of education among entrepreneurs, limited financial resources and change repellent culture has resulted in production facilities with primitive process techniques and obsolete machinery and equipment. It has severely hampered the product standardization and quality. The lack of latest technology and absence of modern processing practices, especially among the SMEs, is the biggest hurdle in the growth of the sector.

The machinery required by the Rice Processing Industry mainly comprises of the following components:

- Pre-cleaners
- Paddy Separator
- NF15 Rice Mill
- Rubber Roller Husker
- Elevators
- Steel Platform and Connecting Parts
- Combined Rolling Cleaner and Destoner
- Full Relay Control Panel with Cables
- Blower for Cleaning
- Bran Blower
- Rice Grader
- Magnetic Grid
- Polisher
- Mist Polish Blower

- Color Sorter
- Air Compressor and Air Tanks
- Packing Machinery

Majority of the above components of the rice processing machinery are also locally manufactured. However, sophisticated and modern technology is being imported from China, Japan or Korea. The import of machinery from China is cheaper as compared to other countries. Hence, majority of integrated or large units comprise of China made processing plants.

4.6 Human Resources

During husking season, the semi-skilled labor is required for drying paddy, loading and unloading of paddy bags. For a husking plant with processing capacity of 2.5 tons per hour, around 5-6 workers are required for four months of operations¹⁷. The sector is severely short on skilled and technically qualified labor. The employed labor force does not have any specialized technical or vocational certificates/diplomas from any technical institutions. Shortage of specialized technical training institutes is also major concern for the Sector. There is no coordination and linkages between the industry demands and educational curriculum adopted at operational technical training institutes. It resulted in workers unawareness about latest production techniques.

Human Resource Skill Gap / Development Needs

- Lack of education and skill in labour leads to uneven bed preparation for rice cultivation, which then results in low yield. The problems created by seedbed include salinity, water logging, moisture and loss of nutrients.
- Lack of technical knowledge of modern cultivation and ploughing practices
- Lack of technical knowledge of the volumes of water required for the crop needs with the time pattern

The following are the main skill development needs of rice sector;

- Post-harvest Handling of the Rice
- Modern Cultivation and Ploughing Techniques
- Packaging
- Warehouse Management
- Water Management
- Branding and Marketing

4.7 Quality Control

There are different types of quality requirement for different varieties of Rice to suit customer preferences. By and large quality factor for rice relates to Grain Length, Stickiness, Aroma, Texture and Flavor¹⁸. The majority of rice processors, especially Small and Medium sized units, in Pakistan pack any

¹⁷ Industry

¹⁸ Ricepedia; <https://ricepedia.org>

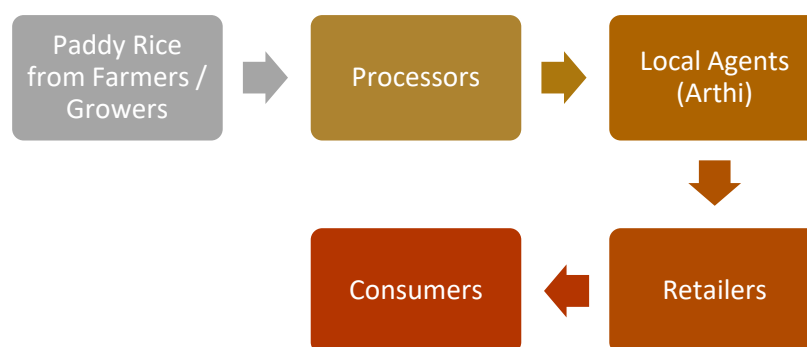
specific quality control systems and standards to ensure the standardized quality of rice¹⁹. Particularly in local market there are lot of mixing of rice varieties so getting an appropriate level of quality is quite difficult. However, large enterprises and recognized Rice Brands have established strong quality control checks because they primarily cater to the international buyers. Strong quality control mechanism is required to compete in the global market. The most notable varieties of Rice in Pakistan mainly include Basmati and IRRI. The Super Basmati Rice from Pakistan is the most popular variety around the world, due to its taste, aroma, and nutritious value²⁰.

4.8 Sales and Distribution

Rice Sector is targeting both local and international markets; around 50 percent of the total produced rice is exported, whereas 50 percent is sold and consumed in the domestic market. Major export destination of the Pakistani Rice are China, Kenya, Afghanistan, UAE, UK etc²¹.

The local market is quite fragmented and operates on similar patterns like other agriculture produce. Generally, small farmers and traders operate through local agents (i.e. Arthi) to retail shops. However, large enterprises who have established their brands follow systematic distribution and sales channels. For that purposes, processors have developed a network of distributors across the country. Predominantly, branded rice is sold to consumers through Big Retail Chains and Departmental Stores in major cities across Pakistan. Usually, 30 days' credit cycle is maintained in context of local trade. However, the terms of sale and services are different between each supplier and trader. The sales and distribution network flow in local market trade is as follows²²:

Figure 7: Sales and Distribution of Rice Grain (Un branded) in Local Market



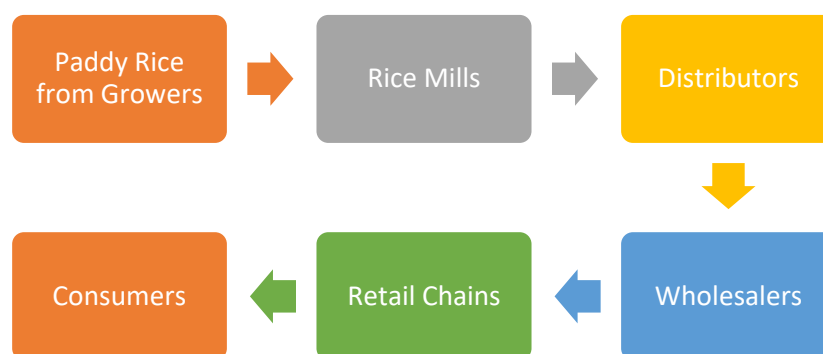
¹⁹ Local Industry Sources

²⁰ Pakistan Agriculture Research Council (PARC)

²¹ Trade Map; <https://www.trademap.org/Index.aspx>

²² Industry

Figure 8: Distribution and Sales of Branded Rice



Some of the manufacturers also have their own retail and distribution arrangements for distribution of products.

Whereas for international market, Rice is exported from Pakistan both directly by the Rice Mills as well as through commercial Traders and Exporters. Substantial number of commercial Traders and Exporters is operating in the market to facilitate the Rice Millers.

5 Trade Analysis

5.1 Global Trade of Rice

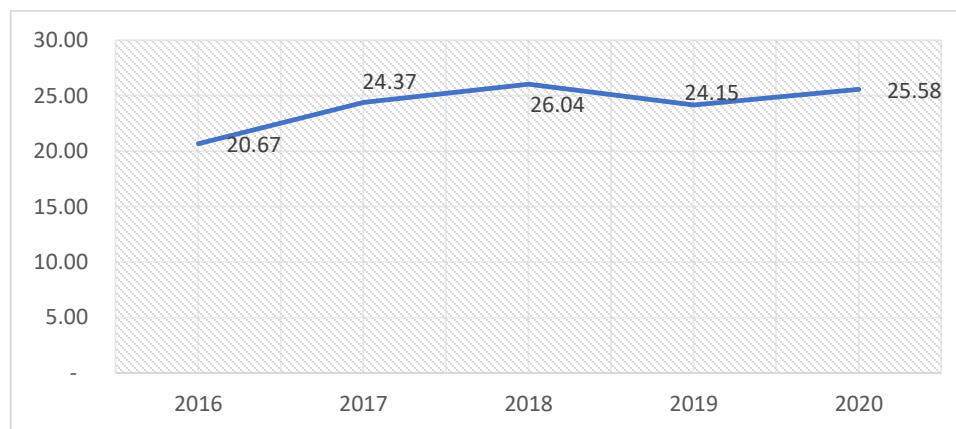
Rice is one of the most valuable agricultural commodities traded on the international market with a market size of US \$ 25.58 billion in 2020 with a growth rate of 5.89% compared with the previous year. The rice trade has witnessed an annual growth of 3% between 2016 ~ 2020.

Table 4: Global Exports of Rice - Last 5 Years

Description	2016	2017	2018	2019	2020
Global Exports (US \$ Billion)	20.67	24.37	26.04	24.15	25.58

Source: Trade Map

Figure 9: Growth Trend of Rice Exports (Value US \$ Billion)



5.1.1 Major Exporters

During the last 5 years, the exports of Rice have been dominated by India followed by Thailand, Vietnam, Pakistan and the USA. The percentage market share of the major exporting countries is provided in the table below.

Table 5: Major Rice Export Countries

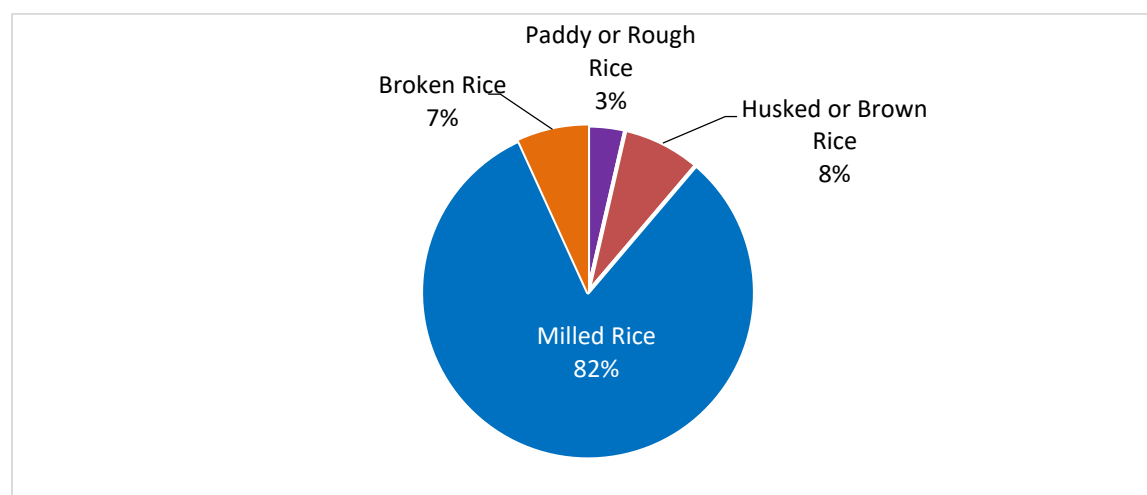
Exporters	Value Exported in 2020 (US \$ '000')	Annual Growth (%) in value 2016-2020	Annual Growth (%) in value 2019-2020	Share in World Exports (%)
India	7,980,028	8	17	25.4
Thailand	3,688,850	-5	-12	11.7
Viet Nam	2,790,951	4	15	8.9
Pakistan	2,101,268	7	-8	6.7
USA	1,878,844	2	1	6
China	916,643	28	-13	2.9
Myanmar	773,175	9	-1	2.5
Italy	715,232	5	16	2.3
Brazil	503,580	20	37	1.6

Source: Trade Map

5.1.2 Major Product Mix

Rice products categorized under HS Code 100630 (Semi-milled or Whole-milled) comprised of the most valuable commodity in global trade during 2020 and accounted for 82% of all rice exports. The percentage share of different product HS Codes as a composition of global exports of Rice are exhibited in the chart below.

Figure 10: Rice Exports Product Mix



Source: Trade Map

5.1.3 Major Import Destinations

The largest importing country of Rice during 2020 was China followed by Saudi Arabia and USA. The import trade values of the ten biggest importing countries during the last 5 years are provided in the table below.

Table 6: Major Importers of Rice in Last 5 Years – Value in US \$ '000'

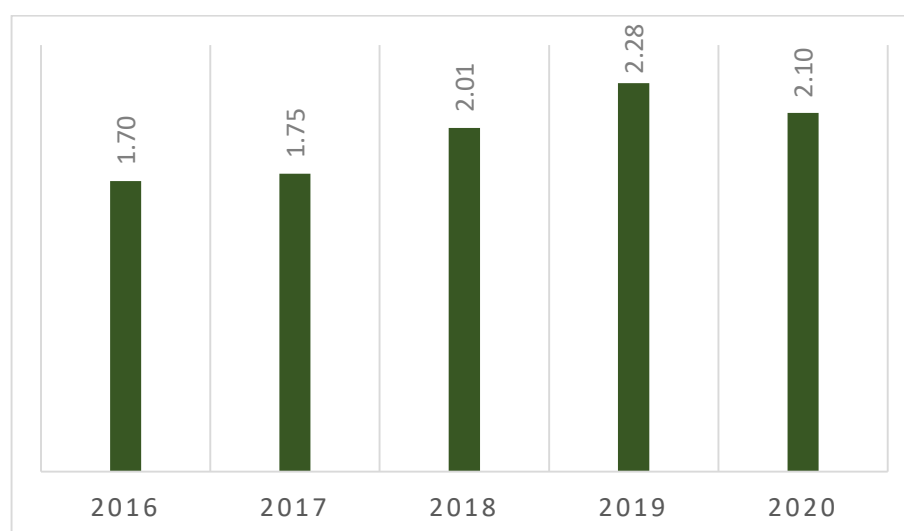
Importers	2016	2017	2018	2019	2020
China	1,585,832	1,827,844	1,599,660	1,253,724	1,459,294
Saudi Arabia	917,304	1,021,031	1,314,680	1,415,088	1,404,237
USA	714,438	727,638	966,541	1,086,354	1,283,835
Iran	690,737	1,214,041	1,628,522	1,469,516	881,030
Philippines	210,672	278,712	736,649	1,009,687	862,013
Iraq	520,160	634,826	845,705	856,595	689,569
UK	430,906	546,992	481,418	530,661	624,514
Malaysia	378,287	345,710	405,956	452,695	589,519
France	448,095	475,254	522,862	541,379	589,348
UAE	844,762	760,770	700,209	535,375	585,893

Source: Trade Map

5.2 Pakistan's Exports of Rice

Pakistan is one the major exporting countries of Rice. During the year 2020, Pakistan's export value of Rice was US \$ 2.10 billion with 2% growth rate comparing to previous year. The rice trade from Pakistan has witnessed an annual growth of 7% between 2016 ~ 2020. Similarly, Pakistan's share is world rice exports stand out at 6.7% during the year 2020. Pakistan's export of Rice over the last five years is as follows:

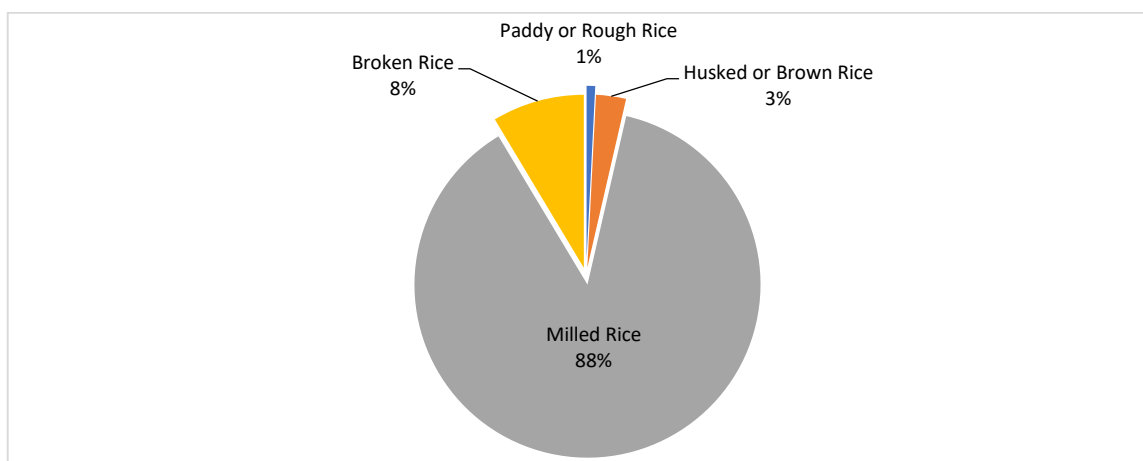
Figure 11: Pakistan's Exports of Rice – Last 5 Years (Value in US \$ Billion)



5.2.1 Pakistan's Major Product Mix

Rice products categorized under HS Code 100630 (semi-milled or whole-milled) constituted the most valuable commodity of all exports from Pakistan and accounted for 88% of its product mix 2018. The percentage share of different product HS Codes as a composition of all rice exports from Pakistan is exhibited in the chart below.

Figure 12: Pakistan's Rice Exports Product Mix



Source: Trade Map

5.2.2 Pakistan's Export Destinations

The largest importer of Rice from Pakistan during the year 2020 was China followed by Kenya and Afghanistan. The import trade values of the top ten rice importers for Pakistan during the last 5 years are provided in the table below.

Table 7: Major Importers of Rice from Pakistan in Last 5 Years – Value in US \$ '000'

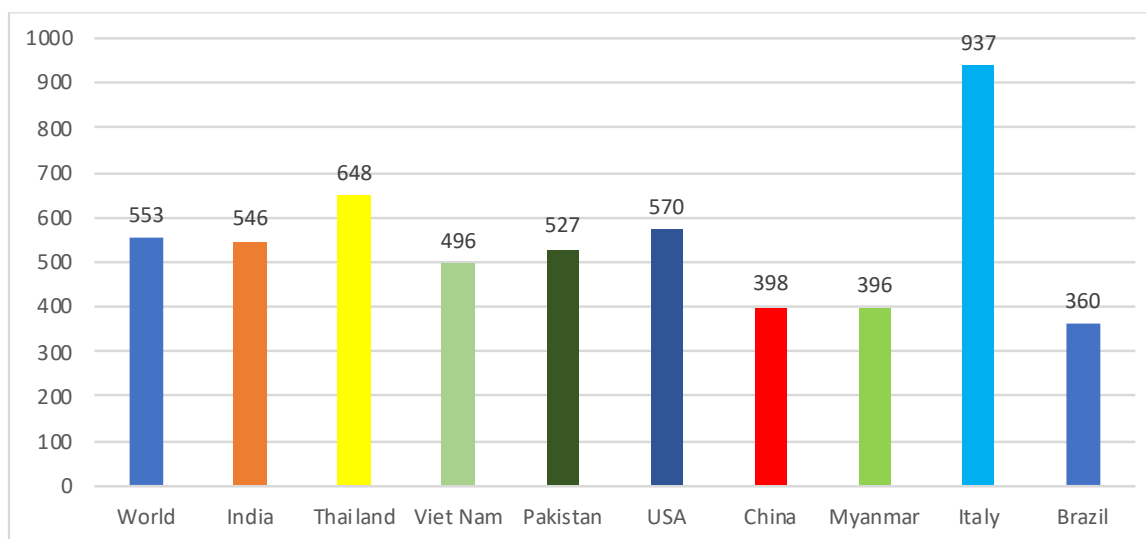
Importers	2016	2017	2018	2019	2020
China	220,821	95,655	162,310	278,694	256,891
Kenya	191,421	229,459	189,635	188,094	159,663
Afghanistan	119,496	124,466	132,189	80,591	145,822
UAE	134,721	179,597	121,236	234,786	145,655
United Kingdom	30,943	37,525	95,842	90,018	116,649
Saudi Arabia	61,767	66,652	66,348	102,766	97,054
Mozambique	82,111	45,025	43,754	85,655	75,484
Belgium	31,707	34,313	56,845	65,537	70,341
Italy	16,010	20,285	50,162	60,927	70,260
Oman	50,537	64,547	61,349	67,233	64,606

Source: Trade Map

5.3 Price Comparisons

The graph below provides the price charged per ton by the world's top 10 exporting countries for Rice products in 2020.

Figure 13: Price Comparison of Top 10 Rice Exporting Countries (US \$ / Ton)



Source: Trade Map

6 Major Stakeholders

The major stakeholders of the Rice Sector in Pakistan mainly comprises of the following:

- Rice Exporters Association of Pakistan (REAP)
- Basmati Growers Association (BGA)
- Rice Growers / Farmers
- Rice Research Institute, Kala Shah Kaku Lahore
- Pakistan Agriculture Research Council (PARC)

7 Major Issues and Problems

The major issues and challenges faced by the Rice Sector are outlined below.

Major Category of Issues	Description
Issues in Value Chain	• Limited and low yield variety of Basmati Rice • High production costs and declining yield of current basmati varieties make its cultivation a less profitable venture • Lack of availability of certified seeds • Lack of technology for harvesting and threshing, which results in damage to the quality of rice

	• Lack of quality assured Farm Inputs • Adoption of old traditional system to dry the paddy • Price and demand fluctuations
Business Development Support	• Poor Farm Management – Lack of Skilled Workforce • Technical Experts for Post-harvest Handling of the Rice • Modern Cultivation and Ploughing Techniques • Packaging • Warehouse Management • Water Management • Branding and Marketing
Access to Finance	• Lack of sector specific or cluster based lending options • Non-availability of Crop Insurance
Infrastructure and Strategic Initiatives	• Inappropriate and insufficient mechanical drying and storage facilities • Inadequate Research & Development facilities and funding • High seaport container storage times and costs
Marketing and Sales	• Limited Certification & Compliance • Cumbersome regulatory procedure for export • Lack of Branding • Access to International Markets
Networking & Institutional Strengthening	• Lack of coordination and networking among Regulatory Bodies, Shipping Lines and Trade Association • Lack of coordination and support among Framers, Processor and Traders

8 Key Interventions

According to industry stakeholders' inputs and secondary data analysis, the following interventions are suggested to improve the performance and address the major issues and problems of the Rice Sector.

- Development of Hybrid Seed for Climatic Resistant and Higher Yield Crop Varieties
- Seed Certification for Standardized Product Quality
- Technological Upgradation – Facilitation in Adaptation of Modern Technology at Farm Levels
- Adaptation of International Standards / Certifications
- Provision of Modern Storage and Warehousing Facilities
- Promotion of Fortification and Value Added Products
- Development and Implementation of Pakistan Basmati Rice Export Marketing Strategy

- Capacity Building and Skill Enhancement
- Reducing Regulatory Barriers
- Establishment of Logistics Education and Training Facilities
- Enhancing Coordination between Freight Forwarders and Shipping Lines

9 Useful Links

In order to facilitate the potential investors, web links of relevant organizations are given in this section.

Organization	Web Link
Rice Exporters Association of Pakistan (REAP)	https://reap.com.pk
Basmati Growers Association (BGA)	https://basmatigrowers.com/
Rice Research Institute, Kala Shah Kaku Lahore	https://aari.punjab.gov.pk/rice_ksk
Pakistan Agriculture Research Council (PARC)	http://www.parc.gov.pk/
Ministry of National Food Security & Research (MNFSR)	http://mnfsr.gov.pk
Agriculture Department, Punjab	http://www.agripunjab.gov.pk
Agriculture Department, Sindh	https://agri.sindh.gov.pk
Agriculture Department, Khyber Pakhtunkhwa	https://agriculture.kp.gov.pk
Agriculture Department, Baluchistan	https://balochistan.gov.pk
Board of Investment (BoI)	http://boi.gov.pk/
Ministry of Commerce	http://www.commerce.gov.pk/
Small and Medium Enterprises Development Authority (SMEDA)	http://smeda.org/
International Trade Centre (ITC)	https://www.trademap.org
Trade Development Authority of Pakistan (TDAP)	http://www.tdap.gov.pk/