Status of Horticulture Sector in Pakistan

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Introduction

Islamic Republic of Pakistan is situated in a very important geographical location in South Asia. Pakistan, which has a total area of 796,095 km^2, shares a 6,774 km long land border with Afghanistan to the west, China to the northeast, India to the east and Iran to the southwest. It also has a 1,046 km long coastline that runs along the Arabian Sea and the Gulf of Oman to the south. Pakistan shares a sea border with Oman and is only barely separated from Tajikistan by Afghanistan's Wakhan Corridor in the northwest. With about 212 million citizens, Pakistan is the sixth-most populous nation in the world. 136 million people, or around 64% of the population, reside in rural areas of Pakistan. Karachi has the highest population, followed by Lahore and Faisalabad. Islamabad is the country's capital and has a 1.0 million population.

(Source; Wikipedia)

Pakistan is an ethnically and linguistically diverse country, with a similar variation in its geography and wildlife. The climate varies from northern arid high desert at 5 000-meter altitude, to southern coastal sub-tropical. Pakistan has a semi-industrialized economy with a well-integrated agriculture sector. Out of the total area of 79.6 million hectares, 22.1 million hectares are cultivated; the rest of the territory is comprised of culturable waste, densely populated forests and rangelands. The cropped area constitutes 23.3 million hectares, while forests cover 4.6 million hectares of the total land. The country has the world's largest contiguous irrigation system with almost 80 percent of the cultivated area irrigated.

Pakistan is also amongst the world's top ten producers of wheat, cotton, sugarcane, mango, dates and kinnow oranges and is ranked 10th in rice production. Major crops (wheat, rice, cotton and sugar cane) contribute around 4.9 percent, while minor crops contribute 2.1 percent to the country's total GDP. The livestock sector contributes 11 percent to the country's GDP (60.5 percent in the agriculture sector) and employs approximately 35 million people. Fisheries and forestry sectors each contribute an estimated 0.4 percent to the GDP (2.1 percent in the agriculture sector).

Horticulture sector of Pakistan

Pakistan can grow a wide range of tropical and subtropical fruits and vegetables due to its diverse agroclimatic conditions. The Pakistani fruits and vegetables market is segmented by vegetables and fruits and includes the production analysis, trade in terms of import (value and volume) and export (value and volume). The horticulture sector contributes about 12 percent to the national agriculture GDP, but its volume of exports remains relatively low. Food Security and economic development of the country predominantly hinge upon agriculture. Horticulture in Pakistan has emerged as an important sector contributing to the national agricultural GDP's share and produce a large number of horticultural products to fulfill the domestic demand of fruit and vegetables for the ever-increasing population. The demand for fruits and vegetables is continuously increasing in local and export markets.

More than 29 types of fruits and 33 types of vegetables are produced in the country throughout the year. Some of the major fruits and vegetables produced are oranges, mangoes, apples, onions, tomatoes, carrots and watermelons. Pakistan is the fourth largest producer of mangoes in the world, with an annual production of about 1.6 million metric tons. Onions, carrots and tomatoes together make up around 49% of the gross vegetable production in Pakistan. In 2021, Pakistan produced approximately 4.6 million tons of vegetables. Most of the production is consumed in domestic markets. However, last year there was an increase of 22.16 and 15 percent in fruit and vegetable exports, respectively. Fruit export rose to 975.2 thousand tons as against last year's 798.3 thousand tons and vegetable export reached 950.2 thousand tons from 825.5 thousand tons. The tropical and subtropical fruits are grown in Punjab and Sindh province while most of the temperate fruits are grown in Baluchistan and Khyber Pakhtunkhwa. The details about fruit-growing areas can be seen in Table 1.

Table 1. Main Fruits Grown in Pakistan

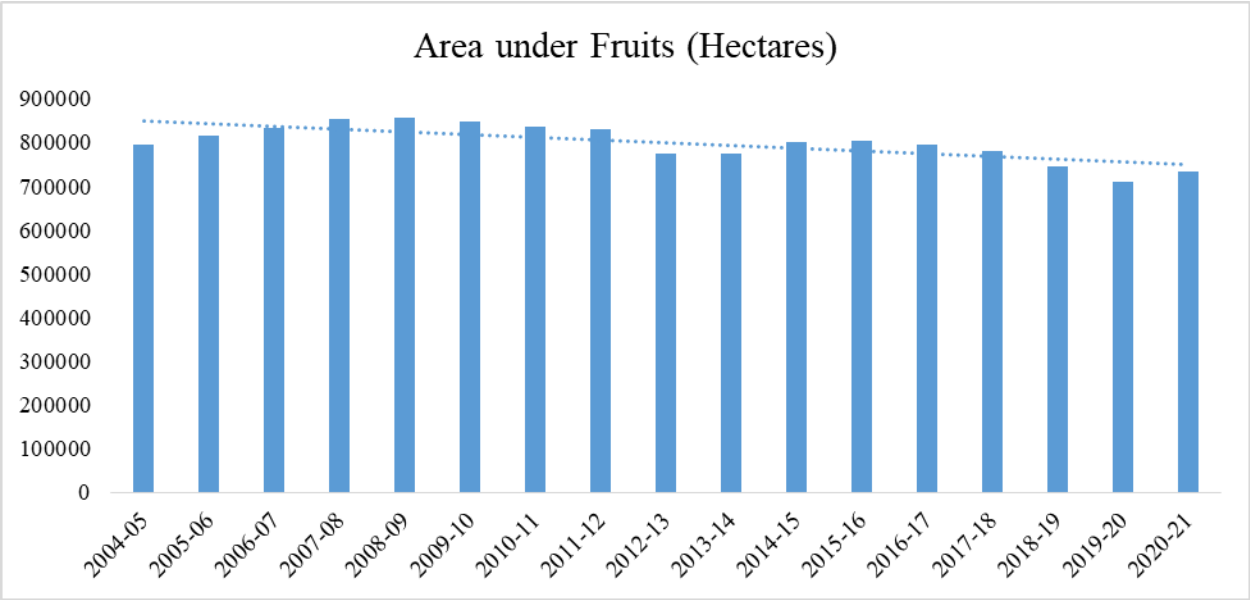
Category of fruit crop	Name of fruits	Main producing areas
Temperate fruit	Apple, apricot, cherry, peach, pear, plum, grape, strawberry and currant	Mountainous areas of Balochistan, Khyber Pakhtunkh- wa, Punjab and Gilgit-Baltistan
Tropical fruit	Banana, mango, guava, papaya and tamarind	Southern part of the country
Subtropical fruit	Date, fig, orange and pomegranate	Plains and plateaus of Punjab and Sind

Source: Trade Development Authority of Pakistan 2023

The production of flowers such as roses, lilies and tuberoses is also increasing due to high demand both locally and internationally.

Export Potential of the Horticulture Sector

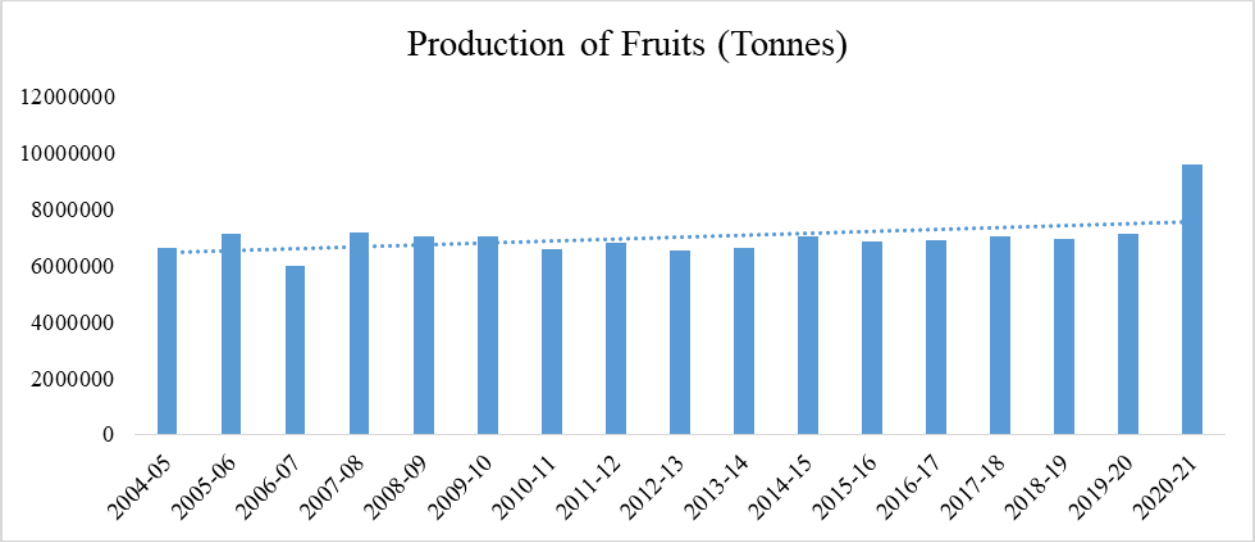
Pakistan's horticulture sector is an important direct and indirect contributor to growth and exports. Its wide variety of products is supported by a combination of natural assets and established export connections, sector organization factors and human factors. These strengths support the sector's potential to contribute to export growth, job creation and women economic empowerment, particularly in rural areas. Pakistan's agriculture sector is being negatively affected by the changing environment, especially horticulture. The last year was a (2020-21) slight increase in area under-fruit crops in Pakistan (Fig. 1). However, a significant increase in fruit production and export has been seen during the last year (Fig. 2 & 3). This is a positive sign for Pakistan's horticulture sector depicting the increased interest of the stakeholders. The increase in production might be due to the adoption of new production techniques, efficient use of resources, adoption of good agricultural practices and reduction in postharvest losses. The farmer's profitability has increased due to the increase in per acre yield and exportable fruit. Hopefully, this positive trend will continue in the coming year because every stakeholder is trying his best to uplift the horticulture sector.



Source: Ministry of National Food Security and Research, Pakistan

Figure 1. *Total area under fruit production in Pakistan (2004-2021)*

As the production of vegetables is concerned no significant increase in area has been noticed but there was 15 % increase in export volume of the vegetables (Fig. 4 & 5).

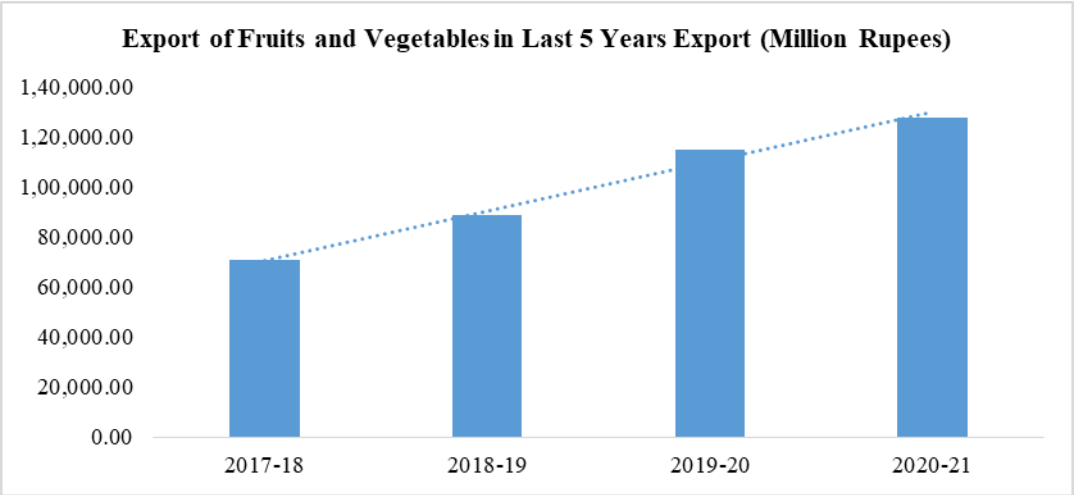


Source: Ministry of National Food Security and Research, Pakistan

Figure 2. *Total Fruit production in Pakistan (2004-2021)*

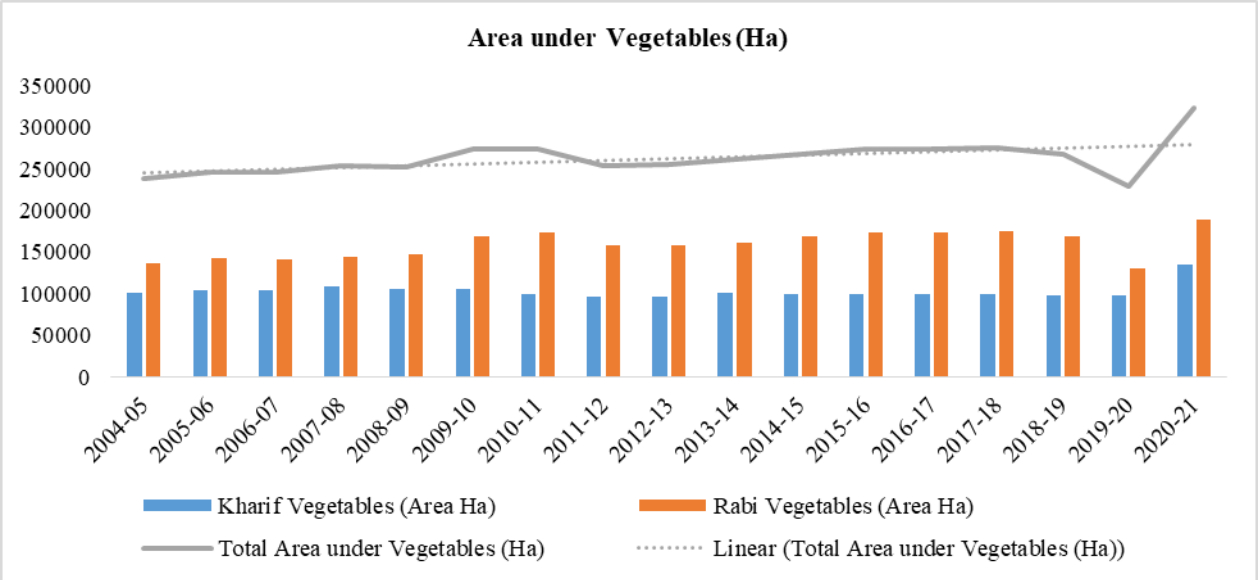
This suggests that Pakistan, s horticulture sector has started making progress according to the needs of the global market. However, there is a huge difference between the actual potential and the present export volume of the horticulture sector. The horticultural products grown in Pakistan are not the most popular ones in foreign markets. Most of the horticultural products are consumed locally and less part is exported. While the country also produces a variety of products that are in high demand elsewhere, the domestically cultivated varieties do not always fulfill the standards for export. Developing varieties that are tailored to global consumer preferences is essential if Pakistan is to become a significant exporter of horticultural products as its potential. Most of the horticultural crops produced in Pakistan lack the qualities and kinds that the primary importing markets require, which limits the sector's ability to perform in international trade in addition to the lack of diversification of its export portfolio. Apart from more local consumption poor product quality and high pre and post-harvest losses are also the main reasons for less

export volume. These issues can be overcome by the efficient use of available resources and technologies. The study of native and non-hybrid seed varieties is the most important aspect which needs consideration.



Source: Pakistan Bureau of Statistics

Figure 3. *Total revenue generated by the export of fruits & vegetables (2017-2021)*

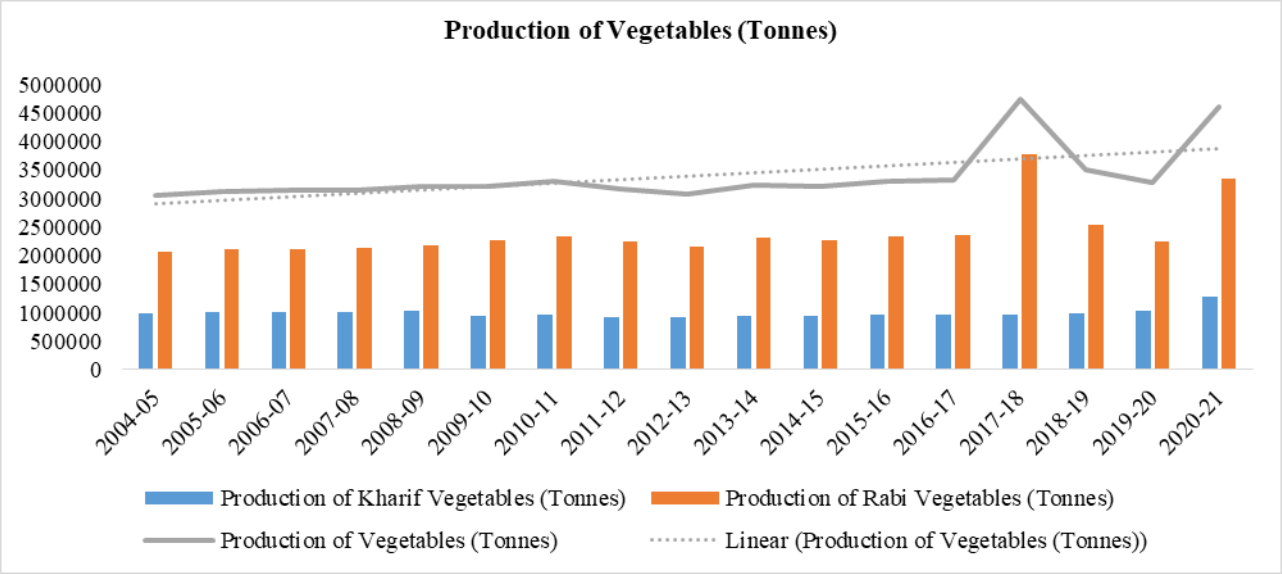


Source: Ministry of National Food Security and Research, Pakistan

Figure 4. *Total area under vegetable production in Pakistan (2004-2021)*

Major Fruits & Vegetables exported

Only citrus and potatoes are exported in a reasonable quantity from Pakistan. In horticultural crops, kinnow stands at 1 position with respect to area under cultivation and export volume. During the last years, the share of kinnow in total export of horticultural crops was 30%. Currently, a small number of commodities make up most of Pakistan's horticultural exports, with citrus fruit (and kinnow in particular), mangoes, dates, onions and potatoes accounting for more than 80% of the country's export earnings (Table 2).



Source: Ministry of National Food Security and Research, Pakistan

Figure 5. *Total Vegetable production in Pakistan (2004-2021)*

After citrus, mango is grown at large area in Pakistan but only 3.7% of total production is exported (Table 3). As mentioned in Table 3, a very less % of horticultural crops are being exported. The main constraint is not growing of demanding cultivars for the global market. For example, Pakistan produces a large number of mangoes, farmers do not grow the "Alphonso" cultivar, which is high in demand in the global market. The farmers are growing only those cultivars that are only suitable for local consumption. The same is the case for all horticultural crops.

Table 2. Major fruits and vegetables exported by Pakistan.

Product	Value (USD, Million)	% Share in total F & V exports
Citrus fruit	205.4	30%
Onions	124	18%
Guavas & mangoes	101.5	15%
Potatoes	68.4	10%
Dates	60.3	9%
Bananas	23.9	4%
Frozen vegetables	23.9	4%
Other	71	11%

Source: Trade Development Authority of Pakistan 2023

Major Horticultural Commodities Imported

This is very surprising & unfortunate that being an agricultural country Pakistan needs to import some horticulture commodities to fulfill its local demands. The major share in the import of horticultural commodities is dried leguminous vegetables (58.8%) followed by garlic (9.2%). Details can be seen in Table 4.

Table 3. Total area, production exported volume of main fruits & vegetables of Pakistan

Product	Total area (000, ha)	Total Yield (000, tons	Export Volume (000, tons)	% Exported	Global Position
Citrus	181	2 468	361	14.6%	12th largest producer; 18th largest exporter
Dates	99	420	100	23%	5th largest producer; 8th largest exporter
Mangoes	158	1 722	65	3.7%	5th largest producer; 7th largest exporter
Bananas	29.7	135	9.3	69%	N/A
Apples	82	543	0.5	0.1%	N/A
Potatoes	234.4	4 681	355	7.5%	13th largest producer; 11th largest exporter

Product	Total area (000, ha)	Total Yield (000, tons	Export Volume (000, tons)	% Exported	Global Position
Onions	153	2 099	317	15%	6th largest producer; 16th largest exporter
Vegetables, fresh	65	1 074	136	13%	N/A
Cauliflowers and broccoli	12.5	212	71	33%	8th largest producer
Tomatoes	38	413	24	5.8%	N/A
Chilies	45.7	103	0.2	0.2%	5th largest producer

N/A: Not listed among top

Source: Trade Development Authority of Pakistan 2023

Floriculture industry in Pakistan

The floriculture industry in Pakistan has seen significant growth in recent years, with an increase in demand for flowers both domestically and for export. The country has favorable climate and soil conditions for the production of a wide range of flowers, including roses, chrysanthemums, carnations and gladioli.

Here are some key points about the floriculture industry in Pakistan:

1. Pakistan's floriculture industry is primarily concentrated in the Punjab province, which accounts for more than 80% of the country's flower production.
2. The industry is dominated by small and medium-sized growers, who typically operate on less than one hectare of land.
3. The most commonly grown flowers in Pakistan include roses, tuberoses, chrysanthemums, carnations and gladioli. These flowers are grown both in open fields and in greenhouses.
4. The floriculture industry in Pakistan is primarily focused on domestic consumption, with flowers used for a variety of purposes such as weddings, funerals and religious events.
5. However, there is also a growing demand for Pakistani flowers in international markets, particularly in the Middle East and Europe. Pakistan currently exports flowers to countries such as the UAE, Saudi Arabia, the UK and the Netherlands.
6. The government of Pakistan has identified the floriculture industry as a priority sector for development and has taken steps to support its growth. This includes providing training and technical assistance to growers, as well as offering subsidies for the establishment of greenhouses and other infrastructure.

Overall, the floriculture industry in Pakistan has significant potential for growth, both in terms of domestic consumption and export markets. With continued investment and support from the government, the industry is poised for further development in the coming years.

Table 4. Major fruits and vegetables imported by Pakistan

Product	Value (USD, Million)	% Share in total F & V Imports
Dried leguminous vegetables	655	58.8%
Garlic	102	9.2%
Tomatoes	65	5.8%
Grapes	60	5.4%
Apples	36	3.2%
Onions and shallots	28	2.5%

Source: Trade Development Authority of Pakistan 2023

Medicinal Plants Sector of Pakistan

The medicinal plants industry has enormous potential to grow in Pakistan, but it is still in its infancy stage. Currently, more than 6,000 plant species are used in traditional and folk medicine in Pakistan and some of them have proved to be effective in treating certain diseases.

Potential of Medicinal Plants Sector in Pakistan

Pakistan's diverse climatic regions provide an ideal environment for the growth of medicinal plants. These plants are found in the northern mountains and foothills, plains and coastal areas of Pakistan. Over 12,000 species of plants grow in the wild and many are used in traditional medicines. According to the World Health Organization (WHO), more than 80% of the global population depends on traditional medicines for their primary healthcare needs. The global market for herbal medicines is worth almost $100 billion and is increasing at a rate of 6% annually. Pakistan has the potential to export herbal medicines and earn foreign exchange by utilizing its rich biodiversity of medicinal plants.

Moreover, the production of herbal medicines is an eco-friendly process that does not require the use of petrochemicals or synthetic ingredients. The use of medicinal plants can help reduce the dependency on synthetic drugs and address the growing concern of drug resistance.

Challenges and Opportunities for Horticulture Sector in Pakistan

One of the major challenges faced by the horticulture industry in Pakistan is the lack of modern infrastructure and logistics facilities. Inadequate storage facilities, transportation and packaging systems lead to post-harvest losses and decrease in the quality of horticulture products. The government is taking measures to develop modern infrastructure and logistics systems to enhance the efficiency and productivity of the horticulture industry in Pakistan. The adoption of modern technologies and techniques is a key factor in ensuring the sustainability of the horticulture industry in Pakistan. The use of high-yielding varieties, drip irrigation systems and integrated pest management techniques can help increase production and reduce costs. The government has set up research and development institutes and training centers to promote the adoption of modern technologies and techniques among farmers. There is also a need to develop a strong marketing strategy for horticulture products in Pakistan. Currently, the majority of the products are sold in local markets, which limits the potential for exports. The government is working on developing export markets for horticulture products by establishing trade agreements with other countries and promoting Pakistani horticulture products through exhibitions and trade shows.

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