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Value Chain Analysis and Potential Competitive Advantage of the Date Palm Sector in Qatar: Challenges, Opportunities, and Key Indicators

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Table of contents

Key Messages

- The study aims to assess the date palm value chain and potential competitiveness of the Qatari date palm sector in the international market using three indicators: Market Shares (MS), Revealed Comparative Advantages (RCA), and Trade Balance Indexes (TBI).
- The Qatari date palm sector is not considered competitive in the international date palm market, as indicated by the low RCA and negative TBI indicators.
- The MS for date palm products of Qatar has been low and unstable since 2000.
- The diversification of date varieties and greater orientation towards modern plantations are the most important strengths of the date value chain in Qatar.
- Increasing competition in regional and global date markets is the major threat to the date sector in Qatar.
- A profitable and competitive date palm sector could be achieved by focusing on high yields and commercial varieties to ensure higher date palm productivity, as well as the adoption of quality standards to meet international market demands and requirements.
- It is crucial to set up a strategy for increasing the competitiveness, profitability, and growth of the date value chain in Qatar, which must be stakeholder-driven and with a clear vision of how to increase date palm product competition and marketing.

Highlights

- This study examined the date palm value chain in Qatar and evaluated the trends of date production and productivity in the country.
- Qatar is considered a net importer of date palm products.
- The findings highlight the need for a strategy to increase competitiveness and prioritize actions for growth of the date value chain.
- To enhance the date palm value chain in Qatar, three development strategies are to be considered towards dynamic and systemic change: (i) supply chain development and management; (ii) market and marketing development; and (iii) agri-business development.

1. Introduction

1.1. Qatar: A Brief Overview

The State of Qatar is in Western Asia and in the Middle East. The total population of Qatar was estimated at 2.688 million people in 2021. The country covers about 1,149,300 ha (PSA 2022), and its capital city is Doha. The country shares maritime borders with Bahrain, Iran, and the United Arab Emirates (UAE). Qatar is 160 km long and 80 km wide. A major part of Qatar is flat, and in the east is low-lying, rising to a central limestone plateau. Along the western and northern coast, hills rise about 40 m above sea level, and Abu al-Bawl hills is the highest point (about 130 m). The main topographical features of the southern and south-eastern sectors are sand dunes and salt flats. The coastline of Qatar is around 560 km, and its border with Saudi Arabia is about 60 km long. Qatar's landscape is characterized by rocky desert areas, comprising 850 separate depressions. These depressions consist of colluvial soils, mainly composed of calcareous loam, sandy loam, and sandy clay loam, reaching depths of 30 to 150 cm. The primary agricultural soils within these depressions are known as '*RODAT*'. However, along the coasts of Umm Said, Dukhan, and the southern boundaries of the country, the dominant depression soils are referred to as '*SABKHA*' (i.e., defined as flat depression, usually close to water, and covered with salt crust). The southern part of Qatar exhibits crater-like depressions, often covered by aeolian sands (i.e., wind-deposited sand that has accumulated over the past 1.8 million years).

The country's economy has registered rapid growth since the discovery of oil and natural gas in 1939. These resources have become the backbone of Qatar's economy, contributing significantly to its strength and development. Despite efforts to modernize the agriculture and fishing sectors, agriculture's contribution to the economy remains relatively insignificant. Several factors, including harsh climatic conditions, limited water resources, poor water quality, and infertile land, hinder the development of the agricultural sector.

The absence of permanent rivers results in the absence of surface water in the country. As a result, groundwater serves as the primary natural internal water resource. Qatar experiences a hot desert climate throughout the year, with summer temperatures reaching up to 50°C. The humidity levels range between 40% and 60%. The

region receives limited rainfall, mainly concentrated between October and May, with a long-term average annual precipitation of 58.6 mm (1962-2021). Figure 1 presents the recorded rainfall rates at different weather stations in Qatar for the period 2016-2021; the year 2021 was relatively dry and the total average precipitation reached 56 mm only (PSA, 2022).

The share of agricultural water use declined from 65% in 2002 to 43% in 2021 (Figure 2). In recent years, about 41% of total water withdrawal has been used for municipal use (non-irrigation uses of water supplied by the city) (PSA, 2022). Irrigation water for agriculture is often pumped from wells and sewage treatment plants.

1.2. Study Objectives

This study aims to analyze the potential competitiveness of the Qatari date palm sector in the international market and provide strategic recommendations for its improvement. Specific objectives are to:

- Examine all national aggregates of the date palm sector, including average yield, total country production, consumption, export, and import.
- Determine the different elements of the date palm value chain and technical, social, economic, and environmental constraints.
- Highlight the challenges and possible opportunities to developing the date palm sector.
- Provide decision-makers and relevant stakeholders with practical recommendations towards sustainable development of the date palm value chain in Qatar.

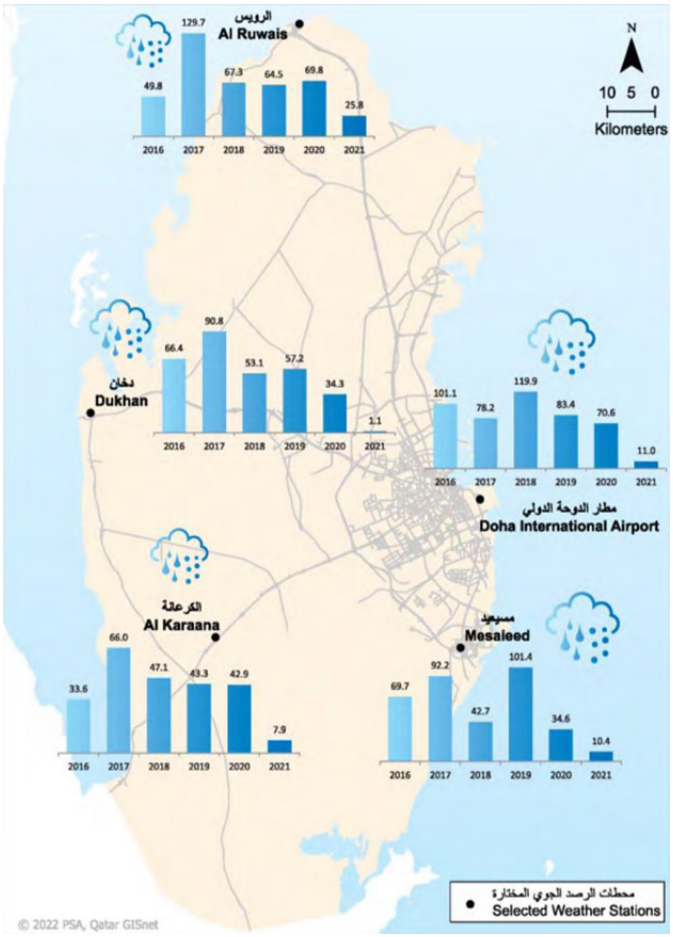

Figure 1. Rainfall rates according to the selected years and stations (mm).

Source: PSA, 2022.

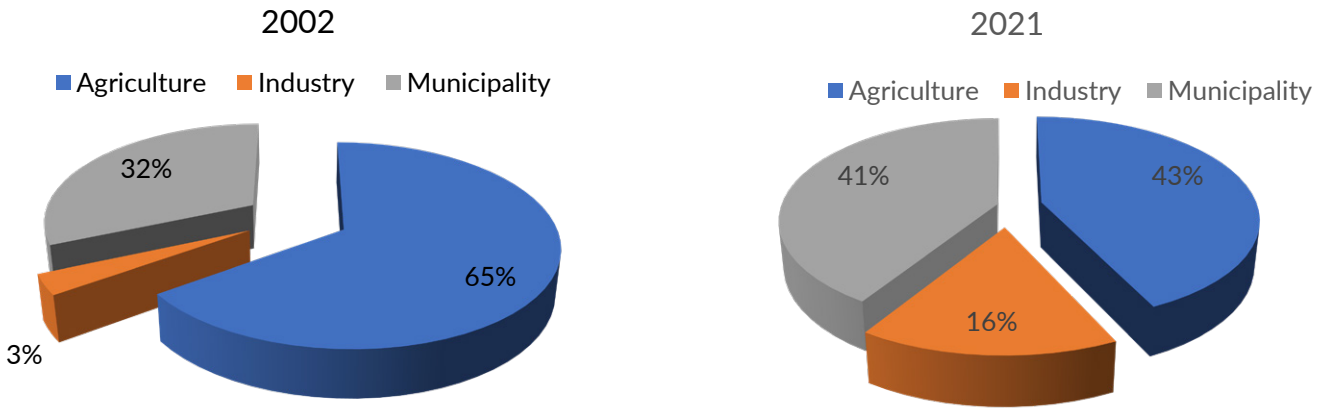

Figure 2. Percentage of water withdrawal by sector.

Source: PSA, 2022.

2. Methodology and Data Collection

Concerning the competitiveness assessment of the Qatari date palm sector, we calculate and discuss a set of trade performance indicators related to the international date market.

The World Economic Forum's *Global Competitiveness Report* defines competitiveness as "the set of institutions, policies, and factors that determine the country's level of productivity." An earlier definition of the competitiveness of national (and regional) economic sectors and clusters of firms (at meso-level) by Porter (1990) refers to competitiveness as the "ability of firms to achieve sustainable success against their competitors in other countries, regions or clusters". This is different from the definition of firms' competitiveness which is somewhat related to the "ability to provide products and services more effectively and efficiently than relevant competitors and to generate, at the same time, returns on investment for stakeholders" (Porter, 1990). The concept of competitiveness therefore requires a number of different indicators to be used and different methods for their calculation (Han et al., 2009). The set of chosen indicators widely used in competitiveness studies includes the MS, RCA, and the TBI.

2.1. Market Share (MS)

The MS indicator is used to identify size advantages and the degree of specialization of a given country in the international market of a given commodity (Han et al., 2009). It is expressed as the percentage of the total available market of commodity *I* (market segment) which is captured by a specific country *j*. MS is calculated as follows:

$$MS_{ij} = X_{ij} / X_{iw} \qquad \text{(Equation 1)}$$

where X_{ij} is the export of commodity *i* of country *j*, and X_{iw} is the total world export of commodity *i*.

2.2. Revealed Comparative Advantage (RCA)

The RCA has been defined by Balassa (1979) as a measure of international trade competitiveness of a given country for a given commodity. It is calculated as being a ratio of the export share of commodity *j* of a country *i*, compared to its total exports (all sectors/commodities included), by the world export share of the same commodity compared to total world exports (all sectors/commodities included). The RCA can be calculated as follows:

$$RCA_{ij} = \frac{X_{ij} / \sum_i X_{ij}}{\sum_j X_{ij} / \sum_i \sum_j X_{ij}} \qquad \text{(Equation 2)}$$

where *X* is the export of commodity *i* by country *j*; $\sum_i X_{ij}$ are total exports of country *j*; $\sum_j X_{ij}$ are total world exports of commodity *i*; and $\sum_i \sum_j X_{ij}$ are the total world exports. If RCA > 1, then a comparative advantage is revealed, but if RCA < 1 then a comparative disadvantage of the respective country is revealed.

2.3. Trade Balance Index (TBI)

TBI is employed to analyze whether a country has specialization in exports (as a net exporter) or in imports (as a net-importer) for a specific group of products. The TBI value indicates a qualitative structure of product export and import and trade flows. It is formulated as follows:

$$TBI_{ij} = (X_{ij} - M_{ij}) / (X_{ij} + M_{ij}) \qquad \text{(Equation 3)}$$

where X_{ij} and M_{ij} represent exports and imports, respectively, of country *i* for product *j*.

The TBI value varies between −1 (if a country only imports) and +1 (if a country only exports). Any value between −1 and +1 implies that the country exports and imports a commodity simultaneously. A country is referred to as 'net importer' in a specific group of products where the value of TBI is negative and as 'net exporter' where the value of TBI is positive.

2.4. SWOT Analysis

A literature review was conducted on the date sector in Qatar. All available national aggregated data, reports, documents, government, and private sector reports were collected and analyzed. The collection of data was accomplished using different national and international statistical databases that covered the entire date value chain. The main data sources used in this study were yearly time series from UN-COMTRADE and the Food and Agriculture Organization of the United Nations

Table 1. SWOT analysis framework.

STRENGTHS
Question: What is already in place that will contribute to improve the marketing, commercialization, and potential competitiveness of dates and date palm products?
WEAKNESSES
Question: What are the challenges that need to be addressed to improve the marketing, commercialization, and potential competitiveness of dates and date palm products and how?
OPPORTUNITIES
Question: What are the existing and future opportunities to improve the marketing, commercialization, and potential competitiveness of dates and date palm products and how they can be mobilized?
THREATS
Question: What are the existing and dynamic risks to be guarded against to improve the marketing and potential competitiveness of the date value chain (i.e., dates and date palm products) and what mitigation actions are needed to put in place to overcome these threats?

Source: PSA, 2022.

(FAO) (from 1961 to 2022) of all national aggregates, including average yield, total country production, consumption, exports, and imports, in addition to the Planning and Statistics Authority (PSA) of Qatar annual series (from 2010 to 2022). For continuity and reliability, data was cross-checked.

The date value chain was also the subject of a SWOT analysis to provide perspective and compile up-to-date data. The SWOT analysis investigated ways to increase the country's marketing, commercialization, and potential competitiveness of dates. This tool also facilitated analysis of the present situation while identifying the necessary components of a future strategic plan (Tran et al., 2016). Table 1 presents a matrix of the components of the SWOT analysis through a set of questions.

3. Agricultural Sector in Qatar

In 2021, Qatar's area of arable land was about 65,000 ha and represented 5.6% of the country's total area (1,149,300 ha). Arable land is mainly located in the northern regions. Green fodder occupied 57.9% of the cultivated land with an area of about 7,565 ha during the period 2019-2021, followed by vegetables with 21.8% of the total cultivated land area during the same period. Cultivated land dedicated to date palm represented 16.9%. Cereals occupied only 1.9% of the cultivated land area (Table 2).

Tomatoes and eggplant were the most produced open field vegetables in 2021, with 6,900 and 4,400 tons produced, respectively. Maize was the leading cereal crop with 2,800 tons produced each year. Alfalfa topped the green fodder category with an average production for about 200,000 tons, in 2021 (PSA, 2022). In Qatar, date palm and citrus are the most commonly produced fruit trees, with 711,866 and 66,166 fruit trees, respectively in 2021 (PSA, 2022).

Qatar's total gross domestic product (GDP) was on the increase from 2000 – rising from US$17.7 billion to US$204 billion in 2014, but has since dipped, totaling US$179.6 billion in 2021 (Word Bank, 2022). Agriculture does not play a significant role in the Qatari economy, and in the 10-year period between 2009-2019, agriculture, forestry, and fishing averaged around 0.15% of GDP. More recently, is has increased slightly to 0.34% in 2020 and 0.3% in 2021. These rates are relatively low compared to other sectors (Figure 3). Agricultural labor is also not significant, representing only 1.18% of total labor in 2021 (Word Bank, 2022).

3.1. Date Palm Sector

Considering the Qatari climate, which is not suitable for many crops, date palm is one of the most adaptable fruit trees in Qatar and other Gulf Cooperation Council (GCC) countries. In the Islamic world, dates have both a social and religious importance. The number of fruit trees increased from 334,481 in 1991 to 711,866 in 2021 and the crop has occupied about 16.9% of Qatar's total cultivated land area during the three years from 2019 to 2021 (PSA, 2022) (Figure 4).

Table 2. Cultivable land area between 2019-2022.

Year	Arable land (ha)							
	Cultivated land (ha)						Uncultivated land (ha)	Total land (ha)
	Cereals	Vegetables	Fruits	Date palm	Green fodder	Total		
2019	153	2,832	149	2,153	7,620	12,907	52,093	65,000
2020	213	3,135	91	2,217	7,990	13,646	51,354	65,000
2021	394	2,766	311	2,393	7,565	13,430	51,570	65,000
Average	253	2,911	183	2,254	7,725	13,327	51,672	65,000
%	1.9	20.6	1.2	18.3	58.0			

Source: Own elaboration from PSA database, 2022.

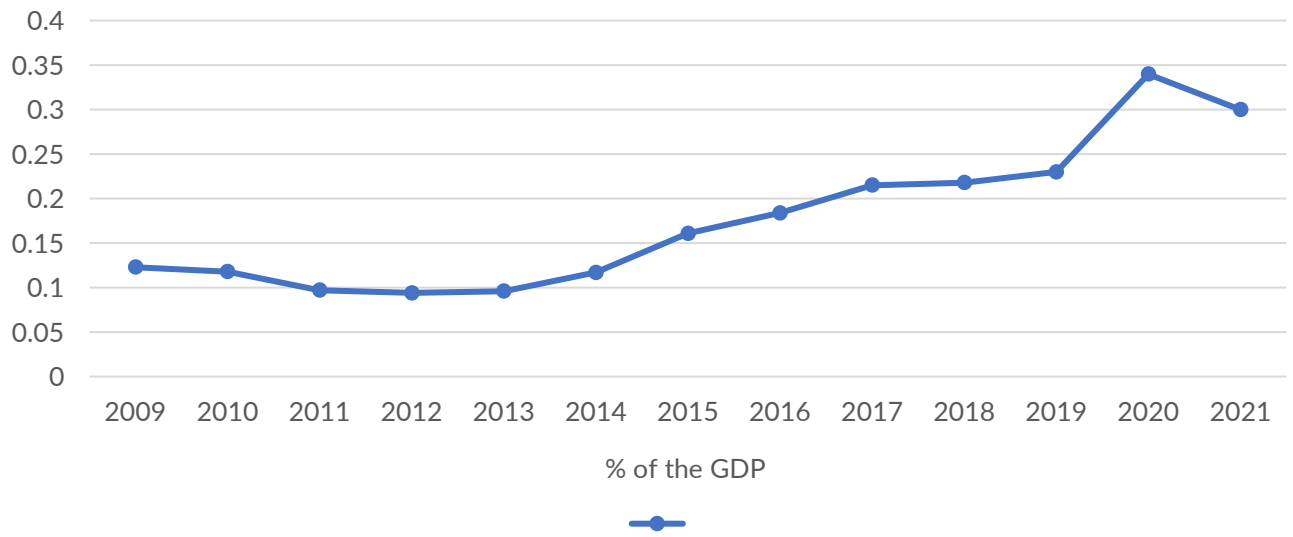

Figure 3. Value of the agricultural sector (% of GDP).

Source: Own elaboration from World Bank database, 2022.

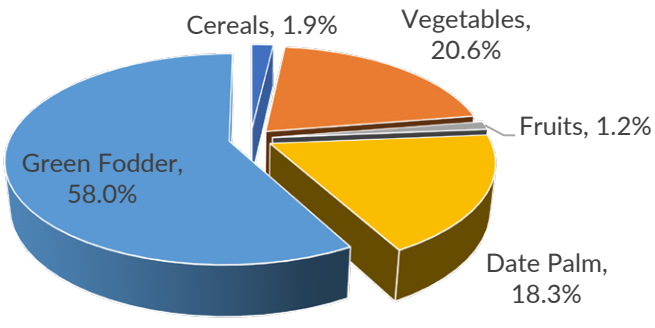

Figure 4. Cultivated land area in Qatar.

Source: Own elaboration from PSA database, 2022.

3.1.1. Production and Date Palm Yield

Date palm production in Qatar reached 28,700 tons in 2021 compared to 21,490 tons in 2010. As shown in Figure 5, date palm production is characterized by a fluctuating growth rate that varied from -19% in 2001 to 43% and 8%, respectively, in 2013 and 2021 (FAOSTAT, 2022).

Despite the scarcity of good water and soil quality, considerable research and development efforts have been deployed to increase date palm yield. Over the period 2020-2022, the average date palm yield was

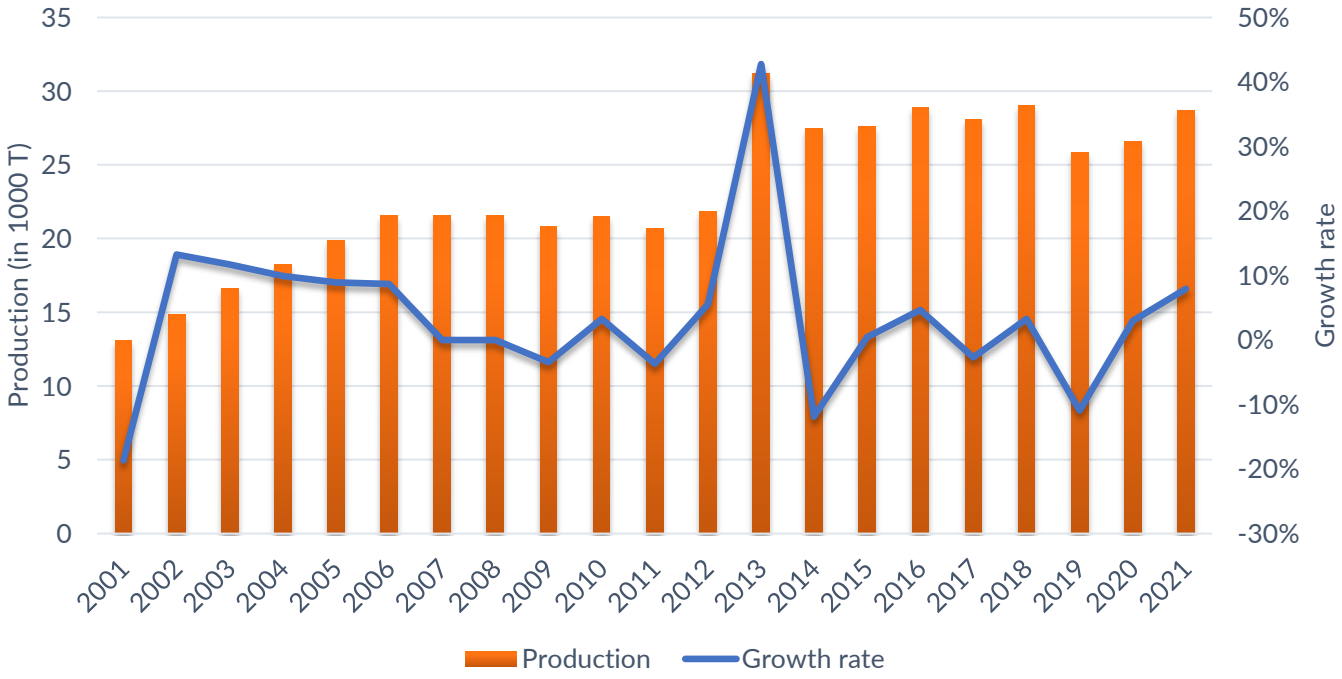

Figure 5. Production and growth rate of date palm in Qatar (2001-2021).

Source: Own elaboration from FAOSTAT database, 2022.

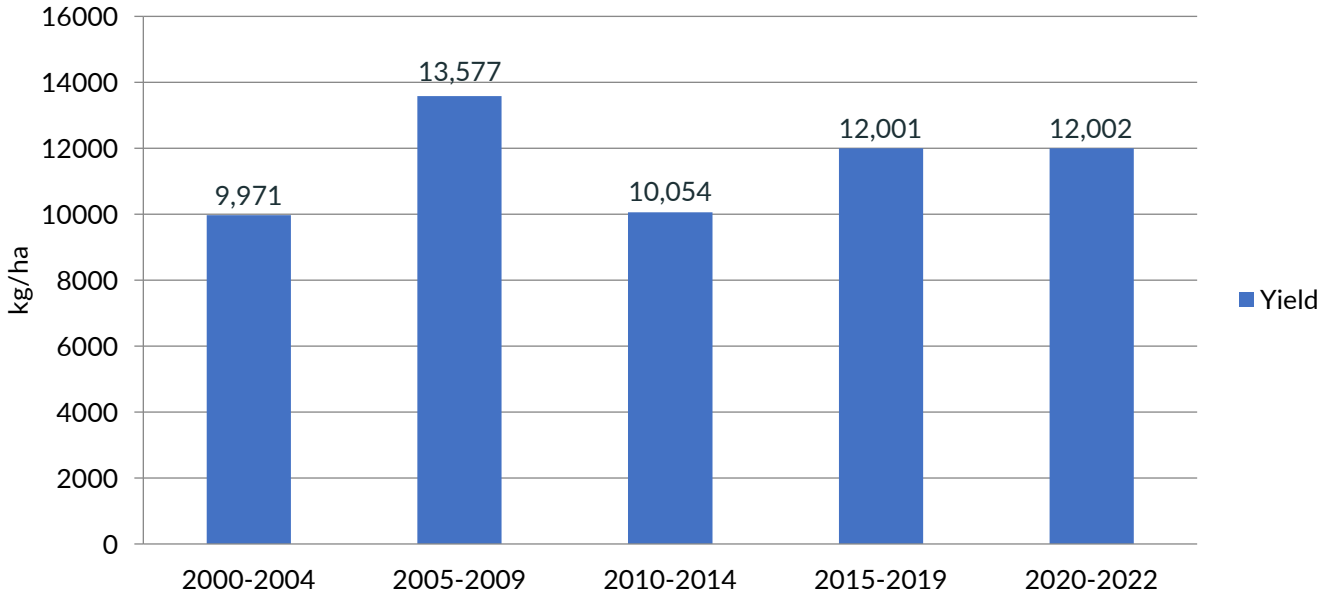

Figure 6. The average date palm yield in Qatar.

Source: Own elaboration from FAOSTAT database, 2022.

around 12,002 kg/ha (Figure 6), which was a rise from 9,971 kg/ha in 2000-2004. During the period 2005-2009, average production peaked to reach 13,577 kg/ha (FAOSTAT, 2022). On average, a mature date palm in Qatar can yield around 50 to 150 kg of dates per year and the average number of palm trees/ha is about 235 (Muhammed et al. 2015).

3.1.2. Date Palm Cultivars

Qatari authorities list hundreds of dates palm cultivars. Some are imported from other Arab countries and others are local. The results of the 2020/2021 agricultural census in Qatar showed that the most important varieties were Birhi, Khinizi, Kholas and Shishi. Table 3 summarizes the main date varieties in Qatar.

Table 3. Numbers of palm trees in active farms by types.

Type	Number of trees		
	Total	With fruit	Without fruit
Kholas	337,909	99,209	238,700
Shishi	96,933	32,349	64,584
Birhi	64,582	24,315	40,267
Khinizi	62,542	26,591	35,951
Nabt Saif	10,622	6,514	4,108
Razizi	6,218	1,142	5,076
Khasab	8,941	6,214	2,727
Lulu	18,934	8,722	10,212
Helali	14,317	6,900	7,417
Silaigy	331	5	326
Shahly	7,849	6,282	1,567
Sokary	11,144	6,914	4,230
Mahamdi	110	60	50
Oamni	1,108	343	765
Sagay	1,945	297	1,648
Zaglolo	261	61	200
Other	68,120	31,509	36,611
Total	711,866	257,427	454,439

Source: The agricultural census in Qatar 2020-2021.

3.2. Date Palm Value Chain

There are various actors involved in different stages of the date palm value chain, from input supply to retail and export. Figure 7, as well as the following summary, presents a clear description of the key value chain actors of dates palm in Qatar as well as other GCC countries:

Input suppliers: supply seeds, organic and chemical fertilizers, pesticides, machinery, and equipment to date producers.

Farmers: there are two types of date farmers in Qatar; traditional small-scale and modern plantation. Usually, traditional small-scale farmers are resource-constrained with little or no ability to store or pack their products.

This type of farmer channels their products to collectors, brokers, wholesale traders, and retail traders. However, big farmers with modern date plantations play a preponderant role in the date value chain with greater capacity to invest and expand their plantation and access storage and packing facilities. Big farmers supply wholesale traders, processors, and exporters.

Collectors: these are intermediary actors and play an important link between producers and wholesale or retail traders. With their limited capacity to invest in infrastructure (i.e,. communications systems, warehouses facilities, and transportation networks), they enable date marketing for small-scale farmers in the domestic market.

Wholesale traders: they are the intermediaries between farmers, collectors, traders, and retailers. In general, at the start of every season, wholesale traders buy dates from farmers on a short-sell basis.

Date processors: these are mostly small and medium-sized enterprises. Most dates are sold as table dates (dried dates), so these actors suffer from limited product processing opportunities.

Retailers: these are traders selling dates at local marketplaces or supermarkets.

International markets: despite the dominance of the domestic market, the export market is also targeted. Big farmers or wholesale companies are most likely to be able to increase their incomes if they have the awareness of the strong need to apply hygiene and quality standards to be more competitive on international markets.

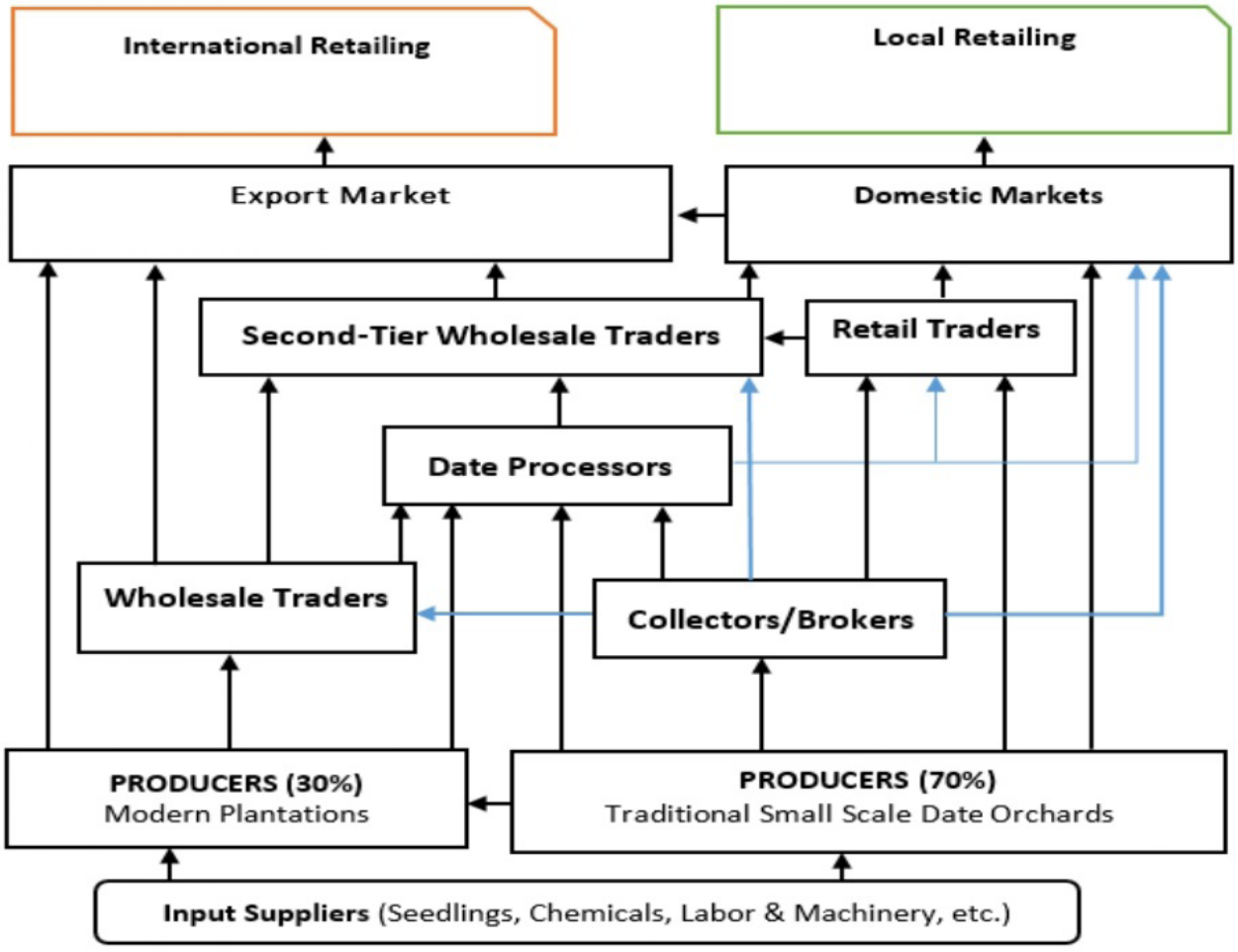

Figure 7. Actors of the date palm value chain.

Source: Rocha et al., 2018.

4. Dates Supply and Demand in Qatar

4.1. Date Imports

To meet domestic demand, date imports have been increasing, up from 3,486 tons in 2010 to 9,962 tons in 2018 (Figure 8). However, Covid-19 impacts led to decreases in 2020 and 2021.

The establishment of the first and second International Date Festival in Souq Waqif in 2018-2019 led to an increase in the quantity of imported dates in Qatar compared to previous years. Qatar's annual date festival is part of the country's efforts to support and encourage local production. The festival aims to promote modern agricultural techniques, support farmers, and improve the quality of dates produced in the country. The festival also highlights the cultural and economic significance of dates in Qatar. The festival is working to create a platform for marketing and selling date products, encourage registered farmers to market their dates, develop marketing techniques, and promote Qatari date varieties to international buyers. The festival also aims to highlight the popularity of date farming in Qatar, despite challenging weather conditions, and to facilitate the exchange of knowledge and expertise among farmers.

Figure 9 shows that Saudi Arabia and the UAE were the largest exporter of dates to Qatar in the period 2015-2017, but Saudi Arabia's export value declined sharply after 2018 due to the embargo imposed by Saudi Arabia, the UAE, Bahrain, and Egypt on Qatar on June 5, 2017. Then, date exports from these countries to Qatar increased slightly in 2019 and 2020. Tunisia's export value has fluctuated over the years, reaching a peak in 2019 and then dropping in 2020 and 2021.

Oman, Kuwait, and Jordan were relatively small exporters of dates to Qatar in 2015 and 2016, but their export values increased significantly in 2017 and 2018, making them the top three exporters of dates to Qatar in those years. Their export values then declined slightly in 2019, 2020 and 2021, but they remained among the top three exporters of dates to Qatar (FAOSTAT, 2022). The blockade, which began in 2017, led to an increase in imported quantities from Tunisia, Kuwait, Jordan, and the Sultanate of Oman in 2018-2021.

4.2. Date Exports

Date exports by Qatar have seen quite significant fluctuations since 2000. Table 4 reveals the most

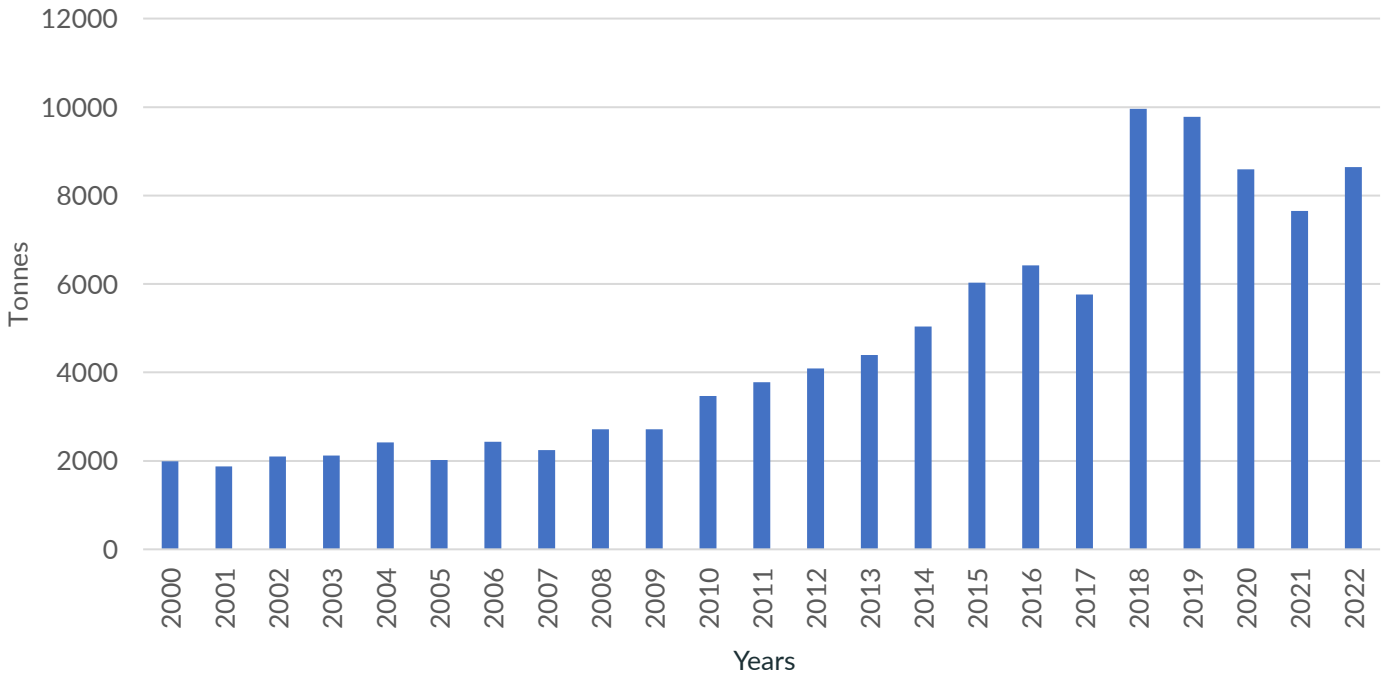

Figure 8. Quantity of imported dates.

Source: Own elaboration from FAOSTAT database, 2022.

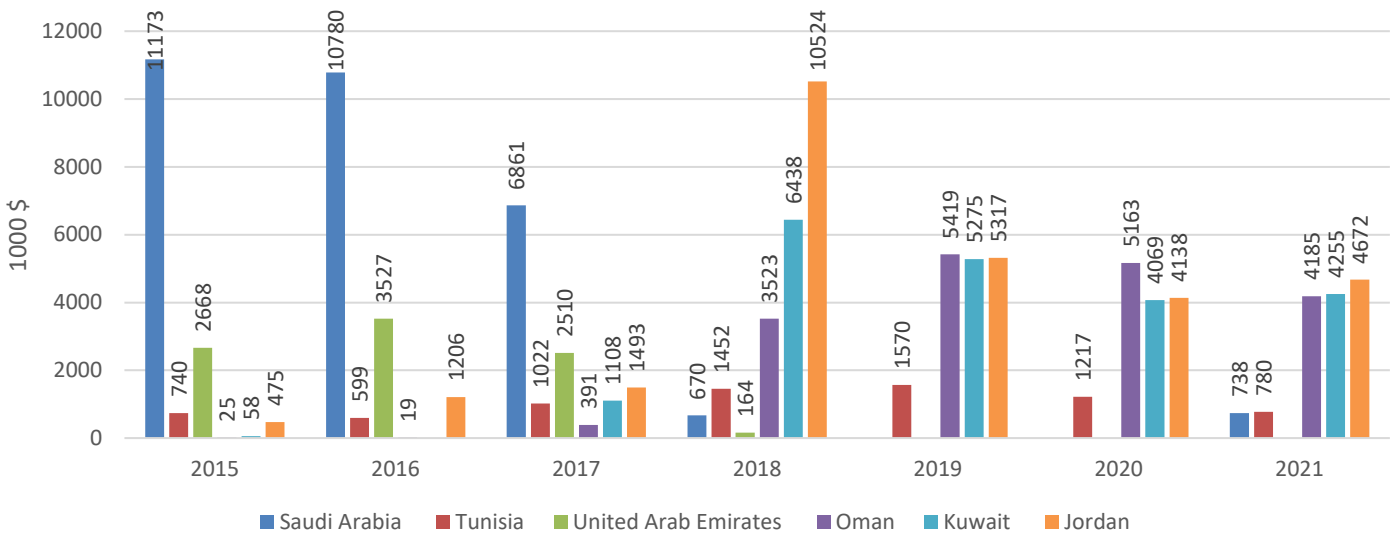

Figure 9. Date palm import value (US$1,000) into Qatar.

Source: Own elaboration from FAOSTAT database, 2022.

Table 4. Exported quantity of dates from Qatar (in tons).

2000		2009		2015		2021	
Partner country	Export quantity	Partner country	Export quantity	Partner country	Export quantity	Partner country	Export quantity
Bahrain	8	Saudi Arabia	22	Jordan	96		
Saudi Arabia	5	Somalia	294	Nepal	31		
UAE	39	UAE	11	Saudi Arabia	119		
		Yemen	100	Sri Lanka	10		
				Turkey	70		
				UAE	24		
				Yemen	150		
Total	**52**		**446**		**535**		**0**

Source: Own elaboration from FAOSTAT database, 2022.

important countries which imported dates from Qatar until between 2000 and 2021.

Total date exports totaled 52 tons in 2000. The UAE was the main partner, accounting for 75% of the total quantity of dates. In 2009, total exports jumped to 446 tons of dates. The biggest quantities were exported to Somalia and Yemen with quantities of 294 and 100 tons, respectively (Table 4). In 2010, these exports decreased by 75% and increased again in 2011 to reach 3,186 tons of dates. From 2013 to 2017, exports continuously increased with an estimated average quantity of 504 tons of dates per year. Exceptionally in 2015, Qatar exported dates to a high number of countries including as Jordan, Nepal, Saudi Arabia, Sri Lanka, Turkey, UAE and Yemen. Qatar did not export dates between 2019 to 2021 as a result of the

establishment of the annual International Dates Festival, local date exhibitions, and international dates exhibitions. In 2022 total dates export reached 779 tons (PSA, 2022). Figure 10 shows the export value of dates in Qatar from 2015 to 2022. The export value has fluctuated significantly over the years, reaching a peak of US$1,061,910 in 2018, then dropping to zero in 2019-2021, and rising again to US$1,360,530 in 2022 (PSA, 2022).

4.3. Date Consumption

On average, 33,797 tons of dates were available for consumption each year between 2010 to 2021. The lowest consumed date quantity was recorded in 2012, the equivalent of 28,517 tons (Figure 11), compared to the highest consumption of 38,557 tons in 2018 (PSA, 2022). Analysis of consumption data reveals a significant fluctuation, with consumption growing at 6% in 2011, and reaching 24% in 2013, but then declining to -7% in 2019, before rising to 2.4% in

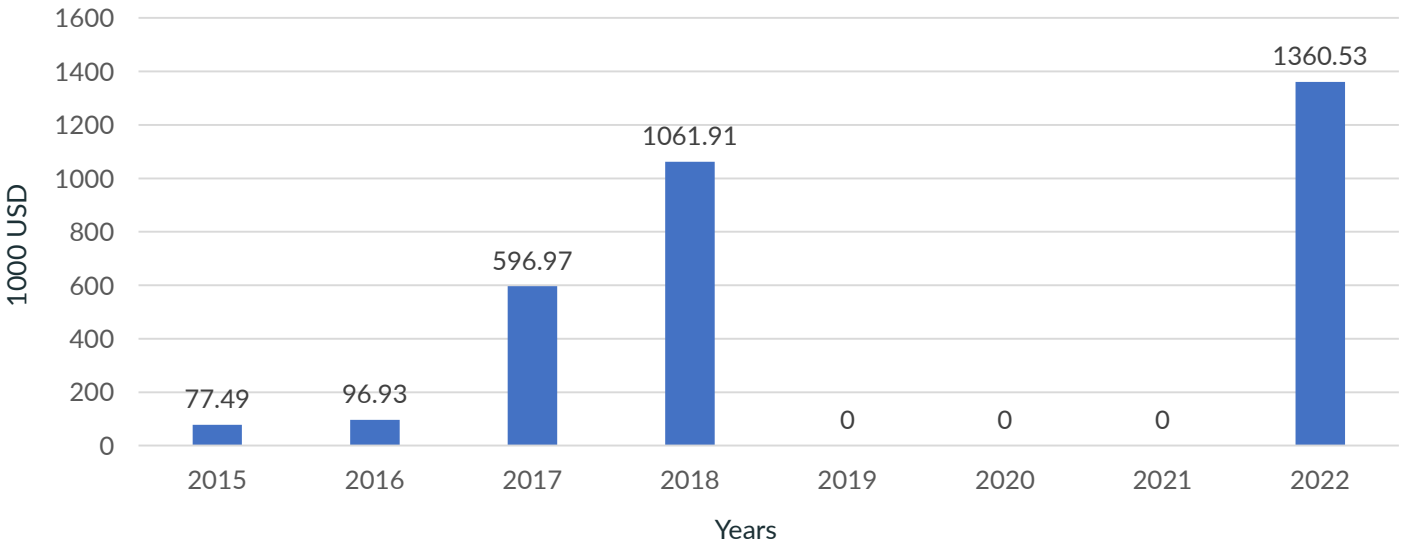

Figure 10. Dates export value (1000 USD) of Qatar.

Source: Own elaboration from PSA database, 2022.

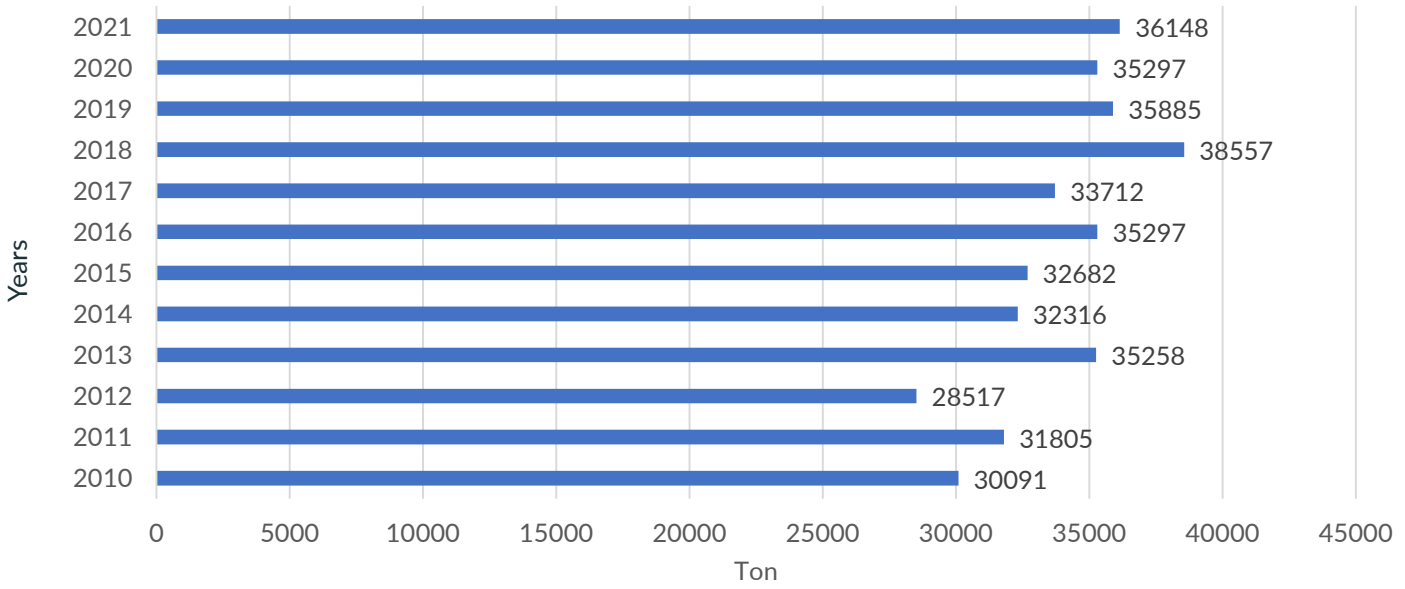

Figure 11. Quantity of date palm consumption (2010-2021).

Source: Own elaboration from PSA database, 2022.

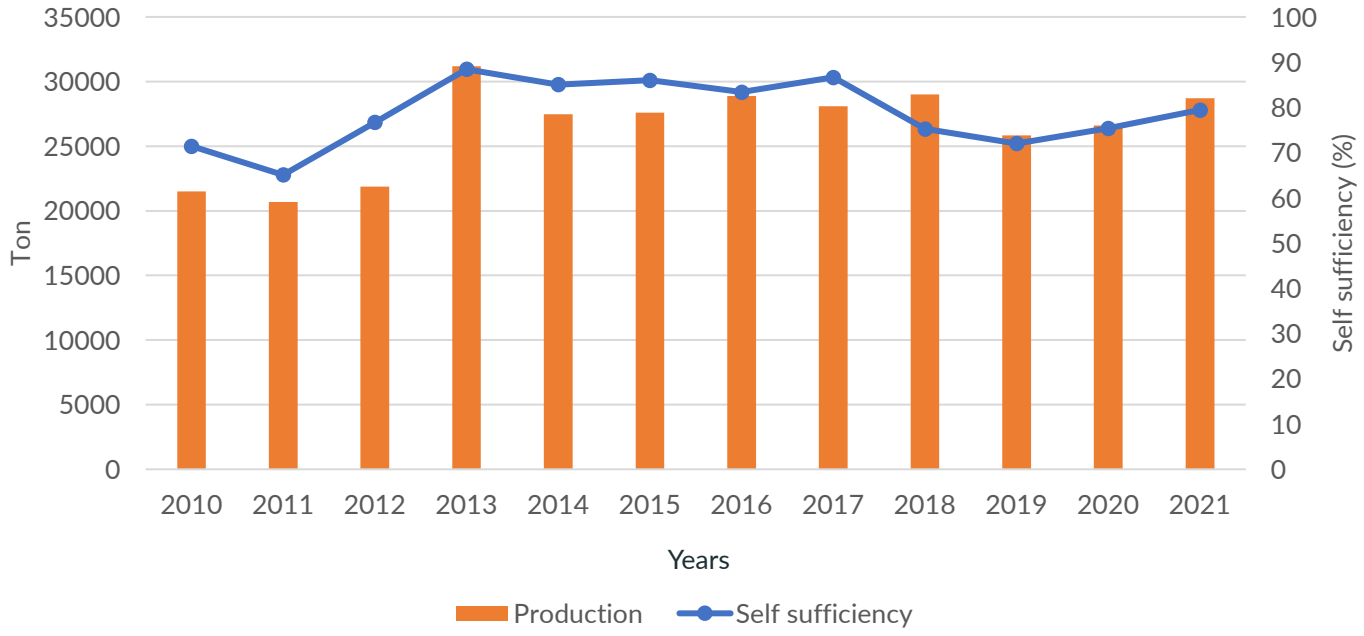

Figure 12. Date production and self-sufficiency.

Source: Own elaboration from PSA database, 2021.

Table 5. Date palm food balance sheet.

Year	Supply (ton)		Consumption (ton)	
	Production	Export	Available	Average yield
2011	20,696	3,186	31,805	3,777
2015	27,596	568	32,682	6,028
2019	25,843	0	35,885	9,781
2021	28,717	0	36,148	7,653

Source: Own elaboration from PSA database, 2021.

2021. Average date consumption in 2021 was around 13.44 kg/person.

The availability of dates for consumption increased remarkably in 2018 due to the import of large quantities for the International Dates Exhibition (Figure 11). The self-sufficiency rate also decreased for the same reason (Figure 12).

Despite the severe climatic conditions and the challenges of water and soil quality, Qatar produces enough dates to meet most of its domestic demand. The country produced 88.4% of its date consumption in 2013. This rate dropped to 72% in 2019 but rose again to 79% in 2021 (Figure 12).

Table 5 shows data on Qatar's food balance sheet for dates. Assessment of dates' import-export balance sheet shows a gap between imports and exports of dates amounting to US$17.169 million in 2021 compared to US$6.036 million in 2011 (FAOSTAT, 2022). This gap is due to the low and fluctuating export quantities of dates. As previously stated, no dates were exported from 2019 to 2021. Therefore, Qatar is classified as a net importer of dates on the international market.

Table 6. Estimated production cost of date palm.

Operation	Costs (QR/ton)	Costs (QR/ha)	% of the total costs
Manual labor costs	2,609	1,373	50.8%
Automated labor costs	262	139	5.1%
Municipal compost (organic)	113	59	2.2%
Chemical fertilizer	93	48	1.8%
Pesticides	51	28	1.0%
Irrigation water	128	68	2.5%
Electricity	252	131	4.9%
Depreciation of irrigation networks	1,212	637	23.6%
Marketing costs	62	33	1.2%
Other costs	354	186	6.9%
Total costs	5,136	2,702	100.0%

Source: Qatar University, 2022.

Table 7. Estimated average yield and net yield per dunum and ton for dates.

The crop	Net return (QR)		Total costs (QR)		Total revenue per hectare (QR)	Average selling price (QR/ton)	Average productivity per dunum (ton)
	per dunum	per ton	per dunum	per ton			
Dates	323	420	5,136	6,677	2,872	5,459	1.3

Source: Qatar University, 2022.

A study was conducted in collaboration with Qatar University in 2021/2022 to estimate costs of producing dates, productivity, and net returns. Table 6 shows estimated production costs for date crops per ton. In total, the cost of producing a ton of dates was about 5,136 QR (US$1,410). Labor was the highest operational cost (50.8% of the total cost), followed by the depreciation of irrigation networks at 23.6% (Table 6).

Table 7 shows an estimate of the net yield per dunum[1] and ton of dates. The average productivity of a dunum of dates was about 1.3 tons, and the net return per dunum of dates was about 420 QR (US$115). The profitability of a ton of dates was about 323 QR (US$88).

4.4. Date Prices

Many factors affect the price of dates, including the type and size, supply/demand, and farmers capacity to store it and provide post-harvest services. Between 2015-2021, the producer price fluctuated between 2.5 QR/kg (US$0.68/kg) in 2016 and 3.6 QR/kg (US$0.98/kg) in 2017. In 2021, the producer price stood at about 2.8 QR/

1 One dunum = 1,000 square meter = 0.1 ha.

Table 8. The average price of some imported date varieties.

Variety	Average price (QR/kg)
Medjool	50-80 (14-22)
Safawi	45-80 (12-22)
Sagay	55-80 (15-22)
Ajwa	80-120 (22-33)

Source: Own elaboration, based on supermarket prices 2021.

Table 9. Dates prices at the Dates Festival 2023.

Variety	Price of 1 kg	Price of 2 kg	Price of 3 kg
Kholas, Shishi and Sokary	10 (2.7$)	18 (4.86$)	25 (6.75$)
Birhi and Khinizi	8 (2.16$)	18 (4.86$)	20 (5.4$)
Nabt Saif	8 (2.16$)	15 (4.05$)	20 (5.4$)
Lulu	6 (1.62$)	15 (4.05$)	15 (4.05$)
Razizi	6 (1.62$)	15 (4.05$)	15 (4.05$)
Gher	6 (1.62$)	15 (4.05$)	15 (4.05$)
Other	6 (1.62$)	15 (4.05$)	15 (4.05$)

Source: Ministry of Municipality, 2023.

kg (US$0.76/kg). These producer prices are dramatically lower than the price consumers pay for dates, which range between 25-120 QR/kg (US$6-33/kg).

In general, brokers provide date palm marketing for small-scale farmers. Brokers often try to take advantage of farmers' limited access to domestic markets and maximize their own profit margin. Larger farmers and date processors, with their storage capacity, are able to access both domestic and international markets themselves, and so can gain much higher prices.

Table 8 presents the average price of some imported date varieties such as Medjool, Safawi, Sagay, and Ajwa. These varieties are considered luxury dates, and they are only found in shopping malls with relatively high prices. Their average prices range from 45-120 QR/kg (US$12-33'kg).[2]

A Ministry of Municipality (2023) report about the 8th Local Dates Festival (i.e., Rutab Festival) detailed producer date prices in 2023 (Table 9). Qatar's annual date festival is part of the country's efforts to support and encourage local production. The festival aims to promote modern agricultural techniques, support farmers, and improve the quality of dates produced in the country. The festival also highlights the cultural and economic significance of dates in Qatar. The festival is working to create a platform for marketing and selling date products, encourage

2 The date varieties mentioned in Table 8 are not produced in large quantities and are not part of the Qatari market. Their prices are mostly determined by importers.

registered farmers to market their dates, develop marketing techniques, and promote Qatari date varieties. The festival also aims to highlight the popularity of date farming in Qatar, despite challenging weather conditions, and to facilitate the exchange of knowledge and expertise among farmers. Concerning packaged dates, prices ranged between 10-20 QR/kg (US$2.75-5.50/kg), while dried and uncoated dates averaged 3.1 QR/kg (US$0.85/kg) (Ministry of Municipality, 2023).

5. International Markets and Potential Competitiveness of the Qatari Date Palm Sector

5.1. Market Share of Qatar in the International Market

Qatar had a very low and fluctuating MS for dates in the international market until 2009, when it increased to 0.242% (Figure 13). However, this was followed by a decline in subsequent years, reaching zero or near zero from 2014 to 2021. In 2017 and 2018, Qatar had a slight increase to 0.036% and 0.056%, respectively. This is related to the unstable export of dates in Qatar, which also varied over the years due to the blockade.

5.2. Revealed Comparative Advantage of Qatar in the International Market

Based on FAOSTAT data, Qatar's RCA in the international date market fluctuated significantly from 2000 to 2021, ranging from 0 to 94.2 (Figure 14). Qatar had a relatively high comparative advantage in date palm in 2008, 2009, 2011, 2017 and 2018, when its RCA was above 1. Qatar had a comparative disadvantage in dates in the other years when its RCA was below 1.

5.3. Trade Balance Index of Qatar in the International Market

The TBI indicator for Qatar is negative during the period 2001-2021, varying between -0.95 and -1 (Table 10). This reflects the fact that the country is a net importer of dates. Bahrain and Kuwait are also considered as net importers of dates. Saudi Arabia and UAE were net exporters during the same period.

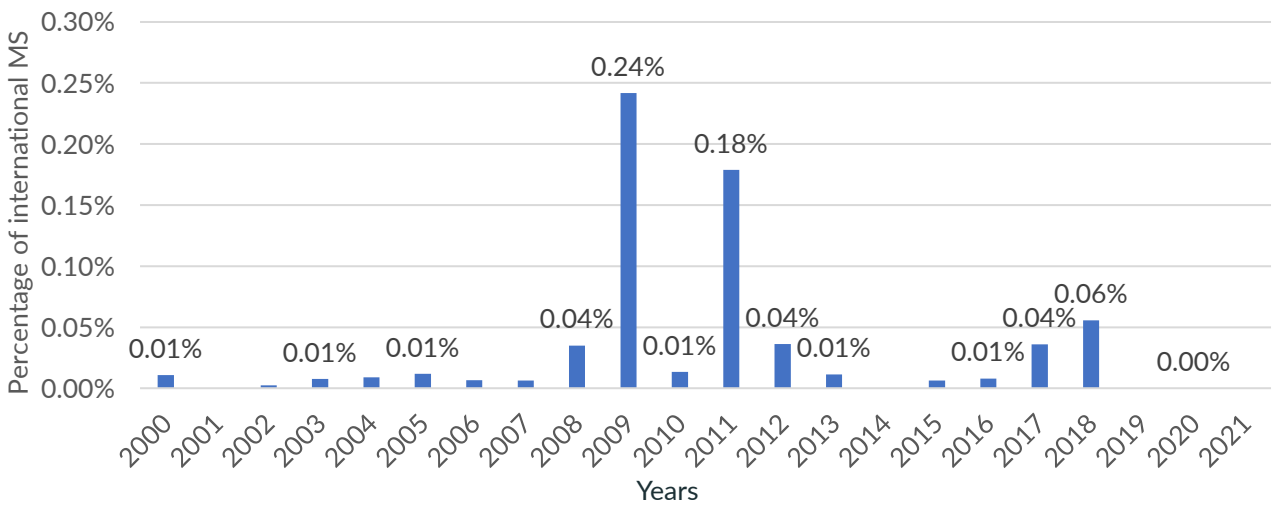

Figure 13. MS of Qatar in the international dates market (2000-2021).

Source: Own elaboration from FAO statistical database, 2021.

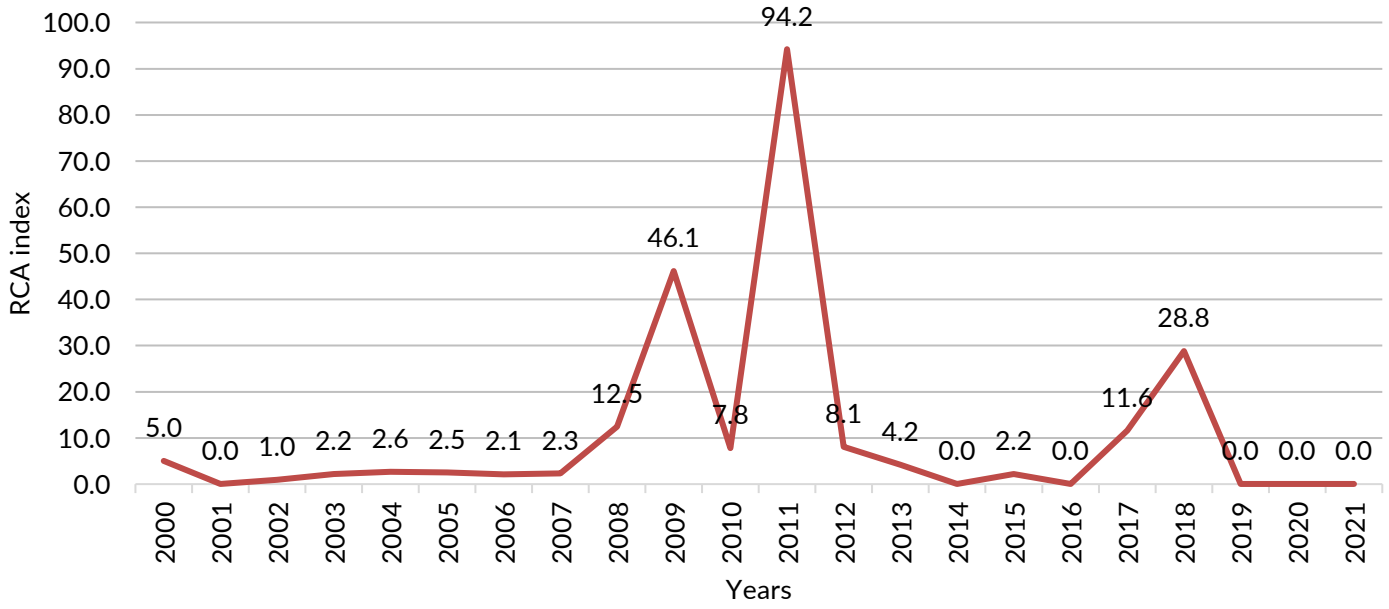

Figure 14. RCA of Qatar in the international dates market during the period 2000-2021.

Source: Own elaboration from FAOSTAT statistical database, 2022.

Table 10. TBI of dates for Qatar and other GCC countries (2001-2021).

	2001	2005	2008	2010	2015	2020	2021
Bahrain	-1.00	-0.95	-0.98	-0.90	-0.99	-0.88	-0.93
Kuwait	-1.00	-0.88	-0.85	-0.86	-0.95	-0.86	-0.75
Oman	0.98	-0.32	-0.60	-0.18	-0.04	0.05	-0.02
Qatar	-1.00	-0.95	-0.90	-0.97	-0.99	-1.00	-1.00
Saudi Arabia	0.99	0.90	0.93	0.95	0.98	0.94	0.92
UAE	0.65	0.31	0.05	0.10	0.20	0.36	0.33

Note: Positive values indicate that the country is a net exporter. Negative values indicate the country is a net importer.

Source: Own elaboration from FAOSTAT and COMATRADE statistics, 2022.

6. SWOT Analysis on Potential Competitiveness of Date Palm Sector in Qatar

The main findings of the SWOT analysis are summarized in Table 11.

6.1. Government Strategy

The government's support and investment in the sector is considered a strength in the development of the date palm value chain in Qatar. The government's strategic framework for the development of the value chain also includes enhanced sustainable and resource-efficient date palm production systems such as water saving techniques, integrated pest management and small-scale mechanization to increase the competitiveness and growth of the sector. So far, the government has implemented various strategies towards this end:

- Dates have been included in the country's food security plan for the year 2030, which includes improving quality, increasing production, and reducing production and marketing losses.
- The government has undertaken several date palm farm projects. One of these – the Al Mashabiya project – included the plantation of 50,000 palm trees, and the establishment of seven smaller farms with 12,329 palm trees collectively.
- High-value commercial cultivar selection aims to improve the date palm sector by enhancing the propagation of higher yielding varieties to improve productivity. In addition, government policy is focusing on orienting date palm producers towards high added value varieties to enhance the competitiveness of the date palm sector in international markets.
- The development of date palm tissue culture protocols will enable the propagation of date palms using tissue culture through indirect somatic embryos. This technology guarantees an increase in quality and quantity.
- Red palm weevil is a highly invasive and damaging pest that poses a significant threat to date palm and other ornamental palm trees in the region. To prevent the introduction and spread of agricultural pests, the government of Qatar has strict agricultural quarantine laws (including no.24/2005, executive regulations no.61/2007, and ministerial decision no.64/2006), which regulate the import of date palm offshoots and ornamental trees. The government's pest control program includes regular inspection of palms and the use of biological, chemical, and cultural control methods.

Table 11. SWOT analysis on the potential competitiveness of the date palm sector in Qatar.

STRENGTHS
Government strategy: ■ Rutab festival. ■ Farmer's support program. ■ Research and development (tissue culture). ■ Investment and promotion of activities in date farming. ■ Pest control program. ■ Local and international date exhibitions. ■ Availability of market information. Private sector: ■ Development of industrial date products transformation companies/processors.
WEAKNESSES
Small date palm production. Inexperience of some farmers. Poor post-harvest practices. Weak marketing strategies. Large loss (waste) ratio.
OPPORTUNITIES
Invest in processing and packing of date products. Increase the demand for dates. Engage the private sector. Introduce more profitable date varieties. Improve the added value of dates.
THREATS
Pests and diseases. Climate conditions. Soil degradation. Water scarcity. Traditional production methods.

- To enhance the production of dates and boost the income of farmers, the Qatari government encourages the implementation of appropriate farming technologies and training in processing techniques. This includes training laborers in the management of pests and diseases. To ensure that farmers benefit from the production of higher quality dates, the government has also allocated 10 million QR (US$2.75 million) to purchase dates from farmers at a fair price. The government has also provided support to farmers through the distribution of polycarbonate drying facilities.
- An ICARDA project, 'Development of Sustainable date palm production systems in the GCC', has explored and tested diverse technologies and systems for water use efficiency, integrated pest management and quality date production. These technologies will have a significant impact on the development of the date palm sector in Qatar.
- The government has increased its investment in scientific research, allocating more than 15 million QR (US$4.1 million) towards the development of research related to date palm cultivation and production. Additionally, the Qatar National Research Fund's Date Palm Research Program focuses on four key areas. Firstly, it advances research in date palm genomics, pest resistance, and tolerance to environmental conditions. Secondly, it has established a partnership platform for research collaboration and development. Thirdly, it disseminates research data through a comprehensive and freely available integrated database for further genome and metabolome studies.

Moreover, the local date festival (Rutab festival) supported and managed by the government is an occasion to local farmers to market their products and facilitate their entry to the local market.

6.2. Private Sector Contribution

Qatar's government has adopted plans and policies which allow local investors to produce and market various varieties of dates. Significant levels of support are provided to farmers, including inputs and services for preparing land to improve the quality of local dates, and exempting local investors from customs duties on imports of raw materials necessary for production that are not available in the local market). There is one company investing in date packing (*al Hassad*) in the country. It was established in 2008 as a wholly owned subsidiary of Qatar Investment Authority. This company was able, despite the blockade on Qatar during 2017, to export its first date shipment to India which was positively received. Hassad Food strives to continuously support local date farmers on a commercial basis through agreements and production facilities between the company and farmers. Currently there is also a factory and other companies such as Al-Rayyan Agricultural Company that processes dates.

6.3. Weaknesses and Threats

Date palm production in Qatar is relatively small. Poor post-harvest practices and the inexperience of some farmers are the main weaknesses of the sector. Most farmers are small-scale farmers and practice traditional methods of date cultivation, and there is a shortage of trained and qualified labor. The availability of market information is also relatively poor for the date palm value chain which results in lower prices for farmers. Qatar also has an undeveloped processing sector, which means that most dates are sold as table dates and are not processed, resulting in low added value.

The main threats are water scarcity and soil degradation. Qatari agriculture is almost entirely irrigated, and, although Qatar uses modern technology and soilless culture techniques, water scarcity still affects the whole agricultural sector. Pests and diseases – including red palm weevil (*Rhynchophorus ferrugineus*) – cause significant damage and affect palm productivity. Low quality palm seedlings also result in low quality dates, and therefore a low return for farmers.

7. Conclusions and Recommendations

To overcome constraints faced by the date palm value chain, and improve marketing at the local level, it is crucial to: 1) provide relevant, complete and timely marketing information to date palm producers; 2) activate the role of marketing cooperatives; and 3) develop coordination committees, associations, and producer cooperatives for public and private producers, manufacturers, and exporters of dates to prevent resources wasting.

To reduce waste from palm tree production and promote sustainability, it is important to explore ways to make use of palm tree waste, such as using it for fuel or compost.

To boost consumption of dates, one strategy could be to include dates in dishes distributed by the Ministry of Health and Education in hospital, schools, etc. Initiating local consumer campaigns to promote local products would enhance consumer trust. Government institutions, private sector organizations, the Chamber of Commerce and other stakeholders should be encouraged to launch targeted marketing campaigns at new potential consumers/customers.

International markets are very demanding in terms of standards and norms, especially for perishable agricultural products such as dates. This is a challenge for Qatari producers and one of the reasons that Qatar has seen unstable participation rates in international markets. Overall, the GCC has increased its share of the international date market to 35%, so Qatar needs to coordinate its trade strategies with the rest of the GCC to take advantage of this opportunity. This should include:

- providing safe and secure products;
- adopting standard specifications and norms in producing countries to reach global markets with distinct and premium varieties;
- conducting studies to understand international markets (volume, size, main competitors, marketing strategies, etc.) and their needs, laws, regulations;
- providing information about international markets to key national actors (producers, manufacturers, processors, dealers, wholesalers, input providers, exporters, etc.);
- supporting and encouraging the participation of producing companies in international trade fairs and establishing strong export policies;
- and conducting advertising campaigns to promote dates and the nutritional benefits of the fruit through international meetings, conferences, festivals, and government offices.

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