STRATEGIC FRAMEWORK FOR THE DEVELOPMENT OF THE DATE PALM VALUE CHAIN IN THE ARAB REGION
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THE ARAB REGION
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Acknowledgements

This Strategic Framework for the Development of the Date Palm Value Chain in the Arab Region is a result of the joint initiative of the Food and Agriculture Organization of the United Nations (FAO) Regional Office for the Near East and North Africa and the Arab Organization for Agricultural Development (AOAD), under the overall guidance of Abdessalam Ould Ahmed, Assistant Director General and Regional Representative, FAO and Ibrahim Adam A. El dukheri, Director General of AOAD. This strategy emerges from a Regional Value Chain Study of Date Palm in the Arab Region jointly conducted by FAO and AOAD under the responsibility of a multidisciplinary team of experts tasked with developing both reports. Many individual and institutional stakeholders in the date value chain in Arab countries generously contributed information and views to these documents through a participatory consultative process. Special recognition goes to the individuals listed below.

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## Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>AOAD</td>
<td>Arab Organization for Agricultural Development</td>
</tr>
<tr>
<td>CEDAW</td>
<td>Convention on the Elimination of All Forms of Discrimination Against Women</td>
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<tr>
<td>CIHEAM</td>
<td>International Centre for Advanced Mediterranean Agronomic Studies</td>
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<td>DPGN</td>
<td>Date Palm Global Network</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<tr>
<td>GCC</td>
<td>Gulf Cooperation Council</td>
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<tr>
<td>HLPE</td>
<td>High Level Panel of Experts on Food Security and Nutrition</td>
</tr>
<tr>
<td>ICARDA</td>
<td>International Center for Agricultural Research in the Dry Areas</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>IDC</td>
<td>International Date Council</td>
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<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<tr>
<td>IPM</td>
<td>Integrated Pest Management</td>
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<tr>
<td>NENA</td>
<td>Near East and North Africa</td>
</tr>
<tr>
<td>NGOs</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>PO</td>
<td>Producer Organisations</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>RPW</td>
<td>Red Palm Weevil</td>
</tr>
<tr>
<td>SDGs</td>
<td>Sustainable Development Goals</td>
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<td>UNIDO</td>
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Executive summary

The date palm is a strategic crop for producing countries in the Arab Region, contributing significantly to their national economies, and constituting the most important income generating crop to the inhabitants of critical parts of the region. Therefore, the improvement of the date palm value chain and the enhancement of the quality of date products is of critical importance to the Arab Region. However, constraints to production, natural resources, pests and disease, post-harvest handling and processing, and marketing and trade limit the competitiveness of the sector in local, regional and international markets. Population, gender and consumption dynamics exert external forces on the date palm value chain. National governments, regional institutions and the private sector have key roles to play in the development of the sector.

In this context, the Food and Agriculture Organization of the United Nations (FAO) and the Arab Organization for Agricultural Development (AOAD) entered a partnership to develop, as a first step, a regional strategic framework for the development of the date palm value chain. The framework will serve as an umbrella for concerted interventions at country and regional levels, and was developed in the context of a wide food system approach, considering elements such as the potential for food security and nutrition, sustainable use of natural resources (soil and water), contribution to ecosystems and biodiversity, potential for income generation and employment, reduction of food loss and waste, and food safety and quality.

The framework presents a comprehensive strategy to revitalise and launch the date palm value chain on the path to be an even greater driver of economic development within the Arab Region. The recommendations outlined in this document were selected through a series of stakeholder consultations and a comprehensive study of the date palm value chain across the entire region. The interventions are designed to address the constraints and embrace the opportunities in the Arab Region to unleash the full potential of the date palm value chain.

Implementation of the strategic framework will require the participation of a broad range of stakeholders in the date palm value chain. Economic actors, including producers, aggregators, processors, exporters and retailers have a critical role in the development of the sector. National governments, regional organisations, NGOs and civil society institutions are crucial actors in the broader enabling environment and development ecosystem.

This document articulates a vision for the date palm sector in the Arab Region, and provides a framework for FAO and AOAD member countries to guide national plans, public investments, and regional cooperation.
1 Introduction

1.1 Rationale for the framework

The improvement of the date palm value chain through increasing the quality, marketability, and diversification of date products is of critical importance to the Arab Region. Concerted regional strategic and integrated efforts are needed to address systemic bottlenecks in the date palm value chain, and to ensure that the countries make strides to expand the contribution of this fruit crop to food security and economic growth. In this context, the Food and Agriculture Organization of the United Nations (FAO) and the Arab Organization for Agricultural Development (AOAD) entered a partnership to develop, as a first step, a regional strategic framework for the development of the date palm value chain. This strategic framework has been informed by detailed consultations with key stakeholders across the Arab Region, and the development of country, sub-regional and regional value chain studies. The framework will serve as an umbrella for concerted interventions at country and regional levels, and was developed in the context of a wide food system approach, considering elements such as the potential for food security and nutrition, sustainability of the use of natural resources (soil and water), contribution to ecosystems and biodiversity, potential for income generation and employment, the importance of reducing food loss and waste, and aspects of food and safety and quality to be considered as an import issue that hinders trade. The framework will lead to many project concept notes which will be developed as a portfolio of opportunities for Governments and Donors to invest in addressing different priority issues affecting the date value chain in the region.

1.2 Overview of FAO and AOAD

Food and Agriculture Organization of the United Nations (FAO)

The Food and Agriculture Organization of the United Nations (FAO) is a specialized agency of the United Nations leading international efforts to defeat hunger and to support development in member countries in the areas of agriculture, fisheries and forestry. FAO’s mandate is to raise levels of nutrition, improve agricultural productivity, better the lives of rural populations and contribute to the growth of the world economy.

The mission of FAO in the Near East and North Africa (NENA) is to achieve sustainable food security for all and to help vulnerable communities cope with and recover from shocks and crises. To do this, FAO helps Member States work toward sustainable increases in agricultural production, minimise depletion and degradation of already scarce natural resources, boost rural development and reduce food loss and waste.

Eliminating food insecurity and malnutrition are persistent challenges in the NENA region. The structural dependence of its countries on food imports makes the region highly vulnerable to shocks, increasing the inability of entire communities to feed themselves.

Recent conflicts and civil instability in many countries of the region have also compounded the situation. As a result, hunger, food insecurity and malnutrition are widespread and require comprehensive and urgent intervention.

FAO helps governments face these challenges by improving the capacity of countries to collect, produce and analyse data for policy formulation. This is done by strengthening their commitment to sound development outcomes, improve their accountability, and by coordinating efforts for joint action.

FAO also provides direct support to improve the livelihoods of millions of small farmers and rural communities, especially in countries undergoing conflict where the Organisation helps farmers and their families recover from crises.
The Arab Organization for Agricultural Development (AOAD) was established under the umbrella of the League of Arab States with the objective to identify and develop linkages between Arab countries, and coordinate regional agricultural and agricultural-related activities amongst them. The organization's goals are twofold, encompassing national and regional objectives. At the national level, AOAD is to assist member countries in developing and enhancing their respective agricultural sectors. At the regional level, AOAD is to facilitate coordination amongst member states in the agricultural sector, with the aim of achieving a fully integrated Arab economy union, and food self-sufficiency.

Since its inception in 1972, AOAD has made tangible improvements to the development of agriculture in the region and within each member state. This was primarily achieved through ambitious, structured and well-developed plans that took into consideration the broad agricultural system. These plans were constantly reviewed, evaluated and updated to ensure that they met, and catered to the regional and international changes which periodically occur.

During the 26th General Assembly, meeting member states confirmed the need to further develop AOAD's programs, activities and methodologies in order to better meet the challenges of the upcoming period. They particularly emphasised the need to assist member countries in their national development plans based on their specific needs and priorities.

1.3 Importance of dates and date palms in the Arab Region

The date palm (Phoenix dactylifera) is one of the oldest cultivated fruit plants in the world. It is believed to have originated in the Near East Region in Mesopotamia (present day Iraq) around 4000 BC, and spread to the Arabian Peninsula, other countries in the NENA region and other parts of the world. Throughout history the date palm has played an important role in the history and heritage of the Arab Region.

The date palm is a strategic crop for producing countries in the Arab Region, contributing significantly to their national economies, and constituting the most important income generating crop to the inhabitants of the oases in the Arabian Peninsula and North Africa countries and the riverain areas in Central and South Iraq, Upper Egypt and Northern Sudan.

Date palms are well adapted to the harsh dryland environment, tolerating high temperatures and salinity, surviving in areas where other plant species cannot. For this reason, they constitute a principal supporting pillar for agriculture development and food security in the Arab Region. The date palm also provides a more amenable habitat for people to live by providing shade from sun and shelter from the desert winds, spurring the development of rural settlements, sustainable agriculture, employment and income generation. Its by-products are useful in the construction of housing, production of household utensils and inputs for animal feed. The deep shade and humid habitat that date palm canopies create provide suitable microclimate and favourable conditions which allow other crops such as citruses, vegetables and forage crops to grow in desert oases. In addition, the date palm provides greening of land and landscaping of large barren areas and contributes appreciably to the protection and betterment of the harsh environment in many localities within the region and lessens soil degradation and desertification, thus protecting the environment.

The Arab Region contains the majority of the global area under date palm production - some 1.35 million ha (FAO 2016) - and contributes over 75 percent of the world production of dates. In recent years, production has increased at an average annual rate of 4 percent, primarily due to growth in area planted. The Arab Region contributes to more than two thirds of the global exports of dates, with the largest end-market importers being India and the Islamic countries.
1.4 Overview of the date value chain

Structure of a typical date value chain in the Arab Region

A typical date palm value chain in the Arab Region is generally composed of four main functions: production, post-harvest handling, marketing and consumption. The main actors/stakeholders of the date value chain are the inputs suppliers (seedlings, machinery and equipment, pesticides, fertilisers, packing materials, etc.); date producers; aggregators, including agents who buy on behalf of wholesalers, exporters, processors or retailers and commission agents who buy on behalf of wholesalers and exporters or sell on behalf of farmers and other sellers. The most important factor for smooth and efficient operation of the value chain is the relationship among these actors and the governance of the value chain, particularly the rules and regulations (formal and informal) that govern the operation of the whole system and the relationships between the actors in the value chain. The diagram below (Figure 1) illustrates the typical value chain of dates in the Arab Region.

**Figure 1** Typical value chain map of date palm in Arab Countries

Source: FAO and AOAD. 2023. Value chain study – Date palm in the Arab region. Cairo, FAO. https://doi.org/10.4060/cb9917en
Sub-regional variations

While the date palm value chain is similar across the Arab Region, there are features that are specific to certain sub-regions and their respective countries. These sub-regions are Gulf Countries (GCC countries plus Iraq), Mashreq, Maghreb, and the Nile Valley countries.

**Gulf sub-region:** Date farming systems in GCC countries are mostly traditional small-scale orchards of date trees based on labour-intensive techniques, with modern plantation in the United Arab Emirates (UAE) and the Kingdom of Saudi Arabia (KSA). Intercropping of date palm with other food crops is commonly practiced. Date production in the GCC sub-region can be considered relatively new in comparison to other sub-regions.

**Mashreq sub-region:** Date farming systems in this sub-region is mostly with some modern plantations. Date production represents an important source of income and nutrition to oasis inhabitants and provides employment for many rural women (Al-Baba, 2009). The areas cultivated by date palm and the average date production per country varies highly across the sub-region. The main cultivars are Khastawi, Barhee, Halawy, Dayri, Hayany and Khadrawy, Majdool, Zahdi and Sayer.

**Maghreb sub-region:** Date farming systems are mostly traditional and are concentrated in oases through mostly small-scale orchards and some modern plantations which were recently established. Both systems practice intercropping. The area cultivated by date palms in Maghreb sub-region countries was 64 700 ha in 2016. Average date production in the countries of the Maghreb sub-region was about 318 000 tonnes in 2016, with high variability: highest in Algeria and lowest Mauritania. Tunisian date palm plantations are characterized by the prevalence of Deglet Nour variety in spite of their large genetic diversity. It occupies approximately 60% of the Tunisian palm plantations and continues to be multiplied (Bouguedoura et al., 2008). In Libya, the main cultivars are Bukerary, Taboni, Lamsy, Blonde, Halaway, Bronzi, and Baudi while the Algerian palm groves currently have 45% of Deglet Nour (Bouguedoura et al., 2008). The Moroccan Date planted stock is characterised by the existence of a host of varieties, with a predominance of so-called “Khalt” varieties (unidentified), which have low commercial value. Commercial varieties (Deglet Nour and Mejdoul) are produced and exported to European markets which sells for a premium.

**Nile valley sub-region:** Date farming systems are mostly traditional with some modern plantations and intercropping systems. The area cultivated by date palm in 2016 was 48 000 ha in Egypt and 37 000 ha in Sudan. In Egypt, date palm is cultivated and grown wherever water is available. The date industry supports over one million people. 'Hayany' is the cultivar most planted, but the best varieties suitable for marketing at the khalal stage are Zaghloul dates, which are the most economically important in Egypt (Kassem, 2012). The date production in Sudan totalled 423 662 tonnes from an area of 36 545 ha in 2016. About 98% of the dates grown in Sudan are either cultivar classed as dry, or semi-dry. Date marketing in this sub-region is mostly domestic with limited export of table dates because of limited processing capacity.

Date production

Date palms are planted under two main systems in the Arab Region: traditional and modern. The traditional date palm farming system is based on family labour and is characterised by the small size of holdings with dense planting of mixed date palm trees of varying ages, including high proportion of aging trees. Date palms are often intercropped with fodder and vegetable crops and occasionally with fruit trees to benefit from the irrigation water and bring in additional income to the household. The system is also based on flood irrigation, low input use and some outmoded husbandry practices. Modern farming, on the other hand, is based on raising high quality and popular date varieties in large holdings which use advanced production practices including modern localised irrigation systems and adequate proven inputs. The well spaced and organized palm trees facilitate human and machine manoeuvring.
and enables efficient and timely conduct of the varied farming operations. The system is based on hiring skilled labour and often highly qualified management in the large modern plantations. The traditional system is the dominant and wide spread, but the commercial plantations are expanding in almost every country in the region.

The major common cultural practices followed include:

- **Irrigation** - Water requirement for date palm production is high. Flooding or basin irrigation is the dominant practice, despite its highly inefficient use of water. The use of modern irrigation systems such as drip, bubblers and subsurface irrigation is expanding, thanks to government support in some countries.

- **Fertilization** - Date palm trees respond well to both organic and chemical fertilisers particularly in sandy soils. Organic fertiliser is often applied in the form of cattle and poultry manure.

- **Pollination** - The operation is carried out during the flowering season in February and March. Most of the farmers in the Arab Region use the traditional method which is based on manually inserting 2 to 3 male strands into the female flower cluster. Some small traditional farms rely on wind pollination, whereas more advanced mechanical pollination is performed on large modern farms.

- **Thinning** - Fruit thinning in date palm is essential to ensure high quality date production and control alternate bearing. The earliest flowers are usually the largest and the most vigorous, thus removal of later flowers retains the optimum number of flowers for high quality and quantity of production.

- **Pruning** - the common practice in the Arab Region involves cutting off lower fronds twice a year at pollination and curvature and the base of the fronds when the tree is mature; removing the spines from all leaves, bunch holders and pollen coats from previous season; and removing offshoots for varietal multiplication and pruning.

- **Pest Control**: depends mainly on the use of chemical pesticides, but Integrated Pest Management (IPM) is expanding across the region.

**Post-harvest handling**

Date post-harvest handling differs depending on the timing of ripening of the different date varieties. Date can be harvested at the Khalal or Biar (yellow or red, with 50 - 85 percent moisture content), Rutab (partially browned, with 30 - 45 percent moisture content) or Tamar stages (amber to dark brown, with 10 - 25 percent moisture content). Post-harvest handling includes sorting, fumigation, washing, drying, grading, packing of the whole, storage, and transportation.

Most of the commercial date varieties produced in the Arab Region are harvested as Rutab, semi-dry dates (Sukkari, Sagai, Majhoul, Deglet Nour) or dry dates (Kentichi, Bouskri, Gundela, Barakawi). The harvesting is done manually by picking individually ripened dates and, in some cases, the whole bunch.

Experience in most date producing countries showed that a well mature Rutab, handled with care, is one, if not the most, appreciated form in which dates are consumed, and which gives the grower the highest rate of return. However, semi-dry dates are perishable and very sensitive to temperature variation. Therefore, they must be handled with care in order to avoid damage.

The traditional date palm plantations in the Arab Region are usually in isolated areas far from the principal date markets. In these areas post-harvest handling is done manually and most of its activities are practiced in a traditional manner such as sun drying of fruit in the open air. Dates should be stored in clean, cool, and dry condition to prolong their shelf life and reduce post-harvest losses. Dates require controlled temperature, moisture and ventilation conditions after harvest and throughout the supply chain to the final consumer in order to preserve favourable qualities, and to minimise pest infestations. Transportation and storage at low temperature plays an important role in preserving fruits quality.
since it maintains colour and minimises loss of texture and flavour. It also helps in controlling insect infestation and sugar spotting. At temperatures below 10°C, mite growth is inhibited, and temperatures above 25°C promotes the formation of syrup and fermentation. The fruit must be transported in the early hours of the morning to avoid the heat; if the distance is great, refrigeration during transport is necessary to maintain optimal quality.

In the Arab Region, most of the date packing houses are traditional or semi-modern, and do not meet international sanitary and phytosanitary standards. Large commercial farms and exporters tend to use modern packing houses. With the introduction of cold storage in date palm cultivation areas, cold storage has been gaining popularity as it improves quality, reduces losses, and allows for dates consumption at any time of the year (Aleid et al., 2014). However, cold storage throughout the supply chain is much more common in modern farming systems, particularly those where production and processing is vertically integrated. There are significant challenges to maintaining the cold chain in traditional farming systems. It is not typical for smallholder farmers and rural aggregators to have temperature-controlled storage and transportation facilities. Higher quality dates for export markets necessitate adequate cold storage, whereas table dates, particularly for domestic, regional and Asian markets do not demand the same conditions. Increased capacity in cold storage will be necessary for countries to expand their exports of dates to high value European and US markets.

Processing

Aside from marketing fresh and semi-dried dates, they are also traditionally processed to prepare a wide range of products such as syrup, paste, sugar, vinegar, and alcohol. Dates are also combined with other natural products such as almonds, nuts and chocolate as coatings or fillings. Date pits are used as animal feed, and date palm waste is used for the production of compost and creation of handicraft products (furniture, baskets) and feed blocks for livestock. Most countries in the Arab Region are investing to varying extents in the creation of processing units in the date-producing areas.

Date consumption

The Arab countries vary widely in their per capita date consumption, as is apparent in Figure 2. Date consumption in the whole of the Islamic world peaks in the Holy month of Ramadan as dates are a traditional food used by Muslims to break their fast. Another peak of consumption is during the annual Pilgrimage Holy Days observed by millions of Muslims from all over the world. However, per capita date consumption is declining in most of the Arab countries, particularly among youth.

Figure 2 Dates annual consumption of Arab and few other countries for the period 2007-2011 (Kg/capita/year)

Source: FAO and AOAD. 2023. Value chain study – Date palm in the Arab region. Cairo, FAO. https://doi.org/10.4060/cb9917en
2 Principal end-market opportunities for date palm

Dates produced in the Arab Region reach three key markets: local regional and international. The types of local and export end-markets that the region can reach directly affects the prices that dates can be sold at, as well as the levels of profitability and performance of the entire date value chain. Each of these markets face specific challenges for producers, traders and processors, but opportunities exist to increase the profitability and capture a greater share of those markets for Arab Region value chain actors.

2.1 Local markets

In most of the Arab date producing countries, date production is sold to local markets, with a small proportion made up of surplus production sold to export markets. Local markets are, by and large, characterised by long marketing chains saturated with a series of unnecessary intermediaries which results in high marketing costs and low returns to farmers. Many of the local date varieties fetch poor prices given their low quality and the poor traditional forms in which they are offered at both wholesale and retail levels. Local markets generally do not reward the producer for quality differentiation, indicating a supply/production-driven value chain where consumer preferences are not priced.

Marketing of dates is largely driven by the private sector, without government intervention. Dates may be sold on the tree in advance through auctions, as in case of Egypt, Palestine and Saudi Arabia, or the whole crop may be sold in advance at a specific agreed price as the case of the “shail” system in the Sudan. In most cases the harvested crop is sold either in local markets near their dwellings or to collectors and assembly agents such as agents or brokers buying on behalf of wholesalers, processors or big city retailers selling on behalf of farmers.

In general, the assembly agent is the principal link to the market, and they handle most of the harvest in the region. The assembly agent is also the main intermediary between producers and other components of the value chain. In some countries, such as Saudi Arabia, Palestine and Iraq, the collector may be replaced by the trader (locally called Dalal) who plays a key role in local marketing.

A minority of farmers sell directly to wholesalers, processors, exporters and retailers. The wholesalers usually sell to retailers, exporters and processors. The processors sell either indirectly through wholesalers or directly to retailers, exporters and some of them export directly. Large-scale modern producers usually sell large quantities directly to wholesalers, retailers, exporters and processors.

2.2 Regional markets

There is an important regional trade of dates among countries in the region. For example, in 2016 UAE imported 213 820 tonnes, Morocco imported 69 324 tonnes and Oman imported 10 557 tonnes (Table1). These countries are date producers, and yet were importers of substantial volumes of dates, primarily sourced from other countries within the region. Demand in these regional markets is driven by two factors. Firstly, it meets domestic demands, filling a gap that local production is not able to satisfy. Morocco is one such example. Secondly, raw dates are demanded by processors for value addition before exporting, and in some cases are packed and re-exported without further processing. Oman and UAE are examples of those types of regional markets.

2.3 International markets

Exports of dates from the Arab Region constitutes the majority of global date trading. The total quantities of dates exported by Arab countries in 2016 was 957 084 tonnes with an average price of 1 456 US$/Tonne (Figure 3).
The quantities of dates imported by the main date trade partners to the Arab countries has fluctuated in recent years (2012-2016), but India clearly ranks first followed by UAE, Morocco and France (see Table 1). The dates that are imported by the Asian importing countries are table dates, which are usually marketed unprocessed, while that for European markets are mostly processed dates.

European and US markets demand higher quality, impose stricter regulations, and are prepared to pay a premium, particularly for organic products.

**Table 1** Annual imports of main date importing countries (tonnes)

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<td>337 208</td>
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<td>9 129</td>
<td>10 612</td>
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<td>10 557</td>
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Source: Authors, based on UN Comtrade, Trade Statistics (2017).

Regarding the volume of dates exports from the Arab countries, UAE ranked first, followed by Tunisia, KSA and Egypt in the last quinquennial (see Table 2). Although UAE dates exports declined with a negative 2 percent annual rate during the period 2012-2016, in comparison with other major countries in the region and even with other world exporting countries such as Iran and Pakistan, it has ranked first and achieved the highest record of dates export. The average yearly export from UAE is approximately 295 000 tonnes (Table 2). The date exports from the KSA, (mostly table dates) has shown increasing trend with annual average growth of 20 percent in the last five years. Tunisian date exports, which are of high quality (for example, the Deglet Nour variety), grew slightly during the same period with a 4 percent annual average growth rate. While smaller in volume than the exports of UAE and KSA, Tunisia is a key export country in the region because of the volumes and the quality of its dates.
Countries that have succeeded in expanding exports have invested in a conducive enabling business environment. Tunisia is a good showcase as it has a solid commercial dates industry, which is the result of a production system which cares about market requirements, and well-established marketing institutions which set standards to meet international demand and special requirements for the target markets. In the case of countries like KSA, the industry is yet to be more organised and the commercialisation of the date value chain is still recent.

There is a need for each producing country to develop a marketing strategy to increase farmers’ income, reduce harvest and post-harvest losses, reduce unnecessary marketing costs and assist in minimising surpluses. The strategy should also include solutions on how to collect produce from small scattered farmers, reduce unnecessary lengthy marketing chains, how and where to develop cold storage, how to reduce the cost of marketing and which cost to be reduced first, how to introduce and establish processing and manufacturing of dates. The national strategy is also needed to determine quantities and qualities required by consumers internally and externally, which and how to establish local variety grades and standards, how to advertise and promote products, and how to respond and enhance consumer demands and quality standards locally and internationally in terms of varieties, grades, and timing.

The trends emerging from the dynamics of the global food industry suggest that the demand for high valued food products such as dates will be strong, and especially for the products of organic farming. Given such a potential, it is imperative to translate date palm production improvements to the market level through increased investment and integration with processing and marketing functions, both at the domestic and international levels. Knowledge and practice should sufficiently be improved on quality control and food safety and on international regulation and standards. Equally important is the adequate promotion and advertising in both national and international markets and branding for exportable varieties and targeted campaigns to high income consuming countries for increasing imports and consumption of dates. Such and other investment for improved technical and marketing competence would raise the quality of processed dates, increase competitiveness of the date industry and improve its overall value chain efficiency.

### Table 2 Volume of dates exports from main exporting countries and average export prices

<table>
<thead>
<tr>
<th>Country</th>
<th>Volum of Exports (tons)</th>
<th>Average Export Price (USD/ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
<td>2016</td>
</tr>
<tr>
<td>UAE</td>
<td>304 091</td>
<td>275 863</td>
</tr>
<tr>
<td>Israel</td>
<td>220 131</td>
<td>223 343</td>
</tr>
<tr>
<td>Pakistan</td>
<td>265 297</td>
<td>246 076</td>
</tr>
<tr>
<td>Iran</td>
<td>138 537</td>
<td>209 461</td>
</tr>
<tr>
<td>KSA</td>
<td>64 299</td>
<td>116 993</td>
</tr>
<tr>
<td>Tunisia</td>
<td>101 119</td>
<td>113 794</td>
</tr>
<tr>
<td>Iraq</td>
<td>39 230</td>
<td>187</td>
</tr>
<tr>
<td>Egypt</td>
<td>11 282</td>
<td>19 478</td>
</tr>
<tr>
<td>USA</td>
<td>2 291</td>
<td>2 719</td>
</tr>
<tr>
<td>Algeria</td>
<td>20 438</td>
<td>31 109</td>
</tr>
<tr>
<td>Jordan</td>
<td>2 704</td>
<td>5 612</td>
</tr>
</tbody>
</table>

Source: Authors, based on UN Comtrade, Trade Statistics (2017).
Date export prices have greatly varied between the main world exporting countries according to the trends in volumes of production and reflecting the types of markets that the country can access according to the quality of their dates. An aspect which stands out in Table 3 is the fact that the average price received by Egypt, Tunisia and KSA are substantially higher than that of other Arab countries like UAE and Iraq, and even higher than other countries out of the Arab Region such as Iran and Pakistan. This seems to underscore the ability of these countries to access higher value date markets, such as the EU one, which premiums higher quality dates. The rest of the countries in the region are exporting to lower value markets in countries like India, Bangladesh and some countries in the NENA region.

Figure 4  Market share of dates exports in the NENA region

Source: FAO and AOAD. 2023. Value chain study – Date palm in the Arab region. Cairo, FAO. https://doi.org/10.4060/cb9917en

As indicated in the Figure 4, major dates exporting countries trade their dates to a number of countries, with India absorbing more that 63 percent of the exports from UAE, Morocco more than 29 percent of exports from Tunisia, Turkey more than 36 percent of exports from KSA, while KSA imported more than 29 percent of exports from Egypt. The UAE is a major importer of dates, accounting for more than 24 percent, 14 percent and 10 percent of dates sourced from Iran, KSA and Egypt, respectively. The EU market, which offers a great opportunity for countries in the region to increase the value of exports, has only been explored by Tunisia. This seems to explain why the average price of exports of dates from Tunisia is higher than most countries in the Arab Region. The fact that India takes almost two thirds of the exports from UAE also seems to correlate with the low average prices that the UAE gets on their exports.

In summary, there are significant marketing opportunities for dates in the local markets, in dates importing countries in the region, and in the world market. These markets, especially the export ones, are constantly expanding and increasingly becoming a pull force for countries in the region to address their internal and regional issues which affect the productivity, quality, costs and access to demanding
3 Principal constraints limiting the development of the date palm value chain

3.1 Production

Land tenure and title to land poses special difficulties with investments of long-term nature as in the case of date palm production. Fragmentation and multi-ownership of date palm holdings with inheritance laws extends beyond land to also include the date palm trees planted on it and their resultant fruits. Complications arise when some inheritors refuse to replace the inherited aging trees or the ones with inferior date variety and low production as these trees bring them some benefits without putting any extra expenses. These attitudes accentuate the situation of replacing aging and unproductive trees, which continues to bedevil the modernisation of the date palm farming systems and results in their negligence and consequently their low productivity and low farmers’ remunerations.

Off-shoots propagation of date palm is the commonly used practice all over the region, particularly with traditional varieties. However, sufficient transplants of high quality varieties are often not available due to the limited nurseries producing certified desirable commercial varieties which are often costly, and the lack of the required skills in transplant detachment and management in the nursery further accentuates this situation. Equally important is the uncontrolled internal movement of off-shoots without passing by quarantines to check for pests and diseases. It has also been reported in some countries that some of the imported transplants do not often meet the appropriate quarantine measures, and these measures are not even in place, in some situations.

Tissue culture for large scale multiplication of high quality date palm is spreading all over the region, though techniques and facilities to ensure that the developed plantlets are really true to type from the genetic viewpoint are still lacking in some countries and inadequate or insufficient in others. This is due to limited qualified personnel and institutional capacities, insufficient laboratories and lack of required equipment and inputs as well as limited use of advanced techniques to verify true to type characteristics of the produced plants.

In several date-producing countries, the inputs for date palm cultivation are expensive and are not available at the appropriate time for application. These inputs include fertilisers, both organic and conventional, effective pesticides and fungicides, and high quality equipment such as irrigation equipment which are not manufactured locally. Water availability and quality, particularly salinity, are major challenges to expand date palm production in several date-producing countries particularly in GCC countries. The high cost of pressured irrigation equipment such as bubbler, drip and sprinkler irrigation systems discourages upgrading from inefficient flood irrigation practices. Limited governmental support for the use of these water efficient systems contributes to the high cost of date production and reduces the profit margins to date farmers and date owners, and adds much to social cost through the inefficient use of the scarce water resources.

Date production in the Arab Region is generally based on traditional practices. The majority of the farmers are aging and illiterate, and the younger generations are not attracted to agriculture as a profession in general and to date palm production in particular. In many sub-regions, particularly in the GCC countries, the farmer depends on hired labour who are mostly foreigners and non-Arabic speaking with limited skill in date palm production. This poses a limitation since extension services are provided in Arabic by predominantly Arabic speaking personnel.
Management inadequacies and poor knowledge of good agricultural practices applied to date palm are reflected in almost all practices and in most of the traditional farming and even some commercial plantations across the region. Inadequate and improper fertilisation practices is a common problem, and so is the misconception that the established date palm tree does not require fertilisation and watering.

Many farmers practicing traditional methods lack knowledge on the importance of timely pruning and thinning of date palms, and its impact on both quantity and quality of fruits, pest and disease control and easing the work of pollination, pulling down bunches, and bagging. There is limited use of timely bagging to suit market conditions, promote homogeneity and quality of produce as well as protecting the fruit from dust and sunburn and decreasing the damage from insects and birds.

Problems with pollination are numerous and spread all over the Arab Region. They relate primarily to the inadequacy of basic knowledge about the dioecious and bisexual nature of date palm, which affects the required practical implementation tasks that directly impact quantity and quality of produced fruits. The problems often start with the inadequate propagation of male trees and their poor husbandry to generate adequate pollens. The process is also mostly carried out by unskilled labour, and many of the old plantations are rarely pollinated because of high labour cost and low production, rendering date farming unprofitable.

The harvesting process is also inadequately performed on most traditional farms due to shortage of skilled labour and often causes delays which impact the physical characteristics and fruit quality as well as cleanliness of the crop and lead to increased field losses. Labour also remains the greatest cost in date palm farming production in many countries of the region.

Mechanisation of the farming operations and especially those related to the head/crown of date palm tree, such as pollination, pruning and harvesting, which proved successful in many localities, and could provide additional benefits including reduced drudgery of farm work, improved timeliness in farming operations and increased efficiency of input use are yet to be applied in date palm plantations in the region.

### 3.2 Natural resources

FAO projections to 2050 suggest growing scarcity of natural resources for agriculture. Intensified competition for these resources could lead to their overexploitation and unsustainable use, degrading the environment and creating a destructive loop whereby resource degradation leads to ever increasing competition for the remaining available resources, triggering further degradation. The traditional system of date production in the Arab Region is experiencing such a degradation in natural resources, especially for water and land, which is further exacerbated by the intense pressure resulting from climate change.

The Arab Region is the most water-scarce region of the world. While it hosts between 5 and 6 percent of the world’s population, it has access to barely 1.4 percent of the world’s renewable fresh water. Date palm water requirements are high, estimated at more than 15 000 cubic meters per hectare in most of the date palm growing localities in the region.

Flooding or basin irrigation remains the most common irrigation system for date palm production in the Arab Region. This, in addition to the wastage of high amounts of irrigation water at the field level, also adds to the incidence of date palm roots rotting and susceptibility to infestation. The vulnerability of date palm production in the region is also aggravated by the farmer’s inadequate knowledge of timing and crop water requirement; and furthermore, common irrigation practices ignore regular watering of date palms especially after tree establishment. The tolerance of date palms to salinity and water stress has also erroneously facilitated its expanded cultivation under harsh conditions in marginal areas with resultant poor yield, quality, and low economic returns.
Increasing land degradation and productivity loss in the predominant dryland areas of the Arab Region is a cause of great concern. The soils of most of the countries in the Arab Region are fragile and subject to erosion by wind and water, as well as degradation through salinization. Date palms with their extensive root system are useful for sand dune stabilisation and reducing desertification. However, the recursive and prolonged droughts in NENA seriously threaten expanding date palm plantations in most parts of the region, and especially in the Arabian Peninsula.

The Arab Region is known for being one of the hottest places on earth and is highly vulnerable to climate change impacts. Temperatures from 1900-96 have increased by 0.7 °C for the whole region, and the Intergovernmental Panel on Climate Change (IPCC) models project that average temperatures in the region will further increase by 1-2 °C by 2030-2050. Reduced precipitation and increased occurrence of extreme weather events like drought and cyclones will create a fertile environment for the spread of pests and epidemics and the emergence of new diseases and insect pests. These changes are expected to undermine the ability of the date palm sector and the oases ecosystem, in particular, to achieve sustainable development.

Loss of biodiversity is a fundamental concern in drylands that are subject to degradation, particularly when some proportion of indigenous plants are unique to such localities. Biodiversity losses and changes in fauna and flora jeopardise adaptation and resilience of crop and livestock systems and ultimately threaten the food supply. Date palm biodiversity losses in the region had been driven by many direct factors comprising climate change, civil strife and wars, over-exploitation of the vegetative cover, biotic agents and invasive alien species as well as by indirect drivers including socio-economic changes, increasing population and urbanisation and encroachment of residential buildings into agricultural holdings as well as changing farming practices. Huge biodiversity loss has recently been reported in Basra region of Iraq as a result of wars and have led to erosion of some of the old landraces of date palm.

The predominant water shortage in the region, especially in oases, and the limited avenues for economically augmenting water supply and the increasing degradation of water quality limit the possibilities for horizontal expansion of date production and call for innovative systems for date vertical production. This will include rationalisation, water demand management and enhanced efficiency of water use and investment in improved water provision and efficient application systems that add value, not only to the production of dates, but also to the whole farm system. For example, drip irrigation along with formation of basins around trees for watering improve productivity and save water for more rational use on competing crops. Therefore, acquiring essential knowledge of watering date palm trees assumes greater importance under the present circumstances of escalating demand for water by increasing population and animals while supply of water is limited, declining or becoming costlier following rising energy prices for water provision; both diesel and electricity.

Additional measures to enhance water use efficiency should also include improved governance and institutional and human resource capacities and land tenure arrangements. Equally important is the need for expansion of water harvesting structures for increasing the amount of runoff harvested and enriching aquifers as well as for increasing the efficiency with which the runoff harvested is used for direct irrigation on date palm.

The protection of genetic diversity is particularly important and the conduct of biodiversity surveys and inventories and the use of genetic resource facilities like gene banks, botanic gardens, and nurseries which are all essential elements of the dryland resource conservation efforts, as well as for agricultural production. It is also important to expand the basket of the currently limited commercial varieties with desirable traits that appeal to consumers in both the Arab Region and outside the region.
3.3 Pests and diseases

Date palm pests and diseases are major challenges that significantly affect date palm production and quality in the Arab Region, causing losses of about 28 percent of the production. However, most national pest and disease management strategies are based on interventions after occurrence of crop disorders. Effective integrated pest management, conservation of indigenous natural enemies or modification of production ecosystems are rarely considered. Current practice by most growers also reflect the lack of knowledge in the appropriate use of pesticides, which often leads to levels that exceed the permissible Codex maximum residue limits (MRL) and deleteriously impact marketability of dates, especially in high quality and organic farming markets. Furthermore, inappropriate pesticides control interventions often lead to disease resistance that results in more outbreaks of pests and diseases and consequently larger losses. In addition, it causes serious environmental problems such as contamination of the underground water, land degradation.

The date palm menaces are numerous, including insects, diseases, nematodes, worms, termites, rodents, and birds, which attack different parts of the tree and fruit, impacting its life and productivity. Outbreaks of transboundary pests such as Red Palm Weevil, have particularly broad economic, social and environmental impacts. The movement of planting materials, trade and travellers provides vehicles for the long-distance transmission and spread of this pest. Insufficient regional cooperation and inadequate application of rules and regulations governing movement of plants between countries exacerbates the problem.

Bayoud disease is a widespread problem in the Maghreb, and causes huge losses to the date crop. The Dubas date bug (Ommatissus binotatus) is also an important economic pest in these localities, mainly in Oman. The Green pit scale (Palmapsis phoenicis) is also a cause of huge damage resulting in significant reduction in yield particularly in the Nile Valley and may even cause death of transplants and adult trees. Other important pests include date moth, which causes post-harvest losses.

The prevention of transboundary plant pests and diseases through strict enforcement of quarantine and transportation rules has proved to be the most effective control strategy. Regular surveillance, integrated approaches, international collaboration and adequate preparedness are essential in this regard and for preparing a timely response to protect crops.

3.4 Post-harvest handling and processing

The majority of traditional producers across the Arab Region practice outdated harvest, hygiene and other measures that result in reduced market prices. Basic knowledge on timely harvesting, collection, fumigating and grading is often lacking. The result is high post-harvest losses. Modern post-harvest infrastructure for sorting and grading and for cold storage and transport of date fruits at reasonable prices are limited in most countries and date processing is practiced with primitive tools. Consumer preferences have changed over time to favour soft and semi-dry dates, which require better storage and transport, and different types of processing, which is not sufficiently available to take advantage of market demand.

The limited demand for processed date products in the Region has discouraged expansion of modern processing facilities, and those available in some countries suffer either from low or underutilised capacity. The exceptions are facilities that specifically serve export markets in countries such as Tunisia, Algeria, Jordan and Palestine; and facilities within integrated systems on large commercial farms in the GCC countries.

Globally around one third of all food produced is lost (accidentally) or wasted (intentionally) along the food chain, from production to consumption. Food losses and waste often translate into economic losses for farmers and other stakeholders within the value chain, and higher prices for consumers. They
also have negative environmental impacts through losses in water, soil, biodiversity and other natural resources and inputs that were used to produce foods and move them through the supply chain.

Losses and waste in the date value chain are equally high, averaging 14 percent at production and more than 10 percent for processing, and could reach over as high as 50 percent as reported in some situations. The losses and waste in dates occur through all micro, meso and macro-levels and are caused by different factors at these levels. The micro-level causes result mainly from actions upstream (e.g. poor harvest timing, poor harvest practices, careless handling of produce, lack of appropriate storage space, lack of transportation facilities, etc.). In some situations, crops can remain unharvested due to high labour costs and depressed prices. The meso-level causes are mainly related to poor coordination of market actors, inadequate cold storage facilities, failure to meet product standards, and pesticide-contaminated processed products. At the macro-level wastes and losses arise from the overall socio-economic environment, such as lack of infrastructure, inadequate legislative frameworks and price incentives and subsidies that promote excess production (HLPE, 2014).

Small date palm producers could benefit from modern post-harvest processing facilities if they were able to join vertically within these coordinated value chains through fair contracts with processors and traders. Boudjebel enterprise in Tunisia provides a good example for such a chain, and the associated services that could be provided to reduce losses and guarantee delivery of high quality product.

The date fruit can be processed into numerous value-added products: date paste, date syrup, date dip, date honey, date jam, date vinegar and date pectin. These products can be used as thickening agents; substitutes for sugar in the confectionary industry; and as flavourings for a range of products, including jams, beverages and bakery products. However, date processing throughout the Arab Region, with the exception of Tunisia, Morocco and the Gulf State Countries, is markedly low. The vast majority of dates are sold with minimal processing, capturing small profit margins for producers and traders in the region.

3.5 Population dynamics and consumption patterns

According to emerging trends, the total population of the Arab Region has increased more than fivefold since the 1950s, from just over 72 million in 1950 to nearly 400 million in 2015. Egypt, Iraq and Sudan will continue to be prominent population centres across the region and are expected to house nearly half the region’s total population of about one billion by 2100. The combination of these population trends and the rapid political, economic and environmental transformations taking place in the Arab Region will have important ramifications on population structure, out-migration and urbanisation and the associated changes in the labour market and in food trade and consumption patterns.

A growing unwillingness to work in agriculture is predominant among youth and males leading to aging and feminisation of farming in many rural settings. Labour shortage in rural areas and especially for date palm farming and its increasing cost is becoming a pressing issue. On the other hand, diffusion of innovations and new improved agricultural practices on date farming can easily bypass older farmers, as many have neither the financial resources to buy additional inputs, nor the skills or energy to invest in adopting these new practices. Women are particularly disadvantaged because gender divisions in agricultural production limit their opportunities to obtain finance and training or participate in market exchanges.

Changes in population dynamics are also expected to influence patterns in date trade over the coming decades, as the highest population growth rates are projected for the Arab Region, Sub-Saharan Africa and South East Asia, which are in effect the traditional markets for dates. This shall further be facilitated by effective advertising and strong promotion campaigns and by the accelerating globalisation, characterised by rapid decline in the costs of cross-border trade, driven by declines in the costs of transporting bulky and perishable products long distances, the information and communication technology (ICT) revolution and major reductions in governmental distortions to agricultural trade.
3.6 Gender

Women's status in the Arab Region varies from country to country and even within countries, and depends to a large extent on cultural and socioeconomic conditions. However, there is a general imbalance between men and women with regard to ownership of productive resources, particularly land, and the associated ability to access financial services and opportunities and with respect to access to information and decision making, albeit to varying degrees. The Arab Region also has one of the highest rates of female illiteracy in the world, with rates as high as 50 percent, compared to one third among males. Most governments have ratified the CEDAW (Convention on the Elimination of All Forms of Discrimination Against Women), committed themselves to the Sustainable Development Goals (SDG) of encouraging the full and equal participation of women and men in the formal labour market, and undertook undeniable efforts with respect to women's empowerment and improvement of their living conditions, especially in rural areas.

Statistics on women involvement in the date palm industry are lacking in almost all Arab Countries despite their irrefutable role throughout the date palm value chain, and chiefly in harvesting, processing and in handicraft making utilising date palm by-products. The collection of the harvested dates and their sorting in the field is a predominantly woman-led activity in almost all traditional date palm farming, especially in the oases. They also provide the main labour force in the privately owned modern date processing structures for both local and stringent export markets. Boudjebel SA VACPA (the world leading supplier of Deglet Nour dates) in Tunisia is a champion in this regard, employing 1 200 women and allotting a respectable share of the jobs for women with special needs as well as providing the means to facilitate attending to their ascribed jobs. Handicraft production using date palm by-products like leaves and branches is also largely a female activity. The private sector and NGOs in Northern Sudan are also actively supporting these endeavours by providing training to improve women skills and assisting marketing their products. However, much remains to be done in terms of gender mainstreaming in the date palm industry and in terms of acknowledging the importance of investing in women.

It is important to build up on the successful experiences such as the positive effects that the inclusion of women in micro-finance and biological agricultural has proven in many parts of the world. A need to push for more services and infrastructure that can allow women to have better access to resources and knowledge is also crucial to enable women to reach their full potential.

3.7 Enabling environment

The performance of the date palm sector and its total value chain efficiency is influenced by a number of factors that go beyond direct production related activities, and include attributes such as the formal and informal rules and regulations and social values, investment, economic policies, finance, institutional support, food quality and safety control systems, human resource capacities in the various phases of the date palm value chain.

There is a striking paucity of baseline data and accurate and sufficient statistical information for all aspects of date palm development in many countries of the region. The information gap also exists with respect to the various stakeholders' knowledge of the improved technologies that are already available in all phases of the date palm value chain.

Historically, the date sector in almost all countries has received limited policy attention. Most countries do not have comprehensive and integrated strategies and specific plans for the sustainable development of the date palm sector. The required policies and regulations for well-organised development of the sector including the private sector are also insufficient. There are few protocols or regulations governing production parameters such as palm population and the quality of dates. There is a general lack of investment policy with regard to date palm, and both the agricultural investment orientation ratio and capital intensity ratio in agriculture has, for the past two decades, been rather low and declining in the MENA region. government budget assistance for date palm sector services are generally low.
Principal constraints limiting the development of the date palm value chain

Private sector investment, such as microfinance, is also extremely limited for the types of medium-term investments necessary for date production. Investment in research and development (R&D) and the promotion of effective agricultural extension programmes has been proven to pay dividends in technology generation/adoption and enhancing knowledge and capacity of farmers and adoption of sustainable farming systems and practices. However, limited physical and human resource capacity and underfunding have severely thwarted these efforts, and the agricultural research intensity remains low and declining in most of the MENA countries. It is evident that apart from in a few countries in the GCC, North Africa and Egypt where date palm constitutes a strategic export crop, there exist limited specialised research and extension institutes for date palm. The existing research facilities in many of the other date producing countries suffer from inadequacy, insufficiency and fragmentation of research in all aspects related to date cultivation.

The capacity of the extension system to contribute to sustainable development of date palm in many countries of the region is constrained by the absence of a clear vision and national strategy for agricultural extension, weak functional linkages that link the extension system with research and education systems, marketing and other relevant actors in agricultural innovation; shortage of trained staff, equipment and extension aids in regional and field departments and offices, and absence of farmers in extension planning and priority setting.

Date producer organisations (PO) and trade associations are absent in most of the date producing countries, thus hindering coordination and cooperation among stakeholders in the value chain and linkages with researchers and extension agents.

In all date-producing countries, the human resource capacity in the various phases of the date palm value chain from production, to post-harvest handling, distribution and marketing are strikingly limited. There are few date palm specialists in the Arab Region. Universities in the region in general do not have specialised high degree graduate studies in the various aspects of date palm value chain. Institutional support is also limited except in few countries such as the KSA, Tunisia and UAE.

Date palm production relies heavily on seasonal unskilled labour particularly in the predominant traditional date palm farming system. Many farms, particularly in GCC countries, rely on foreign labour which is migratory and transient in nature, and often lacks the local knowledge of agricultural practices. The number of nationals involved in date palm production is very limited in all the GCC countries including Sultanate of Oman where Omani are more involved in agriculture and date palm production compared to other GCC countries. Generally, young people in most of the date-producing countries are not interested in agriculture and date palm farming as compared to the older generation.

Increased support is required to strengthen data collection and capacity building in the Arab Region to develop national and global baselines, in compliance with world leaders’ commitment to addressing this gap and to better inform the measurement of progress on the various SDGs.

Encouraging the establishment of producer organisations and trade associations will have a significant impact on knowledge transfer, the diffusion of good agricultural practices, improved bargain power, and increased coordination of value chain actors.

It is essential to make agriculture and date palm professions intellectually challenging and economically rewarding in order to attract the young generations to these professions. This would be very possible through modernisation of both agriculture and date palm production.
3.8 Regional cooperation

The challenges, constraints and problems along the date value chain among Arab countries have many similarities. The interventions to address and resolve these challenges and problems are often complex and interrelated and are difficult for a single country or institution to solve on its own, as clearly demonstrated by the challenges and problems of transboundary pests and diseases. Effective and timely implementation of solutions to such problems require coordination, cooperation and exchange of expertise within a broad framework for collaboration among countries in the region and partnerships and engagement of all in sharing knowledge, experiences and good practices, policies, research, technology and know-how. Moreover, the physical proximity of many Arab countries to each other necessitates cooperation among these countries to benefit collectively from transboundary resources. An added benefit of cooperation would be the promotion of intra-regional trade and expansion of date exports collectively to the world market through group promotion, campaigns, brand names, etc.

Hitherto the cooperation and coordination among Arab countries on date production and marketing is weak. Most of the expertise needed for the sustainable development of the date palm sector is available and spread among the countries of the Arab Region, but its effective utilisation is impacted by the lack of exchange of expertise and knowledge among these countries.

Some international organisations, chief among which are FAO and ICARDA, and regional organisations such as AOAD have made serious efforts to promote coordination and cooperation among countries in date palm development. However, in spite of their serious and tremendous efforts, the impact is far below expectations. FAO, during the last 50 years, made a number of serious efforts to promote regional cooperation among date producing countries in NENA. These efforts included the FAO regional project for dates in the Near East (1978-1987), date palm global network (DPGN) 2005-2012, and contribution to the establishment of the International Date Council (IDC) in Riyadh, Saudi Arabia in December 2013. Unfortunately the IDC has been inactive since its first few months of establishment. FAO and CIHEAM are currently coordinating a regional effort to target the Red Palm Weevil in the NENA Region. In 2004, ICARDA established a regional project for sustainable development of date palm production systems in the GCC countries (2004-2017) and UNIDO established the rst date palm cluster of producers in Egypt. AOAD has repeatedly called for cooperation among Arab countries for general agricultural development, food security and intra-regional trade; and currently, together with FAO, is promoting partnership for advancing solidarity-driven actions to enhance the sustainable achievement of these goals in line with the 2030 Agenda for Sustainable Development. The promotion of the date palm value chain is a priority of this AOAD/FAO partnership engagement.

4 Main objectives and beneficiaries of the Framework

4.1 Strategic vision, mission and pillars

The overarching vision of the Strategic Framework is an innovative, resource efficient and competitive date palm value chain, which contributes to sustainable socio-economic development in date-producing countries in the Arab Region.

The mission of the Framework is to develop a demand-orientated, sustainable, resource efficient and highly productive date palm value chain in all date-producing countries in the Arab Region capable of contributing to efficient food systems and to socio-economic, agricultural and rural development. This will be accomplished through well-designed, impact-oriented interventions, the creation of a conducive business environment and the promotion of cooperation and partnership among and between the private sector and public institutions of all date-producing countries in the region.
The strategic vision will be achieved through a set of stakeholder-driven, coordinated interventions structured around the following four strategic pillars or development objectives:

- Strategic Development Objective 1: Enhanced sustainable and resource efficient date palm production systems
- Strategic Development Objective 2: Improved post-harvest handling, marketing and competitiveness of the date value chain
- Strategic Development Objective 3: Strengthened institutional and human resource capacities
- Strategic Development Objective 4: Reinforced regional cooperation and partnerships

4.2 Target groups

The Strategic Framework is a rich action-orientated document that can direct the actions, decision-making and investments of all actors in the date palm value chain in the Arab Region, including farmers, agribusiness firms, transporters, storage companies, market authorities, processors, food services institutions, and households. However, target groups may differ from country to country in the Arab Region according to their value chain structure and market actors. Date producers and agribusiness firms engaged in processing and marketing will be the most important actors in this strategic framework across all countries.

The Strategic Framework will guide governments to direct policy, establish and enforce rules and regulations, and execute national action and regional collaboration for the advancement of the date palm sector. Coordination is a key function of the public sector, bringing together the actors listed above with academia and research institutions, civil society, financial institutions and all related ministries, including agriculture, health, industry, commerce and education.

5 Strategic actions for increasing competitiveness and growth

The strategic objectives articulated in the previous section will be achieved through the development of policies, implementation of technical assistance projects and other targeted investments. The following strategic actions were developed through a series of stakeholder consultations and informed by the implementation of a comprehensive value chain study. They are designed to address the constraints and embrace the opportunities outlined in this Strategic Framework in order to unleash the full potential for the sustainable development of the date palm value chain.

5.1 Strategic Development Objective 1: Enhanced sustainable and resource-efficient date palm production systems

Date palm farming systems

i. Develop national programmes to assist smallholder date palm farmers to augment their low quality and aging date palms with high quality and high yielding cultivars where appropriate, and thin over crowded orchards;

ii. Amend land tenure laws that restrict the development of commercially viable date palm production, such as inheritance laws that fragment established orchards among multiple heirs. Incentivise land consolidation for commercial date palm cultivation;

iii. Establish national policies that encourage group farming models such as producer associations and cooperatives that allow small holder farmers to benefit from increased bargaining power and economies of scale.
Production inputs and propagation services

i. Create incentives for private sector investment in the manufacture of date palm production inputs such as packing material, pesticides and fertilisers, particularly those that make use of agricultural by-products for organic fertilisers;

ii. Invest in public and private research to expand the development and adoption of high quality varieties that meet market demand and specifications;

iii. Facilitate the establishment of date palm nurseries, tissue culture laboratories and pollen collection centres through public and private investments. Establish national certifications and ensure consistent enforcement of rules and regulations. Increase the dissemination of planting material through public and private sector distribution channels.

Pests and diseases

i. Intensify national programmes for early detection, warning, prevention and control of pests and diseases, including the active enforcement of quarantine measures and import controls;

ii. Develop national and regional plans to address red palm weevil (RPW) infestation. Improve access to insecticides, including dusts, liquid sprays, trunk injections and soil applications. Disseminate good sanitation practices through national extension systems to prevent Red Palm Weevil spreading from infested palms. Enhance research on biological controls such as parasites, and bacterial, fungal and nematode pathogens.

Technology development and transfer

i. Increase national investment in date research programmes, and develop mechanisms to disseminate research into public and private extension systems;

ii. Encourage efforts to mechanise production practices such as pollination, pruning, thinning, and harvesting by creating incentives for the private sector to develop and market appropriate equipment for smallholder production systems. Particularly target youth to develop enterprises as providers of mechanisation services

Water and irrigation

i. Promote water rationalisation and efficient irrigation systems through national extension, and provide opportunities for private sector suppliers of modern irrigation to demonstrate their systems to date palm farmers;

ii. Implement policies to curb inefficient water use, including water pricing and subsidies for use of modern irrigation systems. Phase out the use of public systems that provide irrigation from overused or unsustainable water sources.

Climate change

i. Enhance regional and international cooperation to develop strategies to mitigate and adapt to the negative impacts of climate change on date palm production and oases agriculture through selecting drought and salinity tolerant date palm varieties and adopting cultural practices to help farmers cope with climate change impacts;
ii. Develop public incentives for the use of energy for date palm production from renewable sources such as including solar, wind and biomass;

iii. Invest in public and private research to screen date palm germplasm for tolerance and adaptation to high temperatures and drought, and develop breeding programs to produce germplasm with optimal quality and productivity characteristics.

**Genetic biodiversity**

i. Establish a network of national gene banks to conserve and maintain date palm genetic resource. Establish rules and regulations for the exchange of germplasms;

ii. Survey the morphological and genetic diversity in the various date palm trees at the national, sub-regional and regional levels. Establish a standardised system for date palm trait characterisation and evaluation. Develop a passport database with characteristics of phenotypic and genotypic traits;

iii. Establish regionally recognised criteria for introducing potential commercial cultivars in local and foreign markets.

5.2 Strategic Development Objective 2: Improved post-harvest handling, marketing and competitiveness of the date value chain

**Post-harvest handling and processing**

i. Develop public-private partnerships to make strategic investments to alleviate bottlenecks in the post-production value chain, including sorting, packaging and processing facilities;

ii. Develop and promote policies to reduce food loss and waste at the farm level and along the value chain;

iii. Incentivise private investment in research to develop date palm by-products and the utilisation

**Quality**

i. Ensure the enforcement of sanitation standards from production to final consumer, ensuring that the standards are compliant with the requirements of key export markets. Ensure national legislation recognises the increasingly demanding requirement by major export markets for traceability, and incentivise the adoption of technological solutions by value chain actors to improve the identification, tracking and monitoring of dates from production to end markets;

ii. Harmonise national policies with international regulations and standards necessary for export such as Codex Alimentarius, Global and European Good Agricultural Practices (GAP), Hazard Analysis and Critical Control Points (HACCP).

**Marketing**

i. Develop date production as a demand-driven industry. Promote the establishment or strengthening of national date marketing boards to develop new markets for dates, to introduce new varieties to the market, and to improve the flow of market information to producers. Encourage the dissemination of quality standards for national and export markets;
ii. Invest public resources in the establishment of rural collection centres that enable smallholder farmers to access to markets;

iii. Promote improved integration and coordination between date palm value chain actors, strengthening horizontal and vertical linkages through convening symposia, trade fairs and specialised events.

Infrastructure

i. Develop national investment plans for the development of marketing infrastructure such as marketplaces, roads, transport vehicles, cold storage, packing and, processing;

ii. Encourage private investment to expand post-harvest infrastructure and cold storage facilities operated by solar energy, and support the establishment of cold storage facilities at airports.

Trade

i. Encourage countries to conduct studies on current and potential export markets and to synthesise from these studies guidelines identifying import markets and their requirements, specifying demanded varieties by importers and steps to be taken by exporters to maximise returns from the export of dates;

ii. Encourage national marketing boards and private companies to establish brand names for country-specific varieties.

Date consumption

i. Conduct national public campaigns to increase local date consumption, emphasising its nutritional value. Include dates in public feeding programmes such as school meals, army rations, and the menus of national airlines. Improve the display of nutritional content on date packaging and labelling;

ii. Design and implement promotion and advertising campaigns for increasing date consumption at national, regional and international levels similar to those done by the International Olive Council in campaigns for increased consumption of olive oil.

5.3 Strategic Development Objective 3: Strengthened institutional and human resource capacities

Extension services

i. Increase the capacity of national extension systems to provide high quality training and advice to date palm producers, informed by the latest research on production technologies and market demand. Ensure extension content and targeting is informed by private sector investments in technological innovations;

ii. Pilot alternative methods of farmer training, particularly for smallholder farmers, such as Farmer Field Schools, and technology enabled training such as PLANTIX.
**Human capacities**

i. Incentivise the development of graduate research programs to address the challenges facing the date palm value chain through student scholarships at public universities, and fellowships within Ministries of Agriculture. Promote the introduction of date palm curricula in undergraduate agricultural programmes;

ii. Invest in upgrading the capacities of government extension staff to ensure they are equipped with current best practice in date palm production.

**5.4 Strategic Development Objective 4: Reinforced regional cooperation and partnerships**

i. Establish a Regional Date Palm Centre under the auspices of AOAD and FAO to promote and conduct research, strengthen communication and exchange of experience and information, and develop intra-regional trade in date products and date inputs among member countries;

ii. Promote cooperation with regional and international organisations to support and enhance institutional and human resource capacity building;

iii. Establish a regional programme for developing and disseminating integrated pest management (IPM) best practice that informs national strategies for extension systems, public awareness campaigns and investments in control methods;

iv. Establish collaboration among countries to collectively fight the transnational spread of RPW, date moth, bayoud disease and green scale infestation, and lessen transboundary movement of these pests and diseases.

**5.5 Cross-cutting strategic recommendations**

i. Develop public mechanisms to encourage private investment in the date palm value chain, including credit guarantee facilities, specialised investment funds for both direct equity investments and wholesale lending to financial institutions to on-lend to smallholder farmers, and infrastructure upgrades to attract foreign investment. Ensure the regulatory environment is conducive to the growth of agricultural insurance programmes;

ii. Encourage women’s involvement and enhance their capacity through training in harvesting, processing and handicraft, and accessibility to finance, marketing and other needed inputs;

iii. Improve the collection and dissemination of accurate statistics on dates including production, location, varieties, marketing, prices, export quantity and destination;

iv. Create and promote an “International Year of the Date Palm” with the purpose of enhancing consumption and strengthening the sustainable development of the date palm value chain.

**6 Implementation of the strategic framework**

**6.1 Key actors and stakeholders**

This Strategic Framework needs the participation and cooperation of broad segments and actors in the date palm value chain in addition to government agencies, NGOs and civil society institutions, as outlined under the different components of the Strategic Framework. Starting at the production stage, farmers, inputs suppliers, extension services and research have crucial roles to play to improve...
production and productivity. At the processing stage, aggregators, packers and value-added processors are key. At the marketing stage wholesalers, exporters and retailers are primary stakeholders. Finally, at the consumption stage the final consumer is critical. Throughout the chain, national governments and regional bodies play a crucial role in coordination, rule-setting and promotion.

6.2 Resources

This Strategic Framework requires commitments from all stakeholders to provide necessary resources with expertise in areas related to the date palm value chain. These include primarily human and financial resources as well as access to capital. Human resources are critical for a successful implementation. This requires resources to finance related capacity building activities at different levels as spelled out in the relevant components of the strategy. Specific provisions in government budgets should explicitly target activities related to the development of the date palm value chain.

6.3 Monitoring and evaluation

The monitoring process should apply basic evaluation indicators for planned activities, including efficiency, effectiveness and impacts of activities with respect to their objectives. It should start with establishing the quantitative baseline for key date value chain metrics in each country. Formative and summative evaluation processes should be carried out during the implementation. The final agreed outcomes need to be evaluated during predetermined stages, and based on annual targets.
Reference

FAO and AOAD. 2023. Value chain study – Date palm in the Arab region. Cairo, FAO.
https://doi.org/10.4060/cb9917en