A COMPARATIVE STUDY FOR COMPETITIVENESS OF DATES FROM THE GCC COUNTRIES IN THE WORLD MARKET

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Abstract: In the GCC countries, date-palm sector is strategically important for the economic, social and environmental development. Therefore, markets globalization has had a huge impact on the comparative advantages of date exports from the GCC countries, highlighting a new range of necessary determinants for competitiveness of these countries on the international market of date. It aims to provide updated estimates of competitiveness indicators of the GCC countries on the international market of dates.

After summary description concerning date's production and consumption trends and patterns of the different GCC countries, this paper present the date trade matrix (destinations of exports and imports) of the considered countries. In a second part of this section, a set of competitiveness indicators were calculated to better reflect on the date trade balances performances of each of the GCC countries. The measures of competitiveness conducted in this paper include: i) the Market Share (MS); ii) the Revealed Comparative Advantage (RCA); and iii) the Trade Balance Index (TBI). The MS indicator was used to identify size advantages and the degree of specialization of a given country on the international market of a given commodity. The RCA has been defined as a measure of performance of international trade competitiveness of a given country for a given commodity. And finally, the TBI is used to analyze whether a country has specialization in export (as net-exporter) or in import (as net-importer) for a specific group of products. The sum of market shares of the 6 GCC countries is about 30% (2015). GCC countries market are progressing quite positively with increasing shares from one year to another. The highest RCA value was recorded for Saudi Arabia (about 43.5 in 2013). TBI results show the existence of structural differences between Saudi Arabia and UAE in terms of dates export and import patterns. These two countries are both the main players in date export in the GCC area. TBI of UAE is much lower than of Saudi Arabia, showing that UAE is also importing a higher proportion of its exported dates compared to Saudi Arabia. The date trade patterns among the GCC countries shows that there is a wide scope of coordination between the different trade strategies of these countries, through specialization and division of tasks. This can generate important opportunities for gaining more weight on the world market of dates.

Keywords: Competitive advantages, competitiveness indices, market share, revealed comparative advantage, trade balance index, dates marketing, Gulf cooperation council (GCC).

INTRODUCTION

Date palm production is a strategic sector in most of the GCC countries. The sector is one of the oldest economic activity in the Arabian Peninsula and continue to play a key role in the culture of its population. In addition to the importance of dates for domestic consumption, the date sector is also a source of employment, income generation, and trade in many of these countries. The date fruit, known for its nutritive as well as spiritual value, is marketed all over the world under different forms (fresh fruits, or high value confectionery). In some very arid areas, date fruit remains as an important source of subsistence and resilience for local populations.

The share of the GCC countries in the total world export value was about 25% in 2013 (FAO, 2013). The largest exporting countries of date on the international market are Tunisia, Algeria, Egypt, Saudi Arabia, and United Arab Emirates. The high competitiveness on the international market of dates involves developing analytical reflections and studies on sources of competitiveness as well as its indicators, which can serve to set targets, objectives, and trade strategies. This competitiveness analysis and performances of the GCC countries on the international market of dates is the purpose of this study.

Divergent approaches to competitiveness have produced different definitions. The concept is indeed very general and multifaceted and has a multidimensional nature linked to the optimal use of resources and geared to capturing development perspectives (Biggeri, 2007). With the increased globalization of the economy, the term competitiveness has become ubiquitous. The World Economic Forum's Global Competitiveness Report defines competitiveness as "the set of institutions, policies, and factors that determine the level of productivity of a country." An earlier definition by Porter (1990) of the competitiveness of national (and regional) economic sectors and clusters of firms (at meso-level) refers to the 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 rather 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).

Lachaal (2001) provides a comprehensive assessment of what could be considered as determinants of competitiveness (see Fig 1). These include national (natural resources endowment, level of technology use, productivity of production within the cluster of firms of a given sector, scale economies, transport and marketing costs, etc.) and international (exchange rate, world market conditions, international transport costs: distance of countries from their relevant markets) determinants.

Biggeri (2007) considers that measures of competitiveness at economic sector level include the overall profitability of one nation's firms in the sector, the trade balance in the industry, the balance of outbound and inbound foreign direct investment, and direct measures of cost and quality at industry level. In line with this statement, Lachaal (2001) states that measures of the competitiveness may include different types of indicators such as:

- Measures related to the production costs (comparative advantages/relative costs/absolute costs, etc),
- Measures related to the factor productivity, and
- Measures of trade performances.

In this research, we rather focus on the last bullet by calculating a set of trade performance indicators for the GCC countries operating on the international date market. We present these indicators, as well as the way they are calculated and the source of data used for their collection. The aim of this study is analyze the trade performances of GCC countries on the international market of dates. A list of performance indicators will be measured and reported. These include: i) the market share of a given country on the world export market of date, ii) the revealed comparative advantage, and iii) the trade balance index. The assessment and comparison of these indicators among the GCC countries, as well as with other major competitors at the international level would provide insights that can be used for setting improved trade strategies and market opportunities.

METHODOLOGICAL FRAMEWORK

Competitiveness is a complex concept which embed different indicators and involves different methods for their calculation. The competitiveness of a given sector (or subsector) can be analyzed from several perspectives (Han, Wen, & Kant, 2009). After a quick overview of the trends of different production and trade aggregates, we provide a calculation of a list of indicators which are widely used in competitiveness studies such as market share (MS); revealed comparative advantage (RCA), and trade balance index (TBI).

Market Share (MS)

The Market share indicator is used to identify size advantages and the degree of specialization of a given country on 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 captured by a country j. MS is calculated as shown in the following equation.

$$MS_{ij} = X_{ij}/X_{iw}$$

Where X_{ij} is the export of commodity i of country j; and X_{iw} is the world export of commodity i.

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 his total exportations (all sectors/commodities included), by the world export share of the same commodity compared to total world export (all sectors/commodities included). The RCA can be calculated as by the following equation.

$$RCA_{ij} = \frac{X_{ij}/\sum_i X_{ij}}{\sum_j X_{ij}/\sum_i \sum_j X_{ij}}$$

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; if RCA < 1 then a comparative disadvantage of the respective country is revealed.

Trade Balance Index (TBI)

Trade balance index (TBI). It is employed to analyze whether a country has specialization in export (as net-exporter) or in import (as net-importer) for a specific group of products. TBI was used as one of the crucial variables for analyzing the catching-up economies comparative

advantage. The TBI value indicates a qualitative structure of product export and import and trade flows. It is formulated as follows:

$$TBI_{ij} = (X_{ij} - M_{ij})/(X_{ij} + M_{ij})$$

Where Xij and Mij represent exports and imports, respectively, of country i for product j. The TBI value varies between –100 (if a country only imports) and 100 (if a country only exports). Any value within –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 product where the value of TBI is negative and as "net exporter where the value of TBI is positive.

Source of data
UN COMTRADE and FAO annual time series (from 1961 to 2011) of all national aggregates including average yield, total country production, consumption, export, and import are the primary source of data used in this research. Data from both sources was continuously cross checked in order to be sure of its reliability.

RESULTS AND DISCUSSION

Production and consumption trends, and patterns of date palm in the GCC countries
Official FAO statistics (Table 1) show that dates areas, production and yield are progressing quit differently among the GCC countries. Saudi Arabia, Oman, and United Arab Emirates (UAE) have the highest harvested areas in 2014 with respectively 107 281 ha; 36 255 ha and 28 485 ha in the three countries.

Harvested areas in Bahrain, Kuwait and Qatar are still very limited with respective values of 3195 ha; 8931 ha; and 2290 ha during 2014. However, harvested areas in these three countries have been quickly progressing during the last two decades with an average annual increase of about 20%, 40%, and 1.38% in respectively Bahrain, Kuwait, and Qatar (see table 1).
The highest average yields (calculated over the period 2000-2014) are recorded in Qatar, Bahrain, and Kuwait with respectively 112006 Kg/ha; 86950 kg/ha; and 85173 Kg/ha (see Fig.1). Average yields are the lowest in Saudi Arabia and UAE, with respectively 63105 Kg/ha and 49001 kg/ha in both countries. These yield values combined to the statistics on harvested areas makes Saudi Arabia the first producer of dates in the GCC region, with an average annual production of 933 899 tons per year, followed by UAE producing and average of 623 900 tons per year. More insight about the production levels (total domestic production quantities) of dates and their historical trends, including annual growth rates are given in Fig. 2.

In terms of consumption, the FAO data show that dates consumption per capita is the highest in Oman with a value of 68 Kg/capita/year, followed by Saudi Arabia with a value of 34 Kg/capita/year (see Fig. 3).

Part of date production is also used as feed in some countries. This practice is not only observed in GCC countries, but is also frequent in other North African countries such as Tunisia. Another part of date production is wasted. Fig. 4 shows some of dates quantities used as feed and wasted in the considered GCC countries. It shows that up to 38% of the dates production was served to animals as feed in UAE during 2013. For Oman and Tunisia, is variable between 4% and 15%, among years. The volume of wasted dates is also important in the considered countries. The lowest wasted percentage (of production) is recorded in Saudi Arabia (1%), while a highest rate of 13% is recorded in Kuwait.

Date palm trade matrix of the GCC countries
The trade matrix of dates for the GCC countries is represented through a list of exported quantities from each of these countries to different destinations in the world. However, due to the high number of destinations, we only summarized in Table 2 the number of countries to which each of the respective GCC countries are exporting to. We also added the exported quantities of dates and their respective value, for each GCC country. Results in table 2 shows that Saudi Arabia and Emirates are the most active in terms of market diversification expressed by the number of countries to which they are exporting dates. In 2015, Emirates was exporting to 103 countries, while Saudi Arabia was exporting to 66 countries. Qatar and Oman are also exporting to high number of countries, with respectively 62 and 28 export destinations.
In addition to data in table 2, we wanted to stress the intensity of dates exchange, particularly among the GCC countries (see Fig. 5). It shows again that Saudi Arabia and Emirates are the most active in terms of export on the GCC market, with high and growing export values to the different GCC countries. On the GCC market, UAE is mostly exporting to Oman, followed by Saudi Arabia and Qatar. While Saudi Arabia is mostly exporting to UAE followed by Kuwait and Qatar. Most of the Omani dates is also exported in the destination of UAE, which is showing that UAE is the first exporter and importer partner of Oman. This can be due to different consumers' preferences for dates in both countries and/or to different performances of dates processing companies in both countries.

Trade performances of dates: Results of indicators calculations

1. Market share indicator (MSI)
The analysis shows that GCC and North African countries are holding more than 70% of the international market of dates. Fig. 6 shows how this market is shared among the GCC countries and their direct competitors from North Africa, such as Tunisia, Algeria, and Egypt. In addition to Israel, who constantly holds around 10% of the international market of dates, Tunisia is dominating in terms of market share, with an average value of around 25% over the last decade. Algeria and Egypt are simultaneously holding around 4.2% and 3.8% of the market (Fig. 6).
The sum of market shares of the 6 GCC countries was about 30% of the international date market during 2015. This is showing that these countries together have strong potential for dominating the dates market (see Fig. 6). This total share was constantly progressing during the last decade, from a total value of 22.98% in 2005 to 30.49% in 2015. This progress especially refers to the rapid increase of the shares of Saudi Arabia, UAE, and Oman, as shown in Fig. 6.

Fig. 6 is providing also the values of market shares separately for the GCC countries. The reason is that the market shares of Bahrain, Kuwait, and Qatar are much smaller than these of Oman, UAE, and Saudi Arabia. In terms of progress, it is clear that all GCC countries, including the least present on the international market are progressing quite positively with increasing shares from one year to another. This is especially true for Qatar and Kuwait. Oman, Saudi Arabia, and UAE, also have the same trend with market shares increasing respectively from 0.34%, 8.65%, and 13.97% in 2005 to 1.14%, 12.95%, and 16.33% in 2015.

It is clear that coordination between the different trade strategies of the GCC countries, through specialization and division of tasks, can generate important opportunities for gaining more weight on the world market of dates. Dates producers and producer's organizations in major GCC producer countries, for instance, can interact regularly with dates processing and packaging manufactories and learn about exigencies and requirements on different markets.

Processing manufacturers can also develop strong interactions with date producer's organization to ensure the alignment of production procedures with specific international markets standards and norms. This type of interactions among the professional organizations within the GCC countries can be mutually advantageous and self-reinforcing, but will not happen without effective coordination at the policy making levels.

2. Revealed Comparative Advantage of dates for the GCC countries (RCA)

The revealed comparative advantage is an index used in international economics for calculating the relative advantage or disadvantage of a certain country in a certain class of goods or services as evidenced by trade flows. It is based on the Ricardian comparative advantage concept, with the assumption that the commodity pattern of trade reflects inter-country differences in relative costs as well as in non-price factors.

The higher the RCA index value, the greater the importance of date relative to other agricultural exports. Thus, an RCA index of 43.5 for Saudi Arabia in 2013, would indicate that the country dates export share for 2013 is 43.5% higher than its share in total world export of agricultural goods.

Results of the RCA calculation, shown in table 3 are very close the RCA patterns identified by El-Habba & Al-Mulhim (2013), with Kuwait and Bahrain having no RCA during the study period, and Saudi Arabia and Emirates having the highest comparative advantages among the GCC countries. Among competitors, Tunisia and Algeria are the countries with the highest RCA in terms of date trade.

In this study, we also used both FAOSTAT and UN COMTRADE databases as some small differences exists among both in terms of quantities and values of date traded. Results displayed in Table 3 were computed from UN COMTRADE data, while the results showing the trends of RCA in each of the GCC countries were calculated from FAOSTAT data. Results from both data sources are converging and confirming the RCA patterns also identified by other studies such as El-Habba & Al-Mulhim (2013).

3. Results of "Trade Balance Index" (TBI)

The trade balance index is an indicator of countries specialization in either export or import of a given commodity. As argued in section 3.3, any TBI value comprised between -1 and +1 indicates that the country is both importing and exporting date on the international market. Negative values of TBI (as highlighted in table 10), refer to countries which are net importers while positive values refer to net exporter countries.

Table 4 shows the existence of structural differences between Saudi Arabia and UAE in terms of dates export and import patterns. These two countries are both the main players in date export in the CC area. However, even though UAE is a net exporter of dates, its TBI is much lower than the TBI of Saudi Arabia, showing that UAE is also importing a higher proportion of its exported dates compared to Saudi Arabia. Saudi Arabia is a net exporter with very limited quantities of date importation. Most of its date export is actually driven by domestic production.

In 2013, Bahrain, Kuwait, and Qatar were recorded as net importers of date, with most of their domestic consumption coming from importations. In 2013, the TBI values for these countries were respectively about -0.97, -0.91, and -1.

CONCLUSION

The present study was mainly focusing on analyzing the trade performances of GCC countries on the international market of dates. A list of performance indicators, including the Market shares, revealed comparative advantage, and trade balance index, have been be measured. The assessment and comparison of these indicators among the considered countries can be used for setting improved trade strategies and access to more valuable market opportunities.

Results of our analysis have shown that the market share of the 6 GCC countries considered was about 30% of the international date market during 2015. This is showing that these countries together have strong potential for dominating the international date market. In terms of RCA, the highest RCA value was recorded for Saudi Arabia, showing that the country dates export share for 2013 is 43.5% higher than its share in total world export of agricultural goods. Moreover, Saudi Arabia had a positive trade balance, showing that this country is the only net exporter of date in the region. Despite the high RCA of UAE, its TBI was lower than Saudi Arabia showing that UAE is also importing a higher proportion of its exported dates.

The date trade patterns among the GCC countries shows that there is a wide scope of coordination between the different trade strategies of these countries, through specialization and division of tasks. This can generate important opportunities for gaining more weight on the world market of dates.

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Tables

Table 1. Date areas, production and yield of the GCC countries

GCC Countries	Items	Units	2000	2005	2010	2014
Bahrain	Area harvested	ha	823	1400	1588	3195
	Production	tons	16508	12000	12472	11164
	Yield	kg/ha	200583	85714	78527	34937
Kuwait	Area harvested	ha	1350	2000	5089	8931
	Production	tons	10155	15800	32561	115213
	Yield	kg/ha	75222	79000	63977	129004
Oman	Area harvested	ha	35508	31353	31353	36255
	Production	tons	280030	247331	276405	328392
	Yield	kg/ha	78864	78887	88159	90578
Qatar	Area harvested	ha	1931	1444	2469	2290
	Production	tons	16116	19844	21491	27482
	Yield	kg/ha	83459	137424	87043	120009
Saudi Arabia	Area harvested	ha	142450	150744	155118	107281
	Production	tons	734844	970488	991546	766800
	Yield	kg/ha	51586	64380	63922	71476
United Arab Emirates	Area harvested	ha	185330	185330	197400	28485
	Production	tons	757601	757601	825300	255182
	Yield	kg/ha	40878	40878	41809	89586

Source: FAOSTAT (several years).

Table 2. Number of dates exporting markets for each of the GCC countries

	2012			2015		
	Number of countries	**Exported quantities (Tons)**	**Value of export (1000 US$)**	**Number of countries**	**Exported quantities (Tons)**	**Value of export (1000 US$)**
Oman	23	5814.9	7745.6	28	9141.6	11981.5
Bahrain	2	43.8	33.1	4	10.0	16.5
Kuwait	19	363.9	337.7	18	564.4	397.2
Qatar	n.a	n.a	n.a	62	534.8	351.4
Saudi Arabia	60	64299.0	74859.5	66	120358.0	136263.6
UAE	98	304090.5	129177.2	103	309782.1	171897.1

Source: UN COMTRADE database; (na: not available). Number of countries shows the number of countries to which each of the respective GCC countries is exporting dates; Exported quantities are expressed in Tons; Value of export is expressed in 1000 US$.
Note: n.a: not available.

Table 3. Revealed comparative advantage of date trade for the GCC countries and their competitors

Countries	2002	2005	2007	2010	2013
Algeria	672.79	384.06	436.61	318.33	110.97
Bahrain	1.51	0.37	0.94	0.36	0.06
Israel	32.04	60.66	44.62	54.06	78.38
Jordan	4.97	6.30	6.83	7.71	7.08
Kuwait	4.09	na	0.73	1.71	1.04
Oman	9.71	5.39	22.67	17.29	12.98
Qatar	1.48	3.17	2.94	na	na
Saudi Arabia	104.68	45.11	31.67	47.13	43.51
UAE	na	37.54	40.35	na	45.10
Tunisia	463.26	199.43	227.93	323.80	228.73
Egypt	7.23	4.02	3.43	14.67	10.19

*Source: Calculations from UN COMTRADE dataset (several years).*
Note: n.a: not available.

**Table 4.** Trade Balance Index of dates for the GCC countries and their competitors

Countries	2001	2005	2008	2010	2013
Algeria	1	1	1	1	1
Bahrain	-0.83	-0.95	-0.67	-0.90	-0.97
Israel	1	1	1	1	1
Jordan	-0.72	-0.50	-0.40	-0.41	-0.44
Kuwait	-1.00		-0.99	-0.95	-0.91
Oman	0.98	-0.32	-0.60	-0.18	0.01
Qatar	-1	-0.95	-1	-1	-1
Saudi Arabia	1	0.90	0.83	0.96	0.95
Emirates		0.17	0.05		0.14
Tunisia	1	1	1	0.99	0.99
Egypt	-0.04	0.77	0.55	0.84	0.68

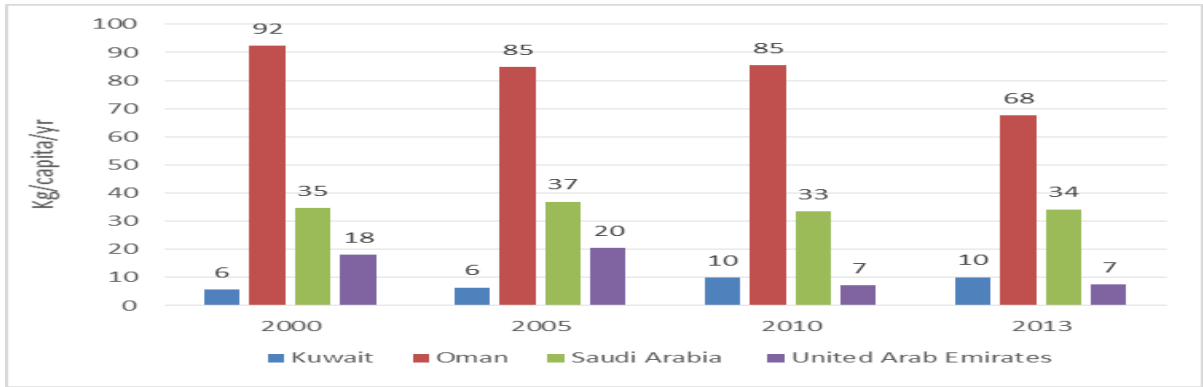*Note: Positive values indicate that the country is a net exporter. Negative values indicate the country is a net importer.*
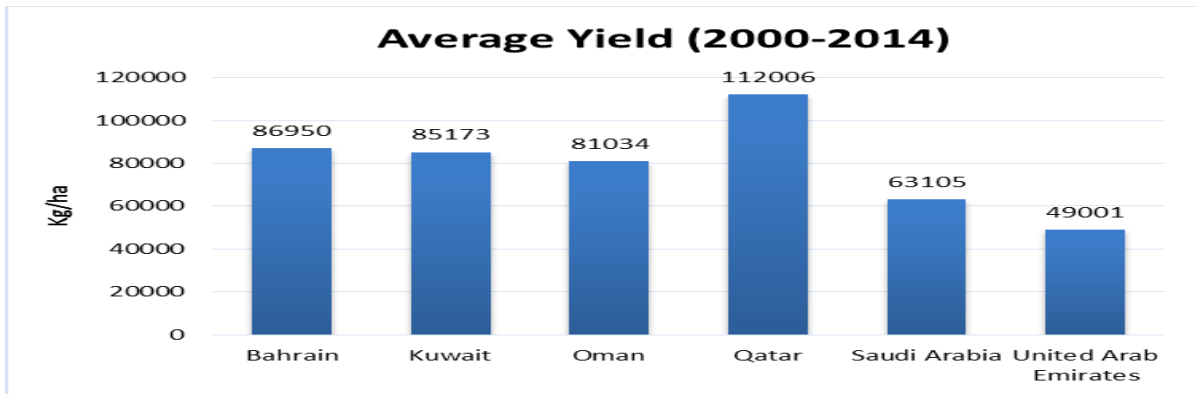
Fig. 1. Average yield of dates in GCC countries calculated over the period 2000-2014
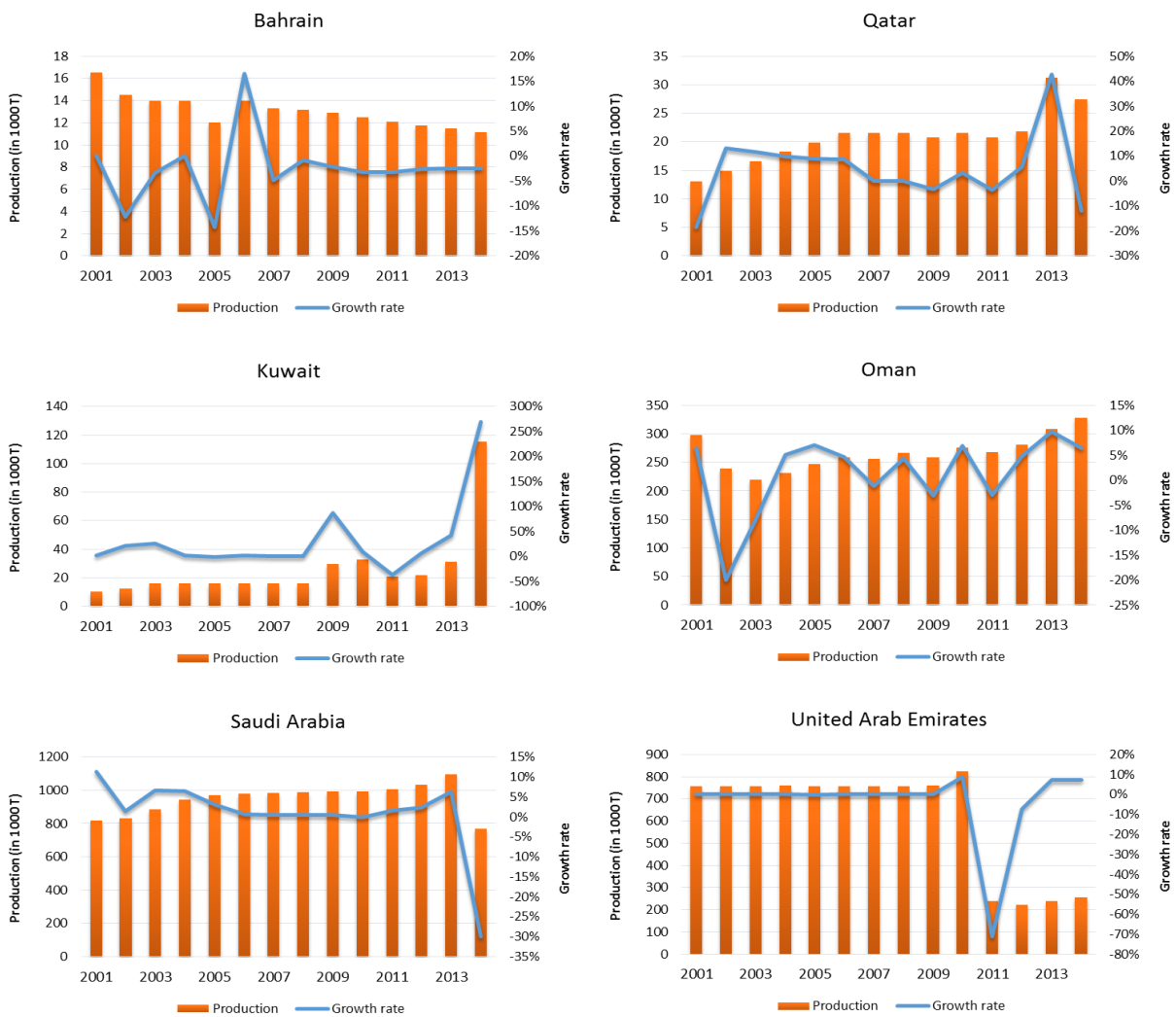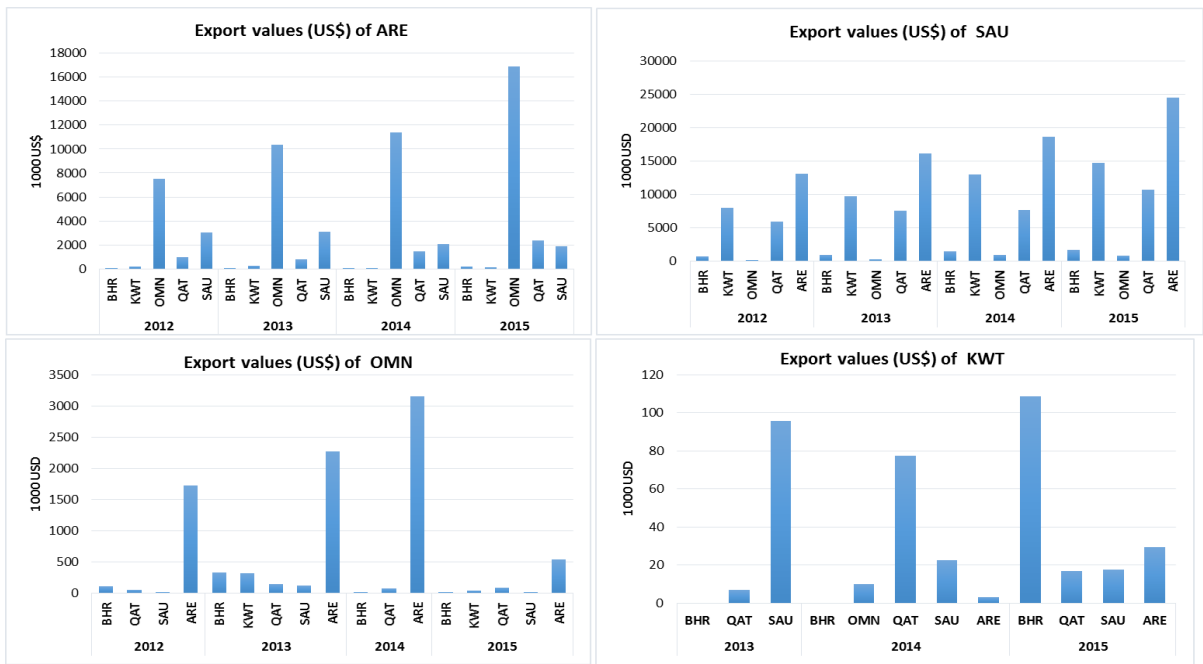

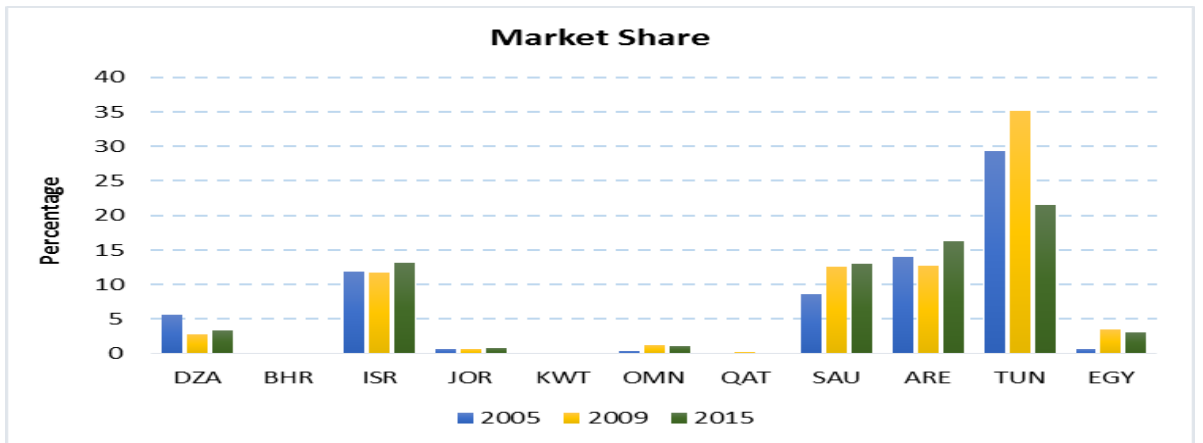**Fig. 2.** Production trends of dates in GCC countries

Fig. 3. Trend of date consumption per capita, year (in Kg), 2013 data

Fig. 4. Quantities and percentages of wasted dates and dates used as feed for selected countries

Fig. 5. Export trade of dates among the GCC countries (UAE: United Arab Emirates, SAU: Saudi Arabia; OMN: Oman; and KWT: Kuwait) (Source: COMTRADE UN database)

Fig. 6. Market share of selected dates exporting countries, including GCC countries and their competitors