JORDAN INVESTMENT COMMISSION الأردن هيئة الاستثمار

Pre-Feasibility Study

Medjool Palm Cultivation Project

Balqa

April, 2017

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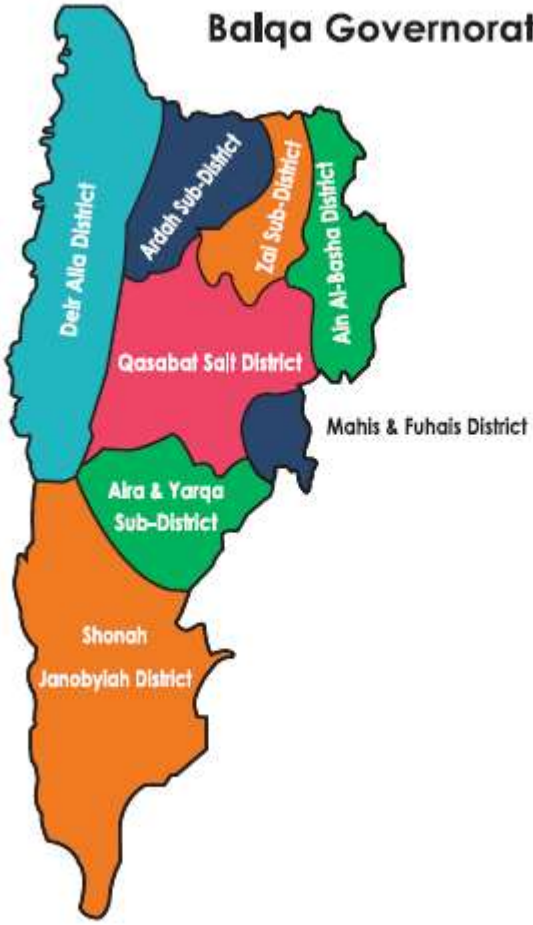

Balqa Governorate
Deir Alla District
Ardah Sub-District
Zai Sub- District
Ain Al-Basha District
Qasabat Salt District
Mahis & Fuhais District
Aira & Yarqa
Sub-District
Shonah
Janobyiah District

1. Executive summary

The study aims to determine the pre-feasibility of establishing (Medjool) palm trees project due to the increase in consumption rates of these dates and the increase opportunities for its production in the kingdom. The project is to cultivate (Medjool) palm trees in the Jordan Valley area of the Balqa governorate located along the Jordan River Bank is mostly part of the Jordanian lands and extends to the Palestinian territories on the other side. The following table shows the initial indicators of the project.

Table 1: initial indicators of the project

Project Name	(Medjool) palm trees cultivation project
sector	Agriculture sector- vegetable production
Governorate	Balqaa
Region	Al Agwaar
Products / Services	• Medjool dates • Medjool dates in different packages
Project Description	The project includes the establishment of a farm for (Medjool) palm cultivation in the Jordan Valley area of the Balqa governorate. The agriculture land would reach 100,000 square meters, and the cultivation will 12 palms in each dunum of land. Therefore, the total number of cultivated palm trees is 1,200 palms The Estimated production capacity per tree at the start of the productive period in the fourth year is about 25 kg per tree. The total production of the farm in the fourth year will reach 30 tons of dates.
Target Market	• All governates markets in jordan • export market • Dates factories and workshop ins jordan
Investment cost	The investment cost of the project is 750 thousand JDs
The average return on investment	The average return on investment over ten years is about 21.7%
Internal Rate of Return	The internal rate of return of the project is 20.1%
Average added value of the project	The average value added of the project during five years is about 225 thousand JDs
Risk Assessment	The Sensitivity Analysis indicates a low risk in case of 10% increase in investment cost, or 10% increase in operating costs, or 10% decrease in revenues.
The project justifications	• increase the demand on dates specially Medjool dates • Jordan is ranked 13 amongst dates exporters in the world

	• Possibility to export and to obtain foreign currency • Generation of job opportunities for Jordanians • The use of agricultural land in high-value added products
Partners/ Stakeholders	• The Ministry of Agriculture • The Jordan Valley Authority • The Ministry of Industry and Trade(registration of the company)

2. The Macroeconomic Environment

2.1 An Overview of the Hashemite Kingdom of Jordan

The Hashemite Kingdom of Jordan is a landlocked country surrounded by land except at its southern extremity at the port of Aqaba, where that area is the only sea exit area in Jordan. The Kingdom is bordered at its west side by Palestine and the Mediterranean Sea, at its south and east by the Kingdom of Saudi Arabia, at north east by Iraq and at north by Syria.

Figure 1: Map of the Hashemite Kingdom of Jordan

Jordan is marked by three climatic zones from west to east including the Jordan Valley, most of which lies below sea level and is considered subtropical, and upland areas to the east of the Jordan Valley, ranging in height from 100 to 1500 meters above sea level and this is one of the areas dominated by Mediterranean climate, and the desert areas stretching to the east of the highlands.

The total area of the Kingdom is approximately 89.3 thousand square kilometers, and the semi-desert conditions prevail in over 80% of this area where there are some wet lands settings like Azraq Basin.

The kingdom is divided administratively into twelve governorates distributed into three regions: the Northern Region (includes the governorates of Irbid, Mafraq, Jerash and Ajloun) while the Central Region (includes the governorates of the capital, Zarqa, Balqa, Madaba) and the Southern Region (includes the governorates of Karak, Tafila, Ma'an, Aqaba), and the major cities are Amman (the capital), Zarqa and Irbid.

2.2 Population

Based on the General Census of Population and Housing in 2015, the population in the kingdom amounted to about 9.5 million people with a population density of 107.3 inhabitants per km^2, where the Capital City knocked off other governorates by population amounting to about 4 million people and a population density of 538.8 inhabitants per km2, mainly because Amman is the most attractive governorate for Jordanians and for those coming to Jordan from other countries, followed by Irbid Governorate with a population of 1.8 million people, and then Zarqa Governorate with a population of 1.4 million. Tafila Governorate which is considered to be the least populous governorate whose population is about 96 thousand people.

Table 2: Number of population and population density in the Kingdom for 2015

Governorate	Population (people)	Area (Km^2)	Population density (people/ km^2)
Central Region			
Capital	4007526	7,579	528.8
Zarqa	1364878	4761	286.7
Balqa	491709	1120	439.0
Madaba	189192	940	201.3
North Region			
Irbid	1770158	1572	1126.1
Mafraq	549948	26551	20.7
Jerash	237059	410	578.2
Ajloun	176080	420	419.2
Southern Region			
Karak	316629	3495	90.6
Tafeileh	96291	2209	43.6
Maan	144082	32832	4.4
Aqaba	188160	6905	27.2
Total of Kingdom	9531712	88793.5	107.3

Source: Department of Statistics, Jordan General Population and Housing Census, 2015

On the other hand, the population growth rate has reached about 3% in 2010 and increased to 9% during the years 2013 and 2014 and then dropped a little during 2015 to reach about 8%, according to demographic surveys for the Department of Statistics. The reason for the high growth rates is attributed to the influx of large numbers of refugees from Syria to the Kingdom which resulted in a marked decline in per capita real GDP index by 5.4% to JD 1,197.4, based on the Statements of the Central Bank of Jordan.

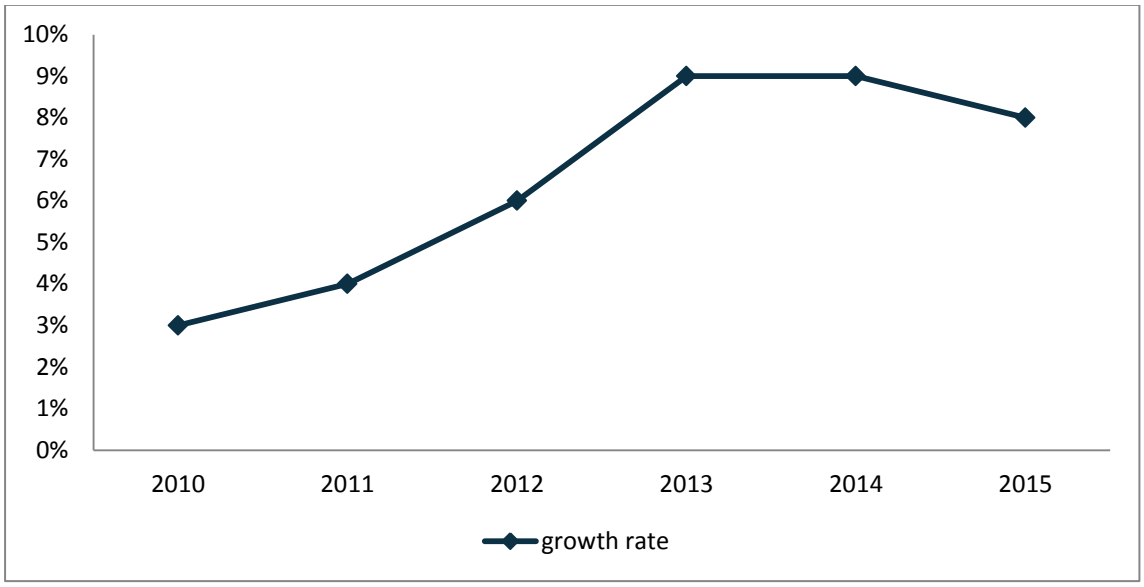
The unemployment rate among Jordanians also witnessed a rise by 1.1 percentage to reach to 13%, due to the structural imbalances that the labor market is suffering from and the acquisition of the low-paid foreign workers on a large number of new jobs in the economy, according to the Central Bank of Jordan.

Table 3: Number of population and population growth in the Kingdom, thousand

	2010	2011	2012	2013	2014	2015
population	6698.0	6993.0	7427.0	8114.0	8804.0	9531.7
growth rate	%3	%4	%6	%9	%9	%8

Source: Department of Statistics

Figure 2: population growth rate in the Kingdom



2.3 Economic Indicators in the Kingdom [1]

Countries across the Middle East are still suffering from instability and closure or partial closure of borders; including the borders of important markets for the Kingdom's products. These factors led to a decline in the performance of many of the economic sectors, including the external sector, national exports, touristic income, and Foreign Direct Investment (FDI), and they contributed to a slowdown in the economic growth to about 2.4% in 2015, compared to 3.1% in 2014. The growth achieved in 2015 came from growth across several economic sectors, especially in the finance, insurance, and real estate services; the transport, storage, and communications services; the mining industry; the manufacturing industry; and the agriculture sector. These sectors contributed a combined 1.8 percentage points (or 75%) of the growth rate achieved during 2015, reflecting the diversity of the economic growth sources in the Kingdom.

Additionally, the general price level registered a decline in the prices of oil, commodities, and other related services in the global markets. Therefore, the general price level, measured by the relative change in the average consumer price index deflated by 0.9% in 2015, compared to the inflation of 2.9% in 2014.

The budget deficit, after aid, increased by 1.2% to a record 3.5% of GDP, compared with 2.3% in the previous year. In addition, the Balance of Payments' Current Account recorded a deficit of 8.9% of GDP, compared with 7.3% in 2014. At the end of 2015, the net public debt amounted to 22,847.5 million Jordanian Dinars (85.8% of the GDP), with an increase of 5.0% of the GDP. However, the total public debt reached 24,876.5 million Jordanian Dinars (93.4% of GDP). This increase resulted from financing both the general budget deficit and the guarantees for loans for the National Electricity Company and the Water Authority, as well as the slowdown of economic growth during 2015. The indebtedness of the National Electricity Company and the Water Authority recorded 6.7 billion Jordanian Dinars at the end of 2015.

On the monetary and banking front, most monetary indicators experienced positive development in performance in 2015, primarily in the Central Bank's foreign reserves, which maintained comfortable levels that amounted to about $14.2 billion. The dollarisation rate decreased, which reflected positive demand for Jordanian Dinars in comparison to other major foreign currencies. With regards to the activities of licensed banks, the outstanding balance of credit increased by 9.5%, to reach 21,103.5 million Jordanian Dinars at the end of 2015. The total deposits registered with licensed banks increased by 7.7%, to reach 32,598.5 million Jordanian Dinars at the end of 2015. The increase in deposits came as a result of the high dinar deposits, which increased by 2,001.4 million Jordanian Dinars (8.3%), and higher foreign currency deposits, which increased by 336.1 million Jordanian Dinars (5.4%).

Furthermore, many of the external sector indicators registered a drop in performance in 2015 due to the deepening instability in the region and almost full closure of the borders

[1] The Central Bank of Jordan

with Iraq and Syria. However, the drop in oil prices in the global markets contributed to the decline in the Kingdom's imports bill for energy, as it dropped by 40.6%, which in turn contributed to a decline in total imports and the trade deficit by 11.4% and 14.0%, respectively. Thus, the Current Account, excluding aid, declined to 11.9% of GDP, compared to 12.4% in 2014.

The Current Account deficit increased after aid, to reach 2,365.6 million Jordanian Dinars (8.9% of GDP) in 2015, compared with a deficit of 1,851.7 million Jordanian Dinars (7.3% of GDP) in 2014. This decline is due mainly to the decline in total exports by 6.6% and the decline in surplus in the services account by 27.7%, as touristic income decreased by 7.1%, and the decline in the surplus in the current transfers account decreased as a result of reduced foreign aid.

Capital and financial accounts resulted in a net inflow of 1,593.7 million Jordanian Dinars in 2015, compared to 909.0 million Jordanian Dinars in 2014; this was due to the Kingdom's higher net obligations towards the outside world. Foreign Direct Investment registered a net inflow of 909.4 million Jordanian Dinars, and the reserved investment registered an inflow of 918.4 million Jordanian Dinars due to the Kingdom issuing Eurobonds that are worth $2.0 billion in the global markets. The withdrawal of bank loans on behalf of the Central Bank increased the use of funds from the International and Arab Monetary Funds by 543.3 million Jordanian Dinars. This led to the registration of a surplus in the overall Balance of Payments of 328.7 million Jordanian Dinars during 2015, compared to a surplus of 1,550.7 million Jordanian Dinars during 2014.

According to the Central Bank of Jordan, the increased international investment at the end of 2015 showed an increase in the external net liabilities of the Kingdom, which reached 24,357.5 million Jordanian Dinars, compared with 22,578.8 million Jordanian Dinars at the end of 2014. This was due to an increase in the external balance of assets and financial liabilities for all of the economic sectors in the Kingdom, which reached to 18,657.9 million Jordanian Dinars and 43,015.5 million Jordanian Dinars, respectively, during 2015.

Table 4: main economic indicators 2011 to 2015 in millions of dinars

	2011	2012	2013	2014	2015
Population (millions)	6.993	7.427	8.114	8.804	9.532
Unemployment rate	12.9	12.2	12.6	11.9	13.0
Production and Prices					
GNP at current market prices	20,288.8	21,690.0	23,611.2	25,141.2	26,289.6
GDP at current market prices	20,476.6	21,965.5	23,851.6	25,437.1	26,637.4
The rate of growth in GDP at constant market prices (%)	2.6	2.7	2.8	3.1	2.4
The total national disposable income at current prices	23,743.5	24,774.9	28,424.5	30,302.1	30,234.7
The rate of growth in gross national disposable income at	4.7	–0.2	8.6	3.1	–2.4

	2011	2012	2013	2014	2015
current prices (%)					
Change in the index of consumer prices (%)	4.2	4.5	4.8	2.9	–0.9
The change in the GDP deflator (%)	6.4	4.5	5.6	3.4	2.3
Money and Banking					
Exchange rate of the Jordanian dinar to the US dollar	1.410	1.410	1.410	1.410	1.410
Money supply (P2)	24,118.9	24,945.2	27,363.4	29,240.4	31,605.5
Net foreign assets of the banking system	9,370.1	6,665.5	6,923.4	7,932.3	8,137.3
Net domestic assets of the banking system	14,748.8	18,279.7	20,440.0	21,308.1	23,468.2
Net debt of the government	6,701.4	9,461.3	10,494.8	10,473.9	11,386.4
Private sector debts (Residents)	14,925.0	15,953.6	17,222.5	17,852.8	18,704.5
Other factors [(1)]	–6,877.6	–7,135.2	–7,277.3	–7,018.5	–6,622.7
Deposits in dinars at licensed banks	19,119.1	17,711.1	21,003.0	24,013.1	26,014.5
Foreign currency deposits at licensed banks	5,258.8	7,258.6	6,590.2	6,247.9	6,584.0
Rediscount rate (%)	4.50	5.00	4.50	4.25	3.75
Treasury bills interest rate for 6 months (%)	3.232	3.788	-	-	-
Public Finance					
Total revenue and foreign aid	5,413.9	5,054.2	5,758.9	7,267.6	6,796.4
Ratio to GDP (%)	26.4	23.0	24.1	28.6	25.5
Total spending	6,796	6,878.2	7,077.1	7,851.1	7,722.9
Ratio to GDP (%)	33.2	31.3	29.7	30.9	29.0
Overall deficit/savings (on an accrual basis)	–1,382.7	–1,824.0	–1,318.2	–583.5	–926.5
Ratio to GDP (%)	–6.8	–8.3	–5.5	–2.3	–3.5
Net outstanding balance of the domestic public debt	8,915.0	11,648.0	11,863.0	12,525.0	13,457.0
Ratio to GDP (%)	43.5	53.0	49.7	49.2	50.5
Outstanding external public debt [(2)]	4,486.8	4,932.4	7,234.5	8,030.1	9,390.5
Ratio to GDP (%)	21.9	22.5	30.3	31.6	35.3
Foreign Trade and Balance of Payments					
Current account	–2,098.8	-3,344.9	-2,487.7	-1,851.7	-2,365.6
Ratio to GDP (%)	–10.2	–15.2	–10.4	–7.3	–8.9
Trade balance (Deficit)	–6,261.7	–7,486.6	–8,270.1	–8,495.6	–7,249.3
Ratio to GDP (%)	–30.6	–34.1	–34.7	–33.4	–27.2

	2011	2012	2013	2014	2015
Commodity exports	5,684.5	5,599.5	5,617.9	5,953.6	5,558.3
Imports of goods (FOB) [3]	11,946.2	13,086.1	13,888.0	14,449.2	12,807.6
Balance of services (net)	896.0	1,332.3	1,209.5	1,778.9	1,286.4
Income account (net)	–187.8	–275.5	–240.4	–295.9	–347.8
Current transfers (net)	3,454.7	3,084.9	4,813.3	5,160.9	3,945.1
Capital and financial account (net)	2,298.9	3,808.9	1,811.1	908.9	1,593.7
Direct foreign investment in Jordan (net)	1,055.0	1,074.3	1,281.2	1,426.7	905.1

Source: Monthly Statistical Bulletin, Central Bank of Jordan

1. Includes the debts of public and financial institutions and other factors, as shown in the Monetary Survey Agenda.
2. This represents the total balance of drawn loans, minus total repayments.
3. Does not include imports of non-resident entities.

2.4 The Jordanian Investment Environment

Investment Law No. 30 for 2014

Investment Law no. 30 for 2014 is considered an appropriate legislative framework to attract foreign investments and stimulate local investments. It is considered a competitor to other investment laws in the region because it contains many advantages, incentives, and guarantees, and it offers a range of incentives and benefits in and outside the Development and Free Zones. The law includes a series of public provisions, such as foreign investment guarantees (depositing and withdrawal of capital, investment management, and transfers) and the inadmissibility of the disbarment of investment property. The law offers provisions to settle investment disputes, protection, and encouragement of mutual investment agreements between the Kingdom and other countries.

The following shows the major incentives granted by the law:

❖ **Incentives and Benefits outside the Development and Free Zones**

- The production inputs for the industrial and crafts sectors are exempted from customs duties.
- The return of the general sales tax on the production inputs for the industrial and crafts sectors within 30 days.
- Production inputs and fixed assets of the industrial and crafts sectors are exempted from customs duties and are granted a reduction in general sales tax to 0%.
- Returning to the sales tax on the services needed to practice economic activity within 30 days.
- The goods that are necessary for the economic activities of the following sectors are exempted from customs duties and are subject to 0% general sales tax:
  - Agriculture and livestock, hospitals and specialised medical centres, hotels and touristic facilities, touristic entertainment and recreation centres, call centres, scientific research centres and laboratories, art and media production, convention centres and exhibitions, transfers and/or distributions and/or extraction of water, gas and oil derivatives, air transport, maritime transport, and railways.

❖ **Incentives and Benefits inside the Development and Free Zones**

- 5% income tax on the income generated from economic activity within the Development Zone.
- 5% income tax on income generated from economic activity in the industrial sector.
- Tax exemptions that are granted in the Kingdom on goods and services exports.
- Reduction of sales tax to 0% on goods and services that are used by the establishment in order to exercise its activity inside the Development Zone.
- 7% sales tax on specific services provided by a registered company in the zone when these services are consumed in the zone.
- Exemptions from customs duties except for a specified number of goods.

❖ **The Reduction of Income Tax in the Least Developed Areas for Regulation No. 44 for 2016**

- The reduction of income tax in the least developed areas for Regulation No. 44 for 2016 was approved. It aims to create an attractive environment for investments that promote economic development through the reduction of income tax outside the Development Zones and in the least developed areas in the Kingdom. The regulation specified the areas that are considered least developed and identified the activities that are excluded from this reduction.
- Under the provisions of Articles 4 and 5 of this regulation, the areas that were categorised as least developed and enjoy the reduction in income tax are divided into four categories; each category enjoys a reduction in income tax on their activities for a period of 20 years.
- Category A includes the Northern Valley District, Deir Alla District, Shouneh Al-Janoubieh District, the Southern Valley District, Rweished District, the Northern Desert District, the North Western Desert District, Al-Azraq Province, Al-Jiza District except for the borders of the new Al-Jiza municipality, Al-Moakar District except for the borders of Al-Moakar municipality, and the Governorate of Aqaba except for the Aqaba Special Economic Zone. The reduction rate for this category is 100%.
- Category B includes the Governorates of Maan, Tafileh, Karak, and Ajloun. The reduction rate for this category is 80%.
- Category C includes the Governorates of Jarash, Mafraq, and Irbid except the borders of the Greater Irbid Municipality. The reduction rate for this category is 60%.
- Category D includes the Governorates of Madaba, Balqa, Amman except for the Greater Amman Municipality, and Zarqa except for the borders of Zarqa Municipality and Russaifeh Municipality. The reduction rate for this category is 40%.

❖ **Trade and Free Trade Agreements**

The most important agreements are:

- Jordan joining the World Trade Organisation in 2000, which led to the opening of the markets of 150 countries for Jordanian exports in goods and services, and provided new opportunities of access to other countries within a clear and transparent environment of laws, regulations, and procedures.
- A series of regional trade agreements, such as the Jordan Partnership Agreement with the European Union, Agadir Agreement, Free Trade Arab Agreement, the free trade agreement between Jordan and the European Free Trade Association, and the adoption of the Euro-Mediterranean simplification of the rules of the Origin System, which includes the decision to simplify the rules of the origins of Jordanian products between Jordan and the European Union came into effect on July 19, 2016, and will remain in effect until December 31, 2026.
- A series of bilateral trade agreements with many countries, such as the free trade agreement between Jordan and the United States of America, the Qualified Industrial Zones Agreement, the free trade agreement between Jordan and Singapore, the free

trade agreement with Turkey, the free trade agreement with Canada, and many other agreements.

- Jordan has signed more than 35 agreements with Arab and foreign countries in order to prevent double taxation between Jordan and these countries, thus protecting investors' rights.
- The Agreement of Promotion and Protection of Investments and the Movement of Capital between the Arab Countries was signed in 2000 with 11 Arab countries who are members of the Arab Economic Unity Council, in order to establish an appropriate environment for investments and economic cooperation between investors in the Arab countries, thus pushing and stimulating investment activities by providing encouragement and mutual protection for Arab investments.

Human Development Report for 2015

The Human Development Report that was issued by the United Nations Development Program in 2015 showed that Jordan fell 3 points to number 80. Please note that Jordan's place on the Human Development Report index value has improved slightly.

Global Competitiveness Report

The Kingdom's rank has improved by one point in the Global Competitiveness Report for the year 2016/2017, at 63 out of 138 countries compared to 64 out of 140 countries in the 2015/2016 report. It is considered an insignificant improvement, especially because of the reduction in the number of countries participating in this year's report. Amongst the Arab countries, Jordan was ranked after the United Arab Emirates, Qatar, the Kingdom of Saudi Arabia, Kuwait, and Bahrain, who were ranked 16, 18, 29, 34, and 39, respectively.

Doing Business Report

In the Doing Business Report that was issued by the World Bank Group, Jordan is still ranked 118, up one rank from the 2016 report, because of the variation in the performance of the different sub-indicators. Jordan ranked ninth among the Arab countries; the United Arab Emirates was ranked first among the Arab countries at 26, followed by Bahrain at 63 and Oman at 66.

2.5 The Economic Environment in the Short and Medium Term

Risks analysis implemented by BMI indicates that the Jordan's political and economic risks in the short and medium term are less than the overall average of the world and the Middle East. The state's risks and the operational risk are estimated to be within the acceptable levels. The international institutions' forecasts point out that the economic and foreign trade indicators are expected to achieve acceptable rates of growth with the exception of the continued increase in internal and external indebtedness.

Table 5: Assessment of short and long-term risks

	Long term		Short term		Operational risks	State risks
	political	Economic	political	economic		
Jordan	63.1	39.2	66.6	46.2	58.7	55.4
Turkey	60.2	49.4	58.4	56.9	55.9	56.1
Egypt	53.3	45	52.4	48.7	42.9	47.5
Lebanon	45.8	54	55.4	53.5	44.2	49.5
West Bank and Gaza	33.1	38.1	32.2	36.5	32.5	34.3
Syria	22.9	24.4	22.4	23.6	29.3	26.1
Regional average	49.4	46.9	51.2	48.7	46.6	48.3
global average	64.1	50.7	61.3	51.9	49.8	54.6

Source: the economy and state risks, IHS, 15/09/2016

Table 6: The most important key economic indicators 2016-2020

Indicator	2016	2017	2018	2019	2020
The growth rate of GDP	2.6	2.7	2.8	3.2	3.1
GDP (in USD billions)	39.6	42.1	44.8	47.8	50.9
Population (In millions)	9.8	10.1	10.4	10.7	11.0
Consumer Price Index (% change)	-0.7	1.8	3.3	4	3.2
Exports (in USD billions)	7.3	7.6	8.2	8.8	9.6
Imports (in USD billions)	18.3	19.2	20.1	21.3	22.8
Foreign direct investment, the net value (in USD billions)	1.5	1.5	1.6	1.6	1.7
Foreign direct investment, the net value (% of GDP)	3.7	3.7	3.6	3.4	3.3
Foreign exchange reserves (in USD billions)	13.9	14.9	15.7	16.8	17.7
Total external debt (in USD billions)	24.4	27.8	30.7	33.7	36
Total external debt (% of GDP)	61.6	66	68.6	70.4	70.6
Total external debt (% of foreign currency earnings)	127.3	138.3	143.6	147.5	147.8

Source: the economy and state risks, IHS, 15/09/2016

3. Market Study

3.1 Project Description

The project is the establishment of a (Medjool) palm cultivation from production of the (Medjool) dates in the Jordan Valley. This type of dates is highly demanded in the international markets because of the size of the fruit and its balanced taste and desired flavor. Al-aghwar area in Balqa Governorate has been selected to establish the project because it contained the most fertile agricultural lands in the kingdom and is featured by a climate which is warm in winter and very hot in summer which fits (Medjool) palm cultivation requirements.

3.2 Expected products description

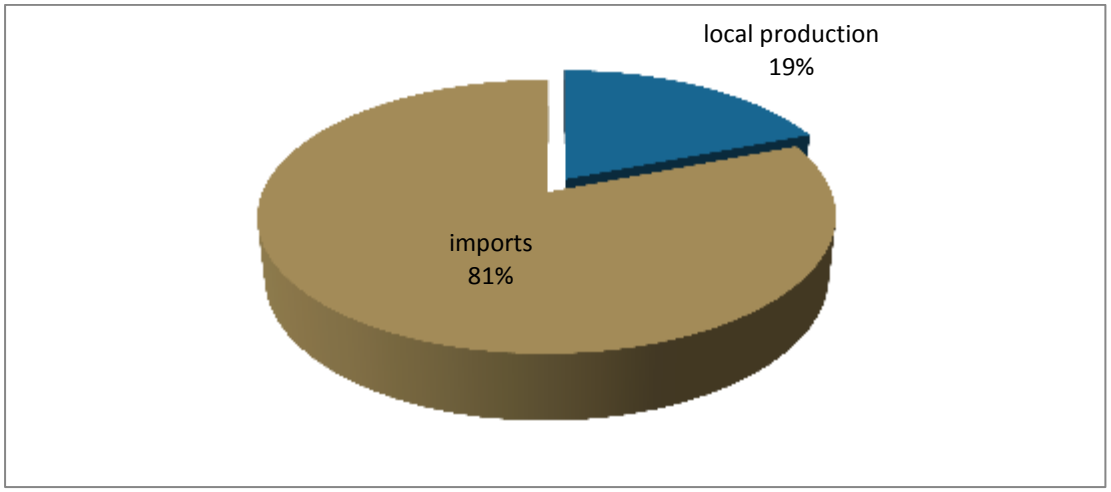
The project expected Products include (Medjool) dates packed and unpacked (different quantities) or packaged in packs with different sizes and shapes.

3.3 The market size

Dates Total Market Size

The volume of date's consumption in Jordan in the year 2015 reached about 15,263 tons, representing 1.6 kg per person. The date's market in Jordan is considered one that is dominated by imported products, where imports represent more than 80% of the total date's market especially from Saudi Arabia, the United Arab Emirates, and Algeria, as shown in the following figure.

Figure 3: Distribution of the dates total market size as domestic production and imports for the year 2015



The following table shows the estimates for calculating the size of the Jordanian market size of dates for the year 2015 on the basis of the amount of domestic production, national exports and net national imports.

Table 7: The size of the Jordanian market of dates

	Quantity (tons)
Imports	12,649
Re-export.	292
Net imports	12,357
local production	6,548
national exports	3,642
Net volume of consumption	15,263

Source: Ministry of Agriculture, the annual report of 2015, The Department of Statistics, Foreign Trade Statistics

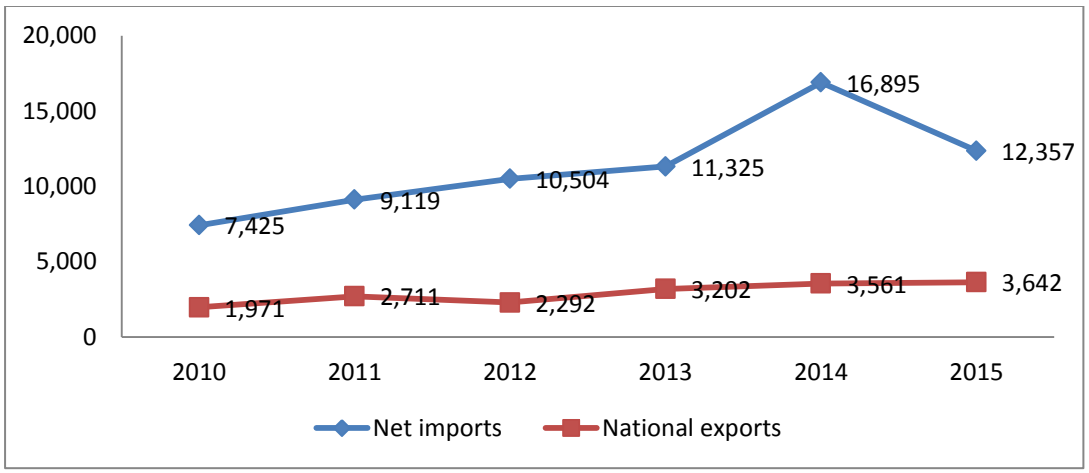
It is worth mentioning that the consumption habits for Jordanians recently started to lean towards to eating dates and that is because it is considered on nutritious food as it contains all the needed nutrients, this would increase the expected consumption rates during the coming years. The following table shows the import and export quantities of dates during the past five years. The statistics show the increase in the volume of national exports during the period 2010 to 2015, while the quantity of imports in the year 2015 decreased from its levels in the year 2014, which gives a clear indication of the increasing quantities of local production of dates.

Table 8: the export and import quantities of dates during the years (2010 - 2015)

	Quantity (tons)					
	2010	2011	2012	2013	2014	2015
Imports	8,048	9,635	10,915	11,985	17,535	12,649
Re-Exports	623	516	411	660	640	292
Net imports	7,425	9,119	10,504	11,325	16,895	12,357
National exports	1,971	2,711	2,292	3,202	3,561	3,642

Source: The Department of Statistics, Foreign Trade Statistics

Figure 4: the export and import quantities of dates during the years (2010 - 2015)



Domestic Production and Export

The local production of dates from the market surveys and estimates of the Ministry of Agriculture is estimated at about 6,548 tons for the year 2015, while the volume of exports for the year 2015 reached about 3,642 tons. The Saudi, UAE and Egyptian markets are considered the largest export destinations of the Jordanians dates. Accordingly, the volume of domestic consumption of the local production reached 2,906 tons. The dates production in the kingdom is distributed into different kinds of dates most importantly are Medjool ,burhi ,sokkari,khalas,khodre,maktomi,hyyani,zaghlol,halawi,Ahmar,tallal,zohdi and dijla noor.

The following table shows, Jordan's exports of dates in the year 2015.

Table 9: Export and re-export of dates in the year 2015

country	The value of national exports (thousand JDs)	The value of re-exports (thousand JDs)	The total value of exports (thousand JDs)	%	The quantity of national exports (tons)	The quantity of re-exports (tons)	The total export Quantity (tons)	% share
Saudi Arabia	295.8	52.3	348.1	%6	432.4	16	448.4	%11
The United Arab Emirates	1,093.6	17.6	1111.2	%19	652.3	18	670.3	%17
Egypt	294	0	294	%5	494.5	0	494.5	%13
Kuwait	418.5	0	418.5	%7	432.5	0	432.5	%11
Lebanon	594.2	0	594.2	%10	414	0	414	%11
Qatar	284.3	0	284.3	%5	323	0	323	%8
Morocco	791.7	0	791.7	%13	132	0	132	%3
Palestinian National Authority	176	99.3	275.3	%5	173.3	80	253.3	%6
European countries	867	0	867	%15	302	0	302	%8
other	811.9	174.8	986.7	%17	286	178	464	%12
Total	5,627	344	5971	100%	3,642	292	3,934	100%

Source: The Department of Statistics, Foreign Trade Statistics

The previous table shows in addition to the most important destinations of the Jordanian dates exports, that some European countries, mainly France, Italy, Germany and the United Kingdom import quantities of Jordanian dates which is an important factor of the expansion of exports to Europe because they achieve high values of the income generated from export.

The value of exports of dates to the European countries was 15% of the total value of exports of dates of the Kingdom in the year 2015. It is worth mentioning that Israel is considered one of the countries that export large quantities of dates to the European countries. The quantity of Israel exports to the European countries in the year 2015 reached

about 38 thousand tons of dates according to the World Trade Map statistics, which makes it the main competitor to the Jordanian dates, both in terms of production or foreign trade, especially that the characteristics of the (Medjool) cultivation are available in both countries, including the climate and Fertility of agricultural land and other characteristics that are important for the cultivation and production of competitive quantities.

As the following table shows the most important dates exporting countries which could compete with the Jordanian dates in the area of external trade.

Table 10: The most important dates exporting countries in the year 2015

Country	Quantity of exports (tons)	%	value of exports (1,000 dollars)	%
Iraq	147,526	17%	63,217	6%
Pakistan	131,169	15%	83,214	7%
Saudi Arabia	120,358	14%	136,264	12%
Iran	116,874	13%	93,124	8%
Tunisia	103,062	12%	227,010	20%
United Arab Emirates	87,856	10%	96,325	8%
Israel	44,933	5%	138,724	12%
Algeria	28,577	3%	34,798	3%
France	12,418	1%	34,465	3%
Egypt	10,698	1%	33,027	3%
other	68,223	8%	196,326	17%
The World total	871,694	100%	1,136,494	100%

In addition to official statistics which have been adopted by the Ministry of Agriculture and the Department of Statistics, a meeting was held with the President of the Jordanian dates Association to collect some information on the dates in Jordan, the Association represent the dates procedures in front of the relevant authorities and promotes the Jordanian dates according to international standards. The Association indicated that the kingdom contain about 35,000 dunums of agricultural land planted with palm trees. The estimated number of trees in these areas is about half a million fruitful and non-productive trees. The association expect an increase in Jordanian production of dates in particular the (Medjool) and (burhi) types that are mostly produced in the kingdom during the coming years due to entry of the newly cultivated areas in the production cycle as well as the continuing momentum of the expansion in its cultivation and the increase in the number of trees because of the possibility of planting new palm trees, beside the old ones. All of these developments give a clear indication of the increase in quantities production in the coming years.

Imports

The date's market in general, is considered an active market when it comes to imports. The analysis shows that the kingdom imports large quantities of dates especially from Saudi Arabia, the United Arab Emirates, Algeria, Iraq and Palestine. The total imports of the kingdom in the year 2015 reached about 12,649 tons of dates of various kinds and with a value of 14.8 million JDs, while the amount of net imports being consumed locally reached about 12,357 tons. The following table shows the Jordan imports of dates in the year 2015.

Table 11: The Jordanian Imports of dates in the year 2015

The country	Value (thousand JDs)	%	Quantity (tons)	%
Saudi Arabia	9,344.2	63%	7,264	57%
United Arab Emirates	4,499.2	30%	4,144	33%
Algeria	321.4	2%	227.7	2%
Iraq	383	3%	771	6%
Others	247.2	2%	242.3	2%
Total	12,649	100%	14,795	100%

Source: The Department of Statistics, Foreign Trade Statistics

Additionally, the following table shows the most important countries that import dates internationally which could be potential export destinations for the Jordanian dates.

Table 12: The most important countries that imports dates internationally in the year 2015

The country	The quantity of imports (tons)	%	The value of imports (1,000 US $)	%
India	314,477	%35	188,707	%17
Morocco	69,500	%8	109,790	%10
America	50,548	%6	60,877	%6
Yemen	33,341	%4	18,767	%2
France	32,662	%4	73,602	%7
Turkey	25,658	%3	20,176	%2
Indonesia	21,053	%2	29,728	%3
United Arab Emirates	21,741	%2	34,699	%3
Britain	19,679	%2	52,881	%5
Malaysia	18,869	%2	45,977	%4
Germany	17,053	%2	46,452	%4
Other	265,978	%30	413,252	%38
Total world	1,094,908	100%	890,559	100%

Source: World Trading Map, international statistics

The size of Medjool dates market

The Medjool dates is ranked first among the types of dates produced locally in terms of production, consumption and foreign trade activities[2]. This is because it has many advantages that make it a desirable product to consumers due to its taste, size easy cultivation and the ability to produce large quantities of it. Also this type of dates contains mainly monocrystaline (glucose and Fructose) not bilateral sugars (Sucrose) which has a negative impact on the levels of blood sugar. As well it contains high levels of potassium, phosphorus and anti-oxidants., which indicates the importance of this healthy food type and sufficient justification of the large increase in its consumption.

Medjool Palm is most commonly found in the Jordan Valley, Wadi Araba, Gweera and southern and central Aghwar, it is not suitable for cultivation in the northern regions of the kingdom because of the lack of adequate weather conditions.

In addition to that, the head of the Jordanian dates Association expects that the Medjool dates rates of production and consumption will increase very significantly in the kingdom starting from the year 2017, because of the entry of new areas planted with small Medjool palm trees in to the production cycle starts after five years of palm cultivation. He also noted that the cultivated areas of the Medjool palm had currently reached to approximately 20,000 dunums of land out, of which about 10 thousands of dunums are cultivated with productive palm trees which is estimated at about 240 thousand productive palms, while the remaining area (10,000 dunums) are cultivated with newly planted Medjool palms trees that didn't start the production cycle yet.

The President of the Association also noted that a one dunum of Medjool palm trees produces about one ton of dates, therefore the total production of the Medjool dates is estimated at up to 10,000 tons, the dates export 50% of the production of the local promotion to reach 5,000 tons. With regard to the size of imports from Medjool dates, it is important to note that Jordan imports small quantities of the Medjool dates from Palestine and Egypt (where the Egyptian dates is with less quality then the local production), re-exported or consumed locally at lower prices.

The following table summarizes the most important producers of dates in Jordan and the contribution of each of them in the production of the Medjool dates on the basis of the number of palm trees and the number of Medjool palm trees in each farm.

[2] According to the Jordanian dates Association.

Table 13: The most important competitors in the production of Medjool dates in Jordan

The Farm	The total number of palm trees	The number of Medjool palm trees	The percentage from the total farm production
Albaraka(alnber)	21,141	3,665	%17
Al haqq	6,000	* 1,664	%28
Advanced agricultural investments(kawar)	32,671	1,664	%5
Al khairat	3,000	2,300	%77
Khattab	3,850	1,410	%37
Alna'ori	7,690	7,010	%91
Alnawa	5,840	4,000	%68
Alkaram	2,000	2,000	%100
Aldefaf for agriculture products	4,000	2,500	%63
Nakklah mubarkah	10,000	7,000	%70
Naher Al-Ordon	3,800	3,625	%95
Total	99,992	36,838	37%

Source: - Field research and interviews
Palms trees database in Jordan
- Jordanian Dates Association
* This number represents the Medjool palm trees only existing in fakher albaraka farm designated for the production of Medjool dates, where there is other numbers of Medjool palm trees in the other farms of the Al-barakaa farms.

3.4 The price analysis

The average prices of dates in the Kingdom where identified through a field study of the local market and some farms main producers of dates. Medjool and Burhi dates are the most important types of dates in Jordan and more demanded by local consumers. The following table shows the prices of these two types in Jordan.

Table 14: prices of local dates in Jordan

The type of the dates	Description	Average price (JDs /kg)
Medjool Dates	raw dates from the Farm land	3
	Average price in Retail	7
	Grade 1 large size for consumer	9
	Grade 2 large size for consumer	8
	Grade 3 large size for consumer	7
	Grade 1 small size for consumer	5
	Grade 2 small size for consumer	3
Burhi Dates	According to the size and drainess degree	Ranges from half JDs to 1.25 JDs

An Overview of Major Competitors

There are many local companies that cultivate and produce different types of dates. This part of the study identifies the major competitors, and provides some general information per each farm showing the main products in addition to the areas and number trees shown in the following tables:

Name of the company	**Khattab Palm Farms**
Location	Deer alla
General description	Khattab Palm farms was established in 2006, which is a Jordanian company specialized in palm cultivation and production of two types of dates including Medjool and Burhi. The majority of the farms production of dates is Medjool. The company is member of the Committee on the palm and dates producers of Jordan. The company owns five farmers showing 6,000 trees spread over more than 700 dunums of land in the Jordan Valley area. The number of Medjool palm trees are over 3,700 palm trees, the number of Burhi palm trees are more than 2,025. The farms names the names inspired by the archaeological sites in Jordan: Wadi Rum, Jerash, Petra, Umm Qais, and Alazraq.
The main products	• Medjool dates : there are two types of it in Kattab show room: -First class: characterized by the solid peel, good quality, it has five classifications according to size ,Taeb (super jampo, Aljood (jampo), Alkaram (large), Alkheer (medium), Alwaha (small) -Second class: characterized by the less solid peel, and may have some quality differences. It has four classifications according to size: jampoo, large, medium, small • Burhi dates • Chocolates and nuts with dates • pills palm vaccine and other products

Source: field research and multiple interviews
Palm trees database in Jordan

Name of the company	**AlHaqq farms**
Location	Wadi Mousa, Wadi Araba, Jordan Valley, Aqaba
The General description	AlHaqq farms which is owned by the Alhaqq institution is considered one of the largest dates production farms in Jordan. Alhaqq Foundation owns a number of farms which produce Medjool, Burhi, dijla noor and other dates. These farms are a Wadi Mousa farm with an area of 310 dunums of palm trees, Alka'a farms, located in the area of Wadi Araba with an area of 69 dunums of palm trees, Alrahma farm located in the area of Wadi Araba with an area of 350 dunums of palm trees. Aqaba palm farm with an area of 650 dunums, Um Methla farm in the area of Wadi Araba with an area of 132 dunums, and Makroma Malakya farm located in the area of Alsammar in the Jordan Valley with an area of 265 dunums. The area of ALHaqq farms that spread in several governorates of the kingdom is about 4,650 dunums of agricultural land, of which some 1,776 dunums are cultivated by palm trees. The number of Medjool palm trees in all these farms is estimated at about 3,665 palm trees. The number of Burhi palm trees about 6,620 palms tree. As for Dijla Noor, the number of palms are about 7,230 palm trees, in addition to 3,626 of the other types.
The main products	• Medjool dates • Burhi dates • Dijla Noor • Other types of dates

Source: field research and multiple interviews
Palm trees database in Jordan

Name of the company	**ALBaraka farms (Alnaber)**
Location	The Jordan Valley,Azraq, Aqaba
General description	Albaraka farms was founded in 1989 by the Al-Naber family, it contains eleven farms distributed in all parts of the kingdom and covers an area of 5,134 dunums of palm trees. It produce of several types of dates increasing Medjool, Burhi, Dijla noor and others. Fukher Albarka form specializes in the production of Medjool dates. This farm less an area about 164 dunums with a total number of palm trees reaching 1,664.
The main products	• Medjool dates • Burhi dates • Dijla Noor • Other types of dates like Khalas ,AL lolo, Zuhdi, Daere, ...etc • Dates with candies • Sweetening and decorated dates • Honey • Grapes leaves • dried fruits and nuts

Source: field research and multiple interviews
Palm trees database in Jordan

Name of the company	**ALNawa farms**
Location	Jordan, Southern shuna
General description	Nawa farms are located in the Southern shuna and extend over 200 dunums of land planted with palm trees. It is a member of the Jordanian Association for the produce of dates. The farm produces two types of dates Medjool and Burhi. The farm has about 2,300 Medjool palm trees and 500 of Burhi palms trees, as well as 200 other fruit trees.
The main products	• Medjool dates • Burhi dates • Other types of fruits with small quantities

Source: field research and multiple interviews
Palm trees database in Jordan

Name of the company	AL naori farms
Location	Jordan, North- South Al-shouna (Al karama)
General description	Al naori farms is distributed on the regions of North and South Shuna, it consists of five farms producing two types of dates Medjool and Burhi. Three farms in the north produce Burhi dates in a total area of 154 dunums and with a number of trees reaching 2,440 palm trees. While two farms produce Medjool dates in the Southern Shuna region (Al karama) with an area of 120 dunums of land and the number of Medjool palm trees is about 1,410.
The main products	• Medjool dates • Burhi dates

Source: field research and multiple interviews
Palm trees database in Jordan

Name of the company	Advanced agricultural investments(Kawar)
Location	Jordan, Dair Aalla
General description	Advanced agriculture investments farms, which are owned by the Kawar family are distributed in the Dair Aalla region. It specializes in the production of two types of dates Medjool and Burhi. The total area of palm farms is about 600 dunums. These farms have a total of 7010 Medjool palm trees and 680 Burhi palms trees.
The main products	• Medjool dates • Burhi dates

Source: field research and multiple interviews
Palm trees database in Jordan

Name of the company	AL khairat farms
Location	Jordan, Dair Aalla
General description	Al Khairat farms produce three types of dates Medjool ,Burhi and Dijla Noor. The farm is located in the Dair Aalla region with an area of 600 dunums planted with 4000 Medjool palms trees, 840 Burhi palms trees and 1000 Dijla Noor palms.
The main products	• Medjool dates • Burhi dates • Dijla Noor dates

Source: field research and multiple interviews
Palm trees database in Jordan

Name of the company	Al karam farms
Location	Jordan, Dair Aalla
General description	Al karam farms which is located in Dair Aalla specializes in the production of Medjool dates, The area of Medjool palm trees is estimated at 180 dunums having more than 2,000 Medjool palms trees.
The main products	• Medjool dates

Source: field research and multiple interviews
Palm trees database in Jordan

Name of the company	Al defaf farm for agriculture production
Location	Jordan, Southern shuna
General description	Al defaf farm which is located in southern shuna focuses on the production of Medjool dates. The total area of the farm is about 250 dunums, having about 2,500 Medjool palms trees in addition to 1,500 other types.
The main products	• Medjool dates • Other types of dates with small quantities

Source: field research and multiple interviews
Palm trees database in Jordan

Name of the company	Al nakhla ALmubarkah farm
Location	Jordan, Southern shuna
General description	Al nakhla ALmubarkah farm which is located in the area of Southern shuna produces two types of dates Medjool and Burhi. The total area of the farm is about 1150 dunums having about 7,000 Medjool palms trees in addition to 2,800 Burhi palms trees and 200 other palms trees type.
The main products	• Medjool dates • Burhi dates

Source: field research and multiple interviews
Palm trees database in Jordan

Name of the company	Naher AL ordoun farm
Location	Jordan, Southern shuna
General description	Naher AL ordoun farm wich is located in southern shuna focuses on the production of Medjool dates. The area of the farm is about 266 dunums, having about 3,625 Medjool palm trees in addition to 175 other palm trees.
The main products	• Medjool dates • Other types of dates with small quantities

Source: field research and multiple interviews
Palm trees database in Jordan

3.5 Marketing Strategy

Target Market

The project targets the following categories:

- Jordanian market in all the governorates
- export markets
- Dates factories and workshop in Jordan

The Expected Prices

The expected price of Medjool dates products of the farm is about JD 4,262 per ton in the fourth year of the project estimated in 2021.

Expected Services and products

- The expected project products include of packaged and unpackaged Medjool dates in different size and shapes.

The promotion

The promotion strategy of the project includes:

- Design of an attractive web site and page on the social media
- participation in domestic and international Dates exhibitions
- use methods of effective display in malls

Sale

The sale strategy of the product includes:

- Selling direct to wholesalers and retailers
- Selling to other factories which depend on Medjool dates as production
- Export to international markets

3.6 The Expected Market Share

The following table shows the expected market share of the project in the first 10 years of the establishment of the farm.

Table 15: The market share of the project

	First year	Second year	Third Year	Fourth Year	Fifth year	Sixth year	Seventh year	Eighth Year	Ninth Year	Tenth year
quantity of production (tons)	–	–	–	30	54	72	96	120	132	144
Export Quantity (tons)	0	0	0	22.5	40.5	54	72	90	99	108
Amount of domestic sales (tons)	0	0	0	7.5	13.5	18	24	30	33	36
market size of the Medjool (tons)	1162	1220.1	1281.1	1345.2	1412.4	1483	1557.2	1635	1716.8	1802.6
Market share (%)	0%	0%	0%	1%	1%	1%	2%	2%	2%	2%

4. Technical Study

4.1 The Designed project capacity

The following table shows the Designed capacity of the project. The agricultural land is estimated at 100 dunums, where 12 palm trees will be planted in each dunum. The total palm trees number is 1,200 palm trees with a total production of 144 tons.

Table 16: Designed capacity of the project

	First year
Land area (1,000 square meters)	100
Number of palm trees per dunum	12
Total number of palm trees	1,200
production quantity (kg/tree)	120
Total Production quantity (tons)	144

The following table shows the areas required for the project. In order to reach the designed capacity of the project it requires the purchase of a land with an area of 100,000 m^2, and the establishment of buildings, warehouses with a total area of 350 m^2.

Table 17: Areas required for the project

Item	Unit (M2)
Land	100,000
Buildings	100
Warehouses	250

4.2 The Required Fixed Assets

The following table shows the required fixed assets for the project.

Table 18: the required fixed assets for the project

Item	The unite	Unit price (JD/ m^2)	Total Value (JD)
Land (m^2)	100,000	3.1	310,000
Buildings (m2)	100	150	15,000
Warehouse (m2)	250	120	30,000
Machines and Equipment	1	20,000	20,000
Outside works			140,000
drip irrigation networks	-	-	20,000
IT	1	5,000	5,000
Total			540,000

* estimated from the market research

4.3 The Required Human Resources

The following table shows the human resources requirements for the project. The number of staff required is only three employees with the total salaries of 13,200 JDs annually.

Table 19: Human resources requirements for the project

Item	Number of Employees	Monthly Salary (JD)	Total Value/ annually (JD)	Operational (JD/ annually)	Administrative (JD/ annually)
Supervisor	1	500	6,000	-	6,000
Worker	2	300	7,200	7,200	-
Total	3	800	13,200	7,200	6,000

It should be noted that there are a number of activities that require the presence of seasonal labors contracted to carry out such activities upon request. These activities include plowing and collecting of reap fruits, packaging, transportation and distribution. The following table shows the job description of the permanent jobs required for the project.

Table 20: job description of the permanent jobs required in the project

Position	Job description
Supervisor	Working individually and within the authority given to him for planning and management of the daily activities of the farm. Supervisor the production processes and quantities, and follow-up of the Sales and Marketing operations and the development of the production quality and specifications. Works to put the necessary plans for production, sales and marketing of products, and supervises the maintenance of buildings, installations, equipments and facilities of the farm to guarantee its readiness for work. The implementation of diseases and pests programs combating.
Worker	Take care of palm trees fertilizing the land and provides the special treatment for its growth. Work on the implementation of the procedures for the prevention of diseases and agricultural pests that affect palm trees. Spray the infected parts of the Palm with suitable insecticides, medicines and treatments. Also he supervises and follow up the plowing, collection of reap, fruits, packaging and other activities to be sub contracted seasonally.
The activities to be sub-contracted	▪ Plowing work ▪ Collecting of reap ▪ packaging ▪ transport and distribution

4.4 The Required Licenses

The following table shows the necessary licenses from the different authorities for the implementation of the project.

Table 21: licenses required for the project

	Authority
Farm Registration And Licensing	▪ Ministry of Industry and trade ▪ Ministry of Agriculture
Farm Establishment	▪ Jordan Valley Authority ▪ concerned municipality

4.5 Project Timetable

The following table shows duration for implementing the project which is estimated of 4 years. The production starts of the fourth year of the establishment of the farm as Follows:

Phase	First year (in months)												Second year	Third year	Fourth year
	1	2	3	4	5	6	7	8	9	10	11	12			
Studies															
The land purchase and registration															
Preparing the land and planting															
Employment and taking care of the planted trees															
Total Duration	4 years														

5. Financial Study

5.1 Financial Assumptions

The following table illustrates the financial assumptions of the project.

Table 22: The Financial Assumptions of the Project

Item	Assumption
Inflation Rate	3%
Financing Structure	Equity constitutes 75% of the investment and loans constitute 25%
Interest Rate	9%
cost of trees	JD 45 per a palm tree
Working Capital and expenses for 3 years	JD 156 thousand
Tax Rate	0%
The amount of fertilizer	6 kg per a palm tree annually
cost of a ton of fertilizer	JD 400
Water amount	1,200 liter per a palm tree annually
Cost of annual spraying	JD 2,000
Packaging and packing	10% of total revenues
Packing materials	3% of total revenues
Assets Depreciation Rate	4%-20% of the asset value
Annual Salaries Increase	10%
Staff Benefits	25% of salaries
Accounts Receivable	2 months
Inventory	JD 3,000 of materials annually
Accrued expenses	10% of costs

5.2 Investment Cost

The project's Investment cost is estimated at JD 750 thousand distributed among fixed assets of JD 540 thousand, working capital, cost of palm trees, and capitalizing expenses totaled of JD 210 thousand. The following table shows the project's Investment cost.

Table 23: the project's investment cost

Item	Value (in thousand JD)
Fixed assets	540
Cost of palm trees	54
Capitalizing expenses	96
Working capital	60
Total	750

5.3 Financing

The project will be financed with the shareholders by 75% which is estimated at about JD 562.7 thousand, while the other 25% of the project investment cost will be financed through bank loans of about JD 187.6 thousand.

The following table shows the financing structure for financing the project, where:

- The interest rate is 9%.
- The loan will be paid during 7 years.

Table 24: Project financing schedule

Item	Value (in thousand JD)	%
Equity	562.7	75%
Loan	187.6	25%
Total	750	100%

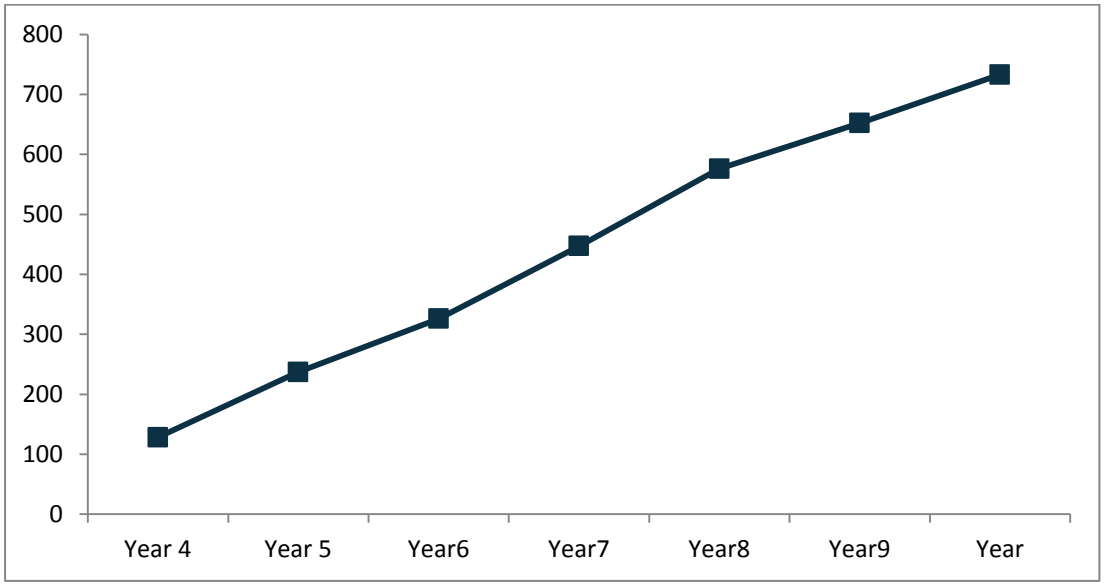
5.4 Revenues

The following table shows the total revenues of the project, where it is noted that there is no revenues in the first year because there is no production till the third year, as the revenues increased to reach up to JD 733 thousand in the tenth year.

Table 25: The Expected Revenues

Statement	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Area of land (thousand meter)	100	100	100	100	100	100	100	100	100	100
Number Of palm trees	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Production amount (kg/ tree)	-	-	-	25	45	60	80	100	110	120
Production amount (ton)	-	-	-	30	54	72	96	120	132	144
Selling price per ton	3,900	4,017	4,138	4,262	4,389	4,521	4,657	4,797	4,940	5,089
Total Revenues – Thousand JD	–	–	–	128	237	326	447	576	652	733

Figure 5: Total expected revenues



5.5 The Projected Costs

Operating Costs

The following table shows the project's operating costs according to the previous assumption.

Table 26: Operating Costs

Operating Costs (in thousand JD)										
Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Cost of fertilizer	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Water	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Spray	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Salaries	7.2	7.9	8.7	9.6	10.5	11.6	12.8	14.0	15.4	17.0
Staff Benefits	1.8	2.0	2.2	2.4	2.6	2.9	3.2	3.5	3.9	4.2
Depreciation	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8
Cost of packing and packaging	0.0	0.0	0.0	12.8	23.7	32.6	44.7	57.6	65.2	73.3
Packing materials	0.0	0.0	0.0	3.8	7.1	9.8	13.4	17.3	19.6	22.0
Total	38.1	39.0	40.0	57.7	73.1	85.9	103.1	121.4	133.1	145.6

Administrative Expenses

The following table shows the projected administrative expenses of the project.

Table 27: General and Administrative Expenses

General and Administrative Expenses (in thousand JD)										
Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Salaries	6.0	6.3	6.6	6.9	7.3	7.7	8.0	8.4	8.9	9.3
Staff Benefits	1.5	1.6	1.7	1.7	1.8	1.9	2.0	2.1	2.2	2.3
Staff Incentives	1.0	1.0	1.0	1.0	1.0	2.0	3.0	4.0	5.0	6.0
Stationery	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8
Professional Fees	3.0	3.2	3.3	3.5	3.6	3.8	4.0	4.2	4.4	4.7
Marketing Expenses	-	-	-	7.7	14.2	19.5	26.8	34.5	39.1	44.0
Other Expenses	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.5	1.6
Total	13.0	13.6	14.2	22.6	29.8	36.8	45.9	55.4	61.9	68.6

5.6 Projected Financial Statements

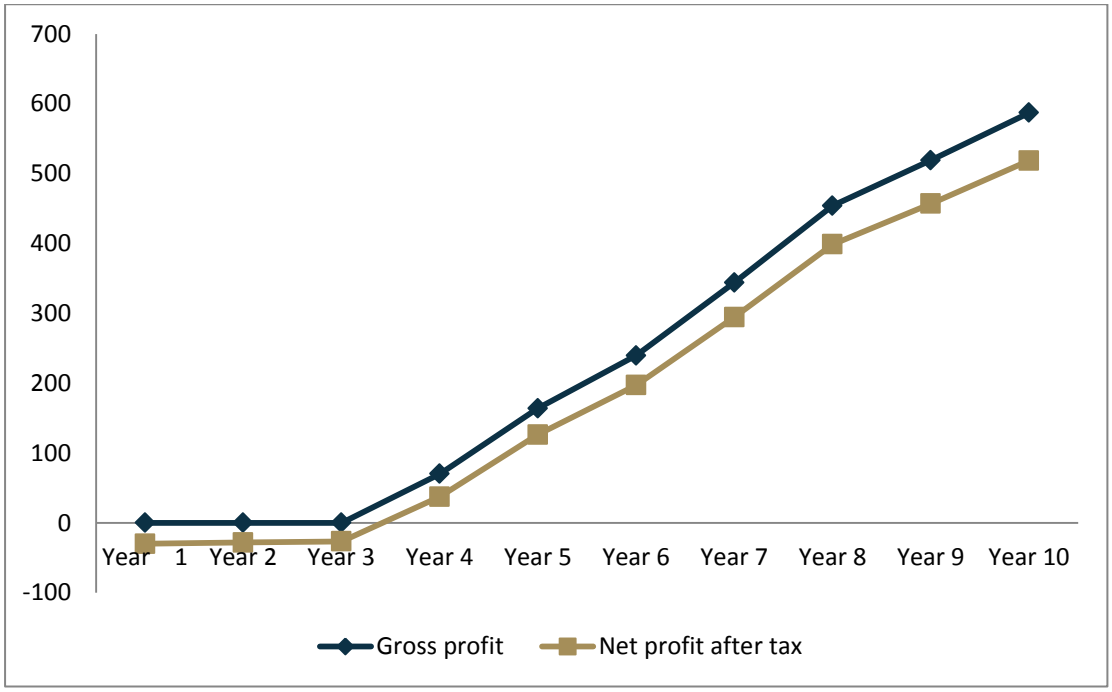
Income Statement

The following table shows the projected income statement of the project. It indicates that there is no profit in the first year, and then gross profit will increase to reach JD 587.2 thousand in the tenth year. It's worth to mention that the net profit before tax is equal to net profit after tax because there is no tax on this project. The net profit will increase to reach JD 518.6 thousand in the tenth year.

Table 28: The Projected Income Statement

Income Statement (in thousand JD)										
Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenues	-	-	-	127.8	237.0	325.5	447.1	575.6	652.1	732.8
Operating costs (cost of sales)	-	-	-	57.7	73.1	85.9	103.1	121.4	133.1	145.6
Gross profit	-	-	-	70.2	164.0	239.6	343.9	454.1	519.0	587.2
Administrative expenses	13.0	13.6	14.2	22.6	29.8	36.8	45.9	55.4	61.9	68.6
Net profit	(13.0)	(13.6)	(14.2)	47.6	134.2	202.8	298.0	398.7	457.1	518.6
financial expenses	16.9	14.6	12.4	10.1	7.9	5.6	3.4	-	-	-
Net profit before tax	(29.9)	(28.2)	(26.6)	37.5	126.3	197.2	294.6	398.7	457.1	518.6
Tax	-	-	-	-	-	-	-	-	-	-
Net profit after tax	(29.9)	(28.2)	(26.6)	37.5	126.3	197.2	294.6	398.7	457.1	518.6

Figure 6: Projected Income Statement



Projected Balance Sheet

The following table shows the projected balance sheet of the project during the ten years. It indicates that total assets will increase from JD 750 thousand in the year of incorporation to about JD 1,161 thousand in the tenth year. The Total liabilities will decrease from JD 163 thousand in the first year to about JD 15 thousand in the tenth year. The Shareholders' Equity will increase from JD 563 thousand in the year of incorporation to reach JD 1,146 thousand in the tenth year.

Table 29: Projected Balance Sheet

Projected Balance Sheet (in thousand JD)											
Item	Year of incorporation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Assets											
Cash	60	45	34	22	12	3	44	96	215	361	525
Receivables		-	-	-	21	39	54	74	96	108	122
Inventory		3	3	3	3	3	3	3	3	3	3
Other	-	-	-	-	3	5	7	9	12	13	15
Total Current Assets	60	48	36	25	39	50	107	182	325	485	664
Fixed Assets	690	690	690	690	690	715.33	715	715	715	715	715
Cumulative Depreciation	-	22	44	65	87	109	131	153	174	196	218
Pre- operating expenses	-										
Net Fixed Assets	690	669	647	625	603	606	585	563	541	519	497
Total Assets	750	716	683	650	642	656	692	744	866	1,004	1,161
Shareholders Equity and Liabilities											
Accrued Expenses and Payables		-	-	-	6	7	9	10	12	13	15
Long Term Loans	188	163	138	113	88	63	38	-	-	-	-
Total Liabilities		163	138	113	93	70	46	10	12	13	15
Shareholders Contributions	563	563	563	563	563	563	563	563	563	563	563
Retained Earnings		(9)	(17)	(25)	(14)	24	83	171	291	428	584
Shareholders' Equity	563	554	545	537	549	586	646	734	854	991	1,146
Shareholders Equity and Liabilities	750	716	683	650	642	656	692	744	866	1,004	1,161

Cash Flow Statement

The following table shows the projected cash flow statement of the project during the first ten years. It indicates that there is no cash flow from operation in the first year, which will increase to reach JD 527 thousand in the tenth year; while the Cash at the ending period will increase from JD 60 thousand in the year of incorporation to JD 525 thousand in the tenth year.

Table 30: The Expected Cash Flows Statement

Cash Flow Statement (in thousand JD)											
Statement	Year of incorporation	Year1	Year2	Year3	Year4	Year5	Year 6	Year 7	Year 8	Year 9	Year 10
Operation Activities											
Net Profit	–	(30)	(28)	(27)	37	126	197	295	399	457	519
Depreciation	–	22	22	22	22	22	22	22	22	22	22
Change In Working Capital	–	(3)	–	–	(18)	(19)	(15)	(21)	(22)	(13)	(14)
Cash Flow From Operation	–	(11)	(6)	(5)	41	129	204	296	398	466	527
Investing Activities											
Fixed Assets	(690)	–	–	–	–	(25)	–	–	–	–	–
Cash From Investing Activities	(690)	–	–	–	–	(25)	–	–	–	–	–
Financing Activities											
Capital (Equity)	563	–									
Loan	188	(25)	(25)	(25)	(25)	(25)	(25)	(38)	–	–	–
Dividends		21	20	19	(26)	(88)	(138)	(206)	(279)	(320)	(363)
Cash Flow From Financing Activities	750	(4)	(5)	(6)	(51)	(113)	(163)	(244)	(279)	(320)	(363)
Net Cash Flow	60	(15)	(12)	(11)	(10)	(9)	41	52	119	146	164
Cash At The Beginning Period	0	60	45	34	22	12	3	44	96	215	361
Capital (Equity)	60	45	34	22	12	3	44	96	215	361	525

5.7 Financial, Economic and Social Analysis

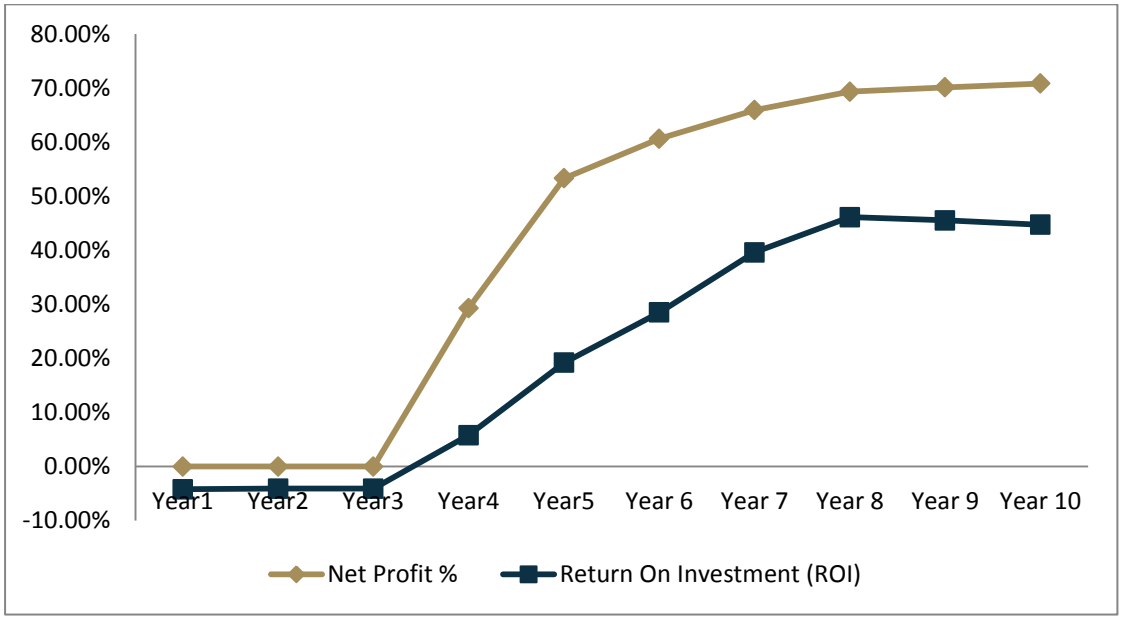
Financial Analysis

The following table shows the financial analysis of the project. It indicates that the net profit ratio will increase from 29.3% in the fourth year to 70.8% in the tenth year, and the return on investment will increase from 5.8% in the fourth year to 44.7% in the tenth year.

Table 31: Financial Analysis

Financial Analysis (In Thousand JD)										
Statement	Year1	Year2	Year3	Year4	Year5	Year 6	Year 7	Year 8	Year 9	Year 10
Assets	716	683	650	642	656	692	744	866	1,004	1,161
Revenues	-	-	-	128	237	326	447	576	652	733
Profits	(30)	(28)	(27)	37	126	197	295	399	457	519
Capital (Equity)	563	563	563	563	563	563	563	563	563	563
Net Profit %	0.0%	0.0%	0.0%	29.3%	53.3%	60.6%	65.9%	69.3%	70.1%	70.8%
Return On Investment (ROI)	-4.2%	-4.1%	-4.1%	5.8%	19.2%	28.5%	39.6%	46.1%	45.5%	44.7%
Return On Capital (ROC)	-5.3%	-5.0%	-4.7%	6.7%	22.4%	35.0%	52.4%	70.9%	81.2%	92.2%
Net Profit On Revenues	0.0%	0.0%	0.0%	29.3%	53.3%	60.6%	65.9%	69.3%	70.1%	70.8%
Assets Turnover (Time)	0.0%	0.0%	0.0%	0.2	0.36	0.47	0.6	0.67	0.65	0.63

Figure 7: The Financial Analysis



Economic Analysis

The following table shows the economic analysis of the project during the first five years, we conclude that:

- The Internal rate of return is 20.1%. It exceeded five times the return on assets, which means the economic feasibility of the project
- The present value of the project reached about JD 983 thousand. It exceeds the net present value with JD 563 thousand, which means the economic feasibility of the project.
- The profitability index of the project reached 1.75 times, which means that the expected value of the project will increase by two times the investment value, which proves that the project is feasible.
- The project payback period is 7.3 years.

Table 32: the Economic Analysis

Economic Analysis (in Thousand JD)											
Statement	Year of incorporation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Net cash flow from operating and investing activities	(563)	(36)	(31)	(30)	16	104	179	258	398	466	527
terminal value											1,146
Net Cash flow	(563)	(36)	(31)	(30)	16	104	179	258	398	466	1,673
Internal Rate of Return (IRR)	20.1%										
present Value	983										
Net present value	420										
Profitability Index (Time)	1.75										
Payback period (Year)	7.3										

Social Analysis

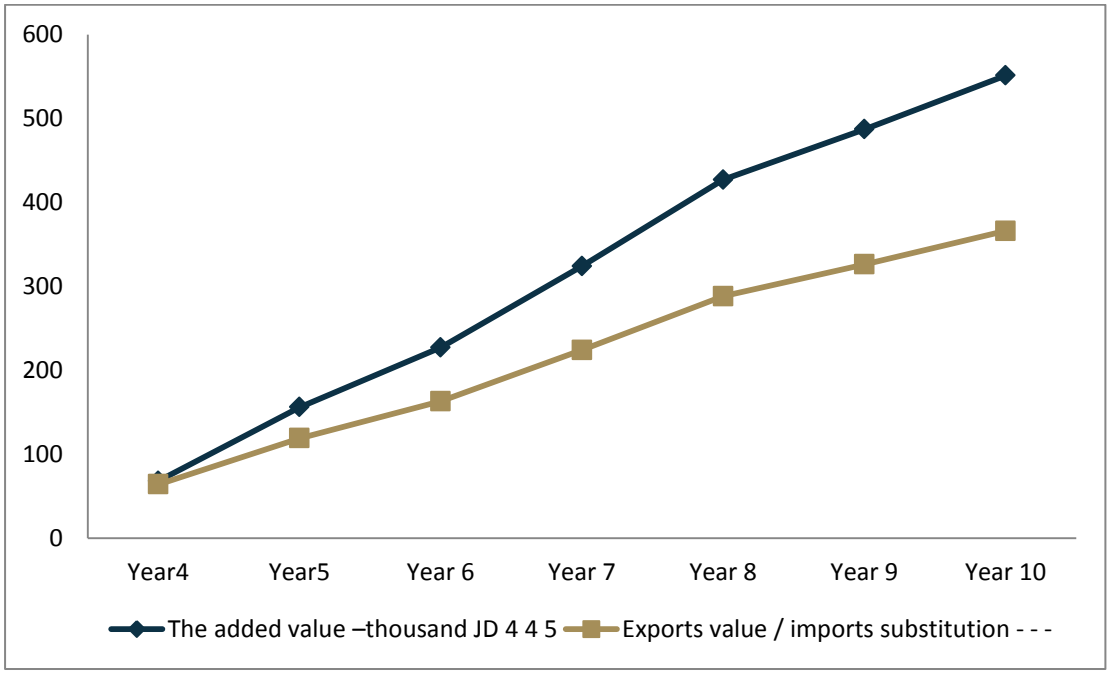
The following table shows the social analysis of the project. It is noticed that the number of staff required for the project is 3 employees in the total period of the project. The number of Jordanian employees is one.

The added value of the project will also increase from JD 4 thousand in the first year to JD 551 thousand in the tenth year.

Table 33: the Social Analysis of the Project

Social Analysis										
Statement	Year1	Year2	Year3	Year4	Year5	Year 6	Year 7	Year 8	Year 9	Year 10
Number of Employees	3	3	3	3	3	3	3	3	4	4
Jordanian employees	1	1	1	1	1	1	1	1	1	1
The added value –thousand JD	4	4	5	68	156	227	324	427	487	551
Income tax –thousand JD	–	–	–	–	–	–	–	–	–	–
sales tax value –thousand JD	–	–	–	–	–	–	–	–	–	–
Exports value / imports substitution	–	–	–	64	119	163	224	288	326	366

Figure 8: The Social Analysis



6. Risk and Sensitivity Analysis

6.1 Risk Analysis

The following table shows the risk matrix analysis that may face the project.

Table 34: Project Risk Matrix

Risks	Type of Risks	Risk Assessment
Financial Risks	▪ **Credit Risk** Credit risk represents the risk of the company's financial loss as a result of the customer's default of the contractual obligation or that of the party dealing with the company through a financial instrument. These risks are mainly caused by trade receivables and others. ▪ **Liquidity Risk** Liquidity risk is the risk resulting from the company's inability to meet its financial obligations at time. The company's liquidity management is to ensure as much as possible that the company always maintain enough liquidity to meet its obligations as they become due and payable in normal and emergency conditions without incurring unacceptable losses or risks that affect the company's reputation. ▪ **risk of currency fluctuation** Currency risk is the risk of the fluctuation of the value of financial instrument, due to fluctuations in foreign currency exchange rates.	▪ The financial risks that may face the company are moderate, because there is accounts receivables amounted to two months ▪ There is no risk of currency exchange, because the company purchases by local currency, and its sales in the specialized country market ▪ There is no risk of inflation because the company's pricing is based on a periodic basis

Risks	Type of Risks	Risk Assessment
	▪ **inflation risk** It is the risk associated with the possibility that the inflation or the rise in the cost of living might lead to the decrease the real value of the investment.	
Business risk (sector risk)	▪ **Strategic Risk** It is the risk resulting from taking bad decisions by the company's management, or implementing the decisions in a wrong way, or not taking the decisions at the right time; which leads to losses or causes loss of alternative opportunities. ▪ **Legal and Regulatory Risks** These risks are reflected as a result of non-compliance with laws, guidelines and instructions governing the work. Legal risks are caused by the company's break of the laws governing the work in the state in which the company operates. While regulatory risks arise from the company's violation of laws and standards issued by the regulatory authorities. ▪ **Reputation Risk** Reputation risk arises from influential negative public views which result in great losses of customers or money. It includes the actions of the company's management or its employees which project a negative image of the	▪ The risks are considered very low before the company's establishment, because of getting the approval of the official authorities such as municipality and health ▪ Reputational risk is moderate ▪ Market risk in the short term will be moderate because of the competition from other companies in the governorate

Risks	Type of Risks	Risk Assessment
	company, its performance and its relationships with customers and other stakeholders. Reputation risk also results from circulating rumors about the company and its activities. ▪ **Competition Risk** Competition risk results from domestic and external competitors and reduces sales and profits.	
Operational Risk	Operational risk involves losses resulting from the failure of internal operations, human resources and systems. It includes: ▪ **IT Risks** They are losses arising from downtime or systems failure due to the infrastructure, information technology, or the lack of systems, and any failure or malfunction in the systems. They include: the crash of computer systems, breakdowns in communication systems, programming errors, computer viruses and opportunities losses due to breakdown. ▪ **Human Resources Risk** Losses caused by employees or related to them (intentionally or unintentionally). It also includes acts that are intended as methods of cheating, abusing property or	▪ Operational risks are moderate, which related to the Irrigation Water ▪ Marketing risks ▪ The risk of palm diseases ▪ IT risks is very low ▪ Human resources risks is very low

Risks	Type of Risks	Risk Assessment
	circumvent the law, regulations or company policy by officials or employees, as well as losses arising from the relationship with the customer, shareholders, regulators and any third party.	
State Risk	State Risk includes politicians' interference, civil unrest, wars, financial and monetary policies and high level of debts.	▪ State Risk is considered to be low, due to security and political stability; international reports indicate that State Risk is low both in medium and long terms

6.2 Sensitivity Analysis

First: Increase of Investment Cost By 10%

The following table shows the results of the sensitivity analysis when investment cost increases by 10%.

Table 35: Investment Increase by 10%

Index	Base	Impact	Change
Internal Rate of Return (IRR)	20.1%	18.8%	1.3%
The Present Value at a discount rate of 13% (in Thousand JD)	983	983.1	-0.1
Net Present Value at a discount rate of 13% (in Thousand JD)	420	364.1	55.9
Profitability Index (Time)	1.7	1.6	0.1
Payback period (Year)	7.3	7.5	-0.2
The Net Profit Ratio – an average of 10 years	41.9%	41.6%	0.3%
Return on Investment - an average of 10 years	21.7%	20.2%	1.5%
Return on Capital – an average of 10 years	34.6%	31.2%	3.4%
Net Profit On Revenues - an average of 10 years	41.9%	41.6%	0.3%
Assets Turnover (Time) – an average of 10 years	0.4	0.3	0.1
The added value - an average of 10 years (in thousand JD)	225	225.4	-0.4
income tax - an average of 10 (in thousand JD)	0	0.0	0.0
sales tax - an average of 10 years (in thousand JD)	0	0.0	0.0

The above analysis refers to the feasibility of investment in the project, in light of the high cost of the total investment of the project, which increased by 10%. It is noted that:

- The internal rate of return reaches 18.8%, which is considered high for investment purposes
- The new payback period is 7.5 years, and it is reasonable for recovery purposes
- The return on capital is 31.2%, which is suitable for investment purposes

Second: Reducing Revenues by 10%

The following table shows the results of the sensitivity analysis when reducing revenues by 10%.

Table 36: Reducing Revenues 10%

Index	Base	Impact	Change
Internal Rate of Return (IRR)	%20.1	18.4%	1.7%
The Present Value at a discount rate of 13% (in Thousand JD)	983	869.1	113.9
Net Present Value at a discount rate of 13% (in Thousand JD)	420	306.4	113.6
Profitability Index (Time)	1.7	1.5	0.2
Payback period (Year)	7.3	7.5	0.2−
The Net Profit Ratio – an average of 10 years	%41.9	40.3%	1.6%
Return on Investment - an average of 10 years	%21.7	19.8%	1.9%
Return on Capital – an average of 10 years	%34.6	30.1%	4.5%
Net Profit On Revenues - an average of 10 years	%41.9	40.3%	1.6%
Assets Turnover (Time) – an average of 10 years	0.4	0.3	0.1
The added value - an average of 10 years (in thousand JD)	225	200.3	24.7
income tax - an average of 10 (in thousand JD)	0	0	0
sales tax - an average of 10 years (in thousand JD)	0	0	0

The above analysis shows the low sensitivity of the project in case of reducing the revenues or demand by 10%. It indicates that:

- The internal rate of return is 18.4%, which is considered high for investment purposes
- The new payback period is 7.5 years, and it is reasonable for recovery purposes
- The return on capital reaches 30.1%, which is suitable for investment purposes

Third: Increasing the Operating Costs by 10%

The following table shows the results of the sensitivity analysis when increasing the operating costs by 10%.

Table 37: Increasing the Operating Costs by 10%

Index	Base	Impact	Change
Internal Rate of Return (IRR)	%20.1	19.6%	0.5%
The Present Value at a discount rate of 13% (in Thousand JD)	983	948.1	34.9
Net Present Value at a discount rate of 13% (in Thousand JD)	420	385.3	34.7
Profitability Index (Time)	1.7	1.7	0.0
Payback period (Year)	7.3	7.4	-0.1
The Net Profit Ratio – an average of 10 years	%41.9	40.1%	1.8%
Return on Investment - an average of 10 years	%21.7	21.1%	0.6%
Return on Capital – an average of 10 years	%34.6	33.3%	1.3%
Net Profit On Revenues - an average of 10 years	%41.9	40.1%	1.8%
Assets Turnover (Time) – an average of 10 years	0.4	0.4	0.0
The added value - an average of 10 years (in thousand JD)	225	218.2	6.8
income tax - an average of 10 (in thousand JD)	0	0.0	0.0
sales tax - an average of 10 years (in thousand JD)	0	0.0	0.0

The above analysis shows the feasibility of the project in light of increasing the operating costs of the project by 10%. It indicates that:

- The internal rate of return is 19.6%, which is considered high for investment purposes
- The new payback period is 7.4 years, and it is reasonable for recovery purposes
- The return on capital is 33.3%, which is suitable for investment purposes