



**Pre-Feasibility Study**  
**Establishing a Factory for Converting**  
**Leaves and Peels of Plants into Capsules**  
**Madaba**

April, 2017



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## Madaba Governorate



## 1. Executive Summary

This study aims at identifying the pre-feasibility of a project for establishing a factory to produce capsules extracted from the leaves of the blessed olive tree and pomegranate peel, which were proven by the researches and various scientific studies to be important, given their medical properties. Then these capsules will be filled and packaged as therapeutic and preventive food supplements. The project will be established in Madaba Governorate, which is about 33 km away from Amman. It is a fertile agricultural area characterized by its agricultural activity and adjacent to a number of the Kingdom's governorates which are characterized by having a huge number of olive trees, pomegranates and other agricultural sector's products. The following table illustrates the Initial Indicators of the Project.

**Table 1: Initial Indicators of the Project**

<b>Project Name</b>	Establishing a factory for converting leaves and peels of plants into capsules
<b>Sector</b>	Industrial Sector
<b>Governorate</b>	Madaba
<b>Region</b>	Industrial Area - Lob & Mleeh
<b>Products/Services</b>	Capsules extracted from leaves of olive trees and pomegranate peels, which can be used as a form of therapeutic and preventive food supplements.
<b>Project Description</b>	<p>The project is a factory producing capsules made from olive leaves and pomegranate peels in Madaba governorate, which is a fertile agricultural area about 33 km away from Amman. Therefore, Madaba governorate is characterized by being close to Amman and Queen Alia International Airport, the matter which contributes to the ease of importing the raw materials, exporting the product and competing in global markets.</p> <p>The project is based on modernizing and developing the industry in Madaba Governorate, as it will be the first of its kind in Jordan, specialized in producing capsules out of olive leaves and pomegranate peels. This project will contribute to the integration between agricultural and industrial sectors in the Governorate.</p> <p>The manufacturing process is carried out by reaping or fetching olive leaves or pomegranate peels, weighing them, naturally drying them and preparing them for storage. Then, sterilizing and grinding of the olive leaves and pomegranate peels and mixing them in an alcoholic solution will be conducted, which will the undergo to extract the required olive leaf and pomegranate peel essence, re-distilling, sterilizing and drying processes to ensure that they are free of alcohol. The powder of the extracts are then packed into capsules</p>

	using special machines, packaged wrapped, and finally stored in special warehouses until marketed. In addition, laboratory tests and quality control processes are conducted.
<b>Target Market</b>	<ul style="list-style-type: none"> <li>• Local Market</li> <li>• Global Markets</li> </ul>
<b>Investment Cost</b>	The project's investment cost is about JD 2.6 million.
<b>The Average Return On Investment</b>	The average return on investment over ten years is about 19.3%
<b>Internal Rate Of Return</b>	The internal rate of return for the project is about 23.6%
<b>Average Added Value Of The Project</b>	The average value added of the project over ten years is about JD 1.3 million.
<b>Risk Assessment</b>	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.
<b>The Project Justifications</b>	<ul style="list-style-type: none"> <li>• Developing and modernizing the industrial sector, particularly food supplements.</li> <li>• The spread of olive trees in Madaba Governorate satisfying the requirements of the project, and the spread of pomegranate trees in the neighboring governorates.</li> <li>• The spread of olive and pomegranate cultivation in Jordan in general, and in the governorates of Irbid, Jerash, Ajloun and Balqa in particular.</li> <li>• Manpower employment.</li> <li>• Enhancing integration between the agriculture and industrial sectors</li> <li>• Creating new products and an effective industry in Madaba</li> </ul>
<b>Partners/Stakeholders</b>	<ul style="list-style-type: none"> <li>• Ministry of Industry and Trade</li> <li>• Jordan Food and Drug Administration (JFDA)</li> <li>• The Municipality</li> </ul>

## 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, Mafrq, 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<sup>2</sup>, 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 km<sup>2</sup>, 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 1: Number of population and population density in the Kingdom for 2015**

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

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.

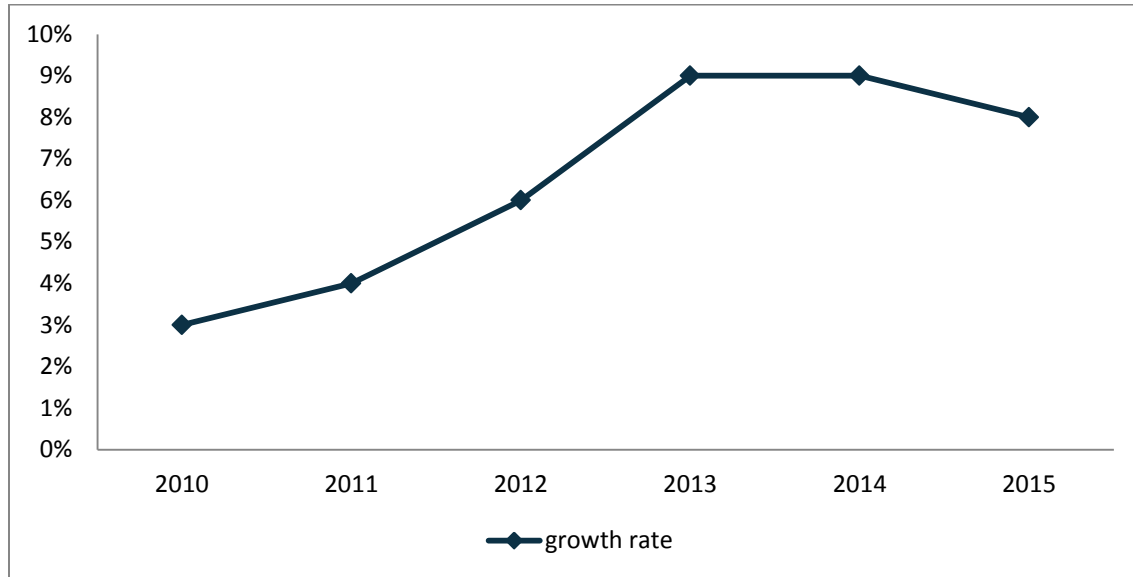
The unemployment rate among Jordanians also witnessed a rise by 1.1 percentage to reach to 13%, due to the structural imbalances that the labor market is suffering from and the acquisition of the low-paid foreign workers on a large number of new jobs in the economy, according to the Central Bank of Jordan.

**Table 2: 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 <sup>1</sup>**

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%).

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<sup>1</sup> The Central Bank of Jordan

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 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 3: main economic indicators 2011 to 2015 in millions of dinars**

	2011	2012	2013	2014	2015
<b>Population (millions)</b>	6.993	7.427	8.114	8.804	9.532
<b>Unemployment rate</b>	12.9	12.2	12.6	11.9	13.0
<b>Production and Prices</b>					
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 current prices (%)	4.7	-0.2	8.6	3.1	-2.4
Change in the index of consumer prices	4.2	4.5	4.8	2.9	-0.9

	2011	2012	2013	2014	2015
(%)					
The change in the GDP deflator (%)	6.4	4.5	5.6	3.4	2.3
<b>Money and Banking</b>					
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 <sup>(1)</sup>	-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	-	-	-
<b>Public Finance</b>					
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 <sup>(2)</sup>	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
<b>Foreign Trade and Balance of Payments</b>					
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
Commodity exports	5,684.5	5,599.5	5,617.9	5,953.6	5,558.3
Imports of goods (FOB) <sup>(3)</sup>	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 4: 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 5: 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 involves the establishment of a factory for producing capsules from olive leaves and pomegranate peels. The project will be located in Madaba Governorate, which is a fertile agricultural area and about 33 km away from Amman. Madaba Governorate is characterized by its proximity to Amman and Queen Alia International Airport; an advantage which contributes to the ease of importing the raw materials, exporting the product to the global market and competing in global markets.

The project is based on introducing and developing this industry in Madaba Governorate. It will be the first of its kind in Jordan to be specialized in producing capsules out of olive leaves and pomegranate peels. This project will contribute to the integration of the agriculture and industrial sectors in the governorate.

The manufacturing process is carried out by cutting or bringing olive leaves or pomegranate peels, weighing them, drying them naturally and preparing them for storage, and then sterilizing and grinding the olive leaves and pomegranate peels and mixing them in an alcoholic solution to extract the required olive leaf and pomegranate peel extract, then re-distilling, sterilizing and drying the extracts to ensure that they are free of alcohol. The extracts are then packed into capsules by special machines, after that they are packaged and wrapped, in addition to laboratory tests, quality control and finally storing the products in warehouses until marketed. The following are the medical and preventive benefits of capsules made from olive leaves and pomegranate peel:

#### **Uses of olive leaf capsules:**

There are several benefits of olive leaves which can be summarized as follows:

- Strengthening the immune system of the body in general and purifying the body from toxins.
- Treatment of high blood pressure (hypertension).
- Improving the blood circulation and treatment of atherosclerosis, high cholesterol and high blood lipid levels.
- Fighting inflammation, viruses and various fungi such as laryngitis, pneumonia, gastroenteritis, oral fungus and Candida.
- Strengthening the body and reducing the symptoms of chemotherapy for cancer patients.
- Treatment of memory weakness, Alzheimer's and brain disorders.
- Treatment of arthritis and swelling of limbs associated with arthritis.
- Gastrointestinal cleansing, treatment of ulcerative colon, nervous colon and constipation.



- Treatment of various liver disorders including fatty liver, treatment of Parkinson's disease and gallbladder disorders
- Preventing osteoporosis and for building Orthopedic restoration.
- Treatment of urinary infections, inflammation of sensitive areas, vaginal discharge and herpes in the genitals and mouth.
- Treatment of allergies, particularly spring allergy and treatment of vitamin D deficiency.
- Treatment of respiratory infections, the upper part in particular, and treatment of hyperthyroidism, mental disorders and postpartum depression
- Treatment of flatulence and abdominal stiffness
- Treatment of AIDS and reducing its dangers and harms.
- Treatment of certain skin diseases, particularly psoriasis, and purifying and cleansing skin.
- Protecting against X-ray damages and other radiations.
- Stimulates diuresis.
- Treatment of high temperature.
- Treatment of sleep disorders for adults.
- Reducing smoking damages.
- Treatment of malaria and polio (within a therapeutic program which includes other herbs)

#### **Uses of Pomegranate Peel Capsules:**

There are several benefits of pomegranate peel which can be summarized as follows:

- Treatment of gastritis and gastrointestinal inflammation and contribute to the treatment of ulcerative colitis and Crohn's disease.
- Treatment of gastric cancer, colorectal cancer, bowel cancer, gastrointestinal cancer, and treatment of various other cancers such as breast cancer.
- Treatment of excess stomach acidity or so-called GERD.
- Treatment of stomach mouth disorders.
- Treatment of stomach germ.
- Improving digestion, treatment of and hemorrhoids and relieving hemorrhoids swelling.
- Protecting against various heart diseases.
- Treatment of Parkinson's disease, reduction of encephalitis and protection against Alzheimer's disease.
- Treatment of acne, pimples, rashes and prevent signs of aging.
- Strengthening the immune system and preventing winter diseases, particularly the influenza.
- Improving dental health, preventing bad breath and treatment of gingivitis and oral ulcers.
- Treatment of sore throat and jaundice.
- Treatment of incurable and festering wounds.
- Treatment of osteoporosis.
- Treatment of hair loss and prevention of dandruff.

### **3.2 Expected Products and Services**

The project focuses on the following main products:

- Capsules extracted from olive leaves.
- Capsules extracted from pomegranate peel.

It is also possible to expand the project subsequently to include the production of many other capsules which contain seeds and powders of various plants, including but not limited to capsules made from sage leaves, cinnamon, ring seeds, guava, cumin and ginger roots.

#### **Overview of olive leaves and pomegranate peel extracts**

##### **Olive Leaves**

The original home of olives is Asia, particularly Syria, Lebanon, Jordan, Palestine and the Mediterranean basin. The olive tree is characterized by being evergreen throughout the year. There are also many known uses of olive fruits, such as using them in many food products or pressing them to extract olive oil. However, the project focuses on processing olive leaves in order to use its extracts in capsules which to be used as important preventive and curative food supplements.

Olive leaves contain compounds called Oleuropein acid, natural compounds consisting of linoleic acid molecule associated with the glucose molecule. The linoleic acid combines with calcium in the body resulting into calcium alenolite compound, the active substance which inhibits bacteria and viruses, including HIV, among the features of that compound is that it prevents the oxidation of light cholesterol and this feature gives it the strength to prevent the formation of dangerous platelets in blood vessels, thereby protecting against cardiovascular disease.

The results of USA studies revealed that the olive leaves contain mineral salts at about 5% of their weight, including calcium, phosphorus, magnesium, silicon, sulfur, potassium, sodium, iron, chlorine and organic acids. Medical observations have also proven that olive leaves have antiseptic, tonic and sedative effects. Olive leaves are also different from other medical herbs as it has no side effects or toxicity complications, hence there is no fear to use them frequently.

### Pomegranate Peel

Pomegranate peel, which accounts for (26% - 30%) of the weight of the fruit, is characterized by containing large quantities of antioxidants, such as Phenolic compounds and other Acids, as well as compounds and other acids concentrated in pomegranate peel and pomegranate juice which account for about 22% of the antioxidants found in this fruit.

Moreover, Pomegranate peels contain vitamin (C) which is necessary to maintain body health and build body mass through the formation of essential proteins. It is rich in antioxidants that keep and protect the skin from bacteria and other infections. Pomegranate peels also rebalance the pH of the skin, as they contain Yalighatsh acid which helps maintain skin moisture and keeping it smooth and fresh. Antioxidants also help to cure heart disease, reduce the level of harmful cholesterol in the blood, reduce stress and lower blood pressure also.

### Overview about Olive and Pomegranate Cultivation Sector

The annual statistical report of the Ministry of Agriculture indicated an active olive production and planting in the Kingdom, especially in the governorates of Irbid, Jerash, Balqa and Ajloun, which will be the main source of raw materials used in the production process. The following table shows the areas, production and numbers of olive trees in the most important producing governorates in the year 2015.

**Table 6: Areas, production and numbers of olive trees in the most important producing governorates in the year 2015**

Item	Amman	Madaba	Irbid	Balqa	Jerash	Ajloun	Other	Total of Kingdom
Total Olive Area (Dunums)	91720	67265	292427	110625	110625	77981	243749	994654
Percentage of Governorate to Kingdom (Dunum)	9%	7%	29%	11%	11%	8%	25%	100%
Total olive production (tons)	25463	5380	71404	33312	15424	30398	81950	263331
Percentage of Governorate to Kingdom (tons)	10%	2%	27%	13%	6%	12%	31%	100%
Number of olive trees	4055	13040	255771	18015	1740	6140	116901	415662
Percentage of Governorate to Kingdom	1%	3.10%	61.50%	4.30%	0.40%	1.50%	28.10%	100%

Source: Ministry of Agriculture, 2015 Annual Statistical Report.

The following table shows the areas and production of olive types in Madaba Governorate in 2015.

**Table 7: Areas and Olive Production in Madaba Governorate, 2015**

	Madaba	Kingdom	Governorate ratio to the kingdom
Fruitful irrigated olive area (dunums)	6910	176118	4%
Fruitful non-irrigated olive area (dunums)	44015	677372	6%
Fruitless irrigated olive area (dunums)	1060	15082	7%
Fruitless non-irrigated olive area (dunums)	15280	134917	11%
Total irrigated olive area (dunums)	7970	154809	5%
Total non-irrigated olive area (dunums)	59295	641132	9%
Fruitful irrigated olive production (tons)	1323	94450	1%
Fruitful non-irrigated olive production (dunums)	4057	168880	2%
Total fruitless olive area (dunums)	16340	149914	11%
Total fruitful olive area (dunums)	50925	844740	6%
Total olive area (dunums)	67265	994654	7%
Total olive production (tons)	5380	263331	2%
Olive production to be pressed (tons)	4640	171911	3%
Olive Production to be pickled (Tons)	740	91420	1%
Virgin Olive Oil Production (Tons)	802	45996	2%

Source: Ministry of Agriculture, 2015 Annual Statistical Report.

In respect of the pomegranate cultivation, the annual statistical report of the Ministry of Agriculture indicates that the increase in pomegranate cultivation and production activity in the governorates of Irbid, Balqa, Mafraq and Ajloun as well as the decrease in pomegranate cultivation and production in Madaba governorate. Therefore, the raw materials of pomegranate peels will be supplied from other governorates of the Kingdom or through importing, The following table shows the areas, production, numbers and trees of pomegranate in the most prominent governorates of the Kingdom in 2015.

**Table 8: Area and production of pomegranate trees in the Kingdom in 2015**

Item	Irbid	Balqa	Mafraq	Tafileh	Ajloun	Other	Total kingdom
Total pomegranate area (dunums)	2978	395	710	385	879	1856	7203
Percentage of Governorate to Kingdom (dunums)	41%	5%	10%	5%	12%	26%	100%
Total pomegranate production (tons)	7009	1940	752	300	1394	749	12144
Percentage of Governorate to Kingdom (tons)	58%	16%	6%	2%	11%	6%	100%

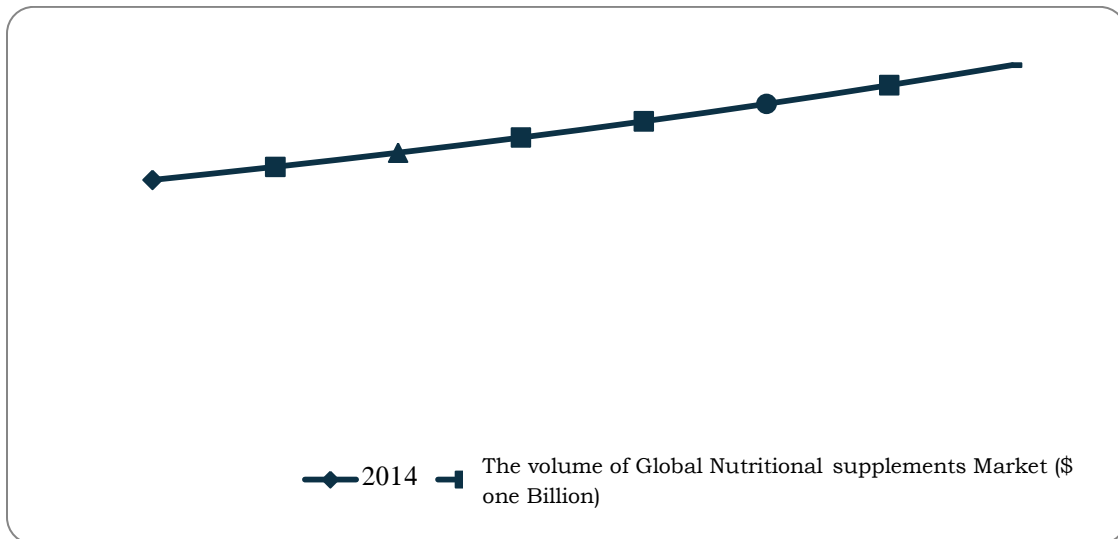
Source: Ministry of Agriculture, 2015 Annual Statistical Report.

### 3.3 Analysis of Market Size

#### Global Nutritional Supplements Market

The market of olive leaves capsules and pomegranate peel capsules will be analyzed depending on the Nutritional supplements Market as these capsules are used as nutritional supplements. The global market volume for food supplements as a whole reached US\$ 166 billion in 2014, according to a report issued by "Transparency Market Research", which is expected to grow at an annual growth rate of 7.3% to reach up to US\$ 279 billion by 2021.

**Figure 3: The growth rate of Global Nutritional supplements Market for the period (2021-2014).**



Source: Transparency Market Research

The results of the latest report of global industry analysts indicate that European markets are the largest Vegetarian supplements markets, followed by the Japan and Asian markets. The growth rate of the Vegetarian supplements market in Asia is estimated at about 10.5%, which is the largest growth rate in the world. The demand volume for Vegetarian nutritional supplements products varied and based on several factors, including consumer awareness of the importance of these supplements and its availability. The largest number of consumers of these products is females because they are always keen on preventive health products and all that is related to physical health, fitness, nutrition and increase their health awareness more than males. It is expected that the global herbal and vegetarian nutritional supplements market volume reach US- \$ 107 billion in 2017. The following tables show the volume of exports and imports of the major world countries for nutritional supplements products in general and of all types.

**Table 9: World imports of nutritional supplements for the year 2015**

Importing Country	Quantity (tons)
USA	433919
Britain	359462
Germany	328543
Canada	267491
China	168783
Netherlands	310166
Saudi Arabia	142289
Japan	413967
France	211280
Spain	204452
Italy	130111
Norway	414835
Other	69918734
<b>Total</b>	<b>73304032</b>

Source: Trade Map, International Statistics 2015 (Trade Map)

**Table 10: World exports of nutritional supplements for 2015**

Exporting Country	Quantity (tons)
USA	845609
Netherlands	596215
Germany	649215
Britain	193853
France	321028
Singapore	150407
China	414646
Thailand	560730
Denmark	210842
Belgium	277778
Italia	213774
Poland	182528
Malaysia	212750
Korea	194454
Other	2303132

<b>Total</b>	<b>7326961</b>
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Source: Trade Map, International Statistics 2015 (Trade Map)

### Local Nutritional Supplements Market

The local market of olive leaves capsules and pomegranate capsules is going to be analyzed through showing the quantities and values of imports related to all nutritional supplements in the kingdom as there are no such factories or any source for producing this kind of capsules in the kingdom. The following tables show the kingdom exports and imports of the most important nutritional supplements productions and the most important countries which import from and export to the kingdom in 2015.

**Table 11: the kingdom imports and exports of nutritional supplements in 2015**

Category description	Imports Value (thousand JD)	Imports quantity ( tons)	National exports value (thousand JD)	National Exports quantity ( ton)	Re-export value (thousand JD)	Re-export quantity ( tons)
Nutritional formulas prepared only as nourishments for special medical conditions	930	78	0	0	0	0
Nutritional supplements containing vitamins or mineral salts, which are prepared for selling as medicines for maintaining health.	14,223	796	946	100	3235	159
Others nutritional formulas except ones exported from factories as production inputs	20,289	9383	32594	26580	4006	3510
Homogeneous compound nutritional formulas except ones exported from factories as production inputs	278	127	255	135	116	57
Vitamins of various sorts and derivatives.	3967	630	0	0	4	0
Provitamins and vitamins, natural or constructively produced (Including natural concentrates) and their mainly used derivatives as mixed or non vitamins with each other even if in solutions	941	109	0	0	0	0
Other	76,681	18,223	23,515	18,260	461	147
<b>Total</b>	<b>117,309</b>	<b>29,346</b>	<b>57,310</b>	<b>45,075</b>	<b>7,822</b>	<b>3,873</b>

Source: Department of statistics, foreign trade, 2015

The following tables show the kingdom imports and exports of nutritional supplements and the most important countries which are dealt with in nutritional supplements field.

**Table 12: Jordan imports of nutritional supplements in 2015**

Exporting Country	Quantity ( ton)	Percent (%)
Saudi Arabia	7348	25%
USA	3086	11%
Netherlands	2097	7%
Britain	1117	4%
Belgium	1096	4%
U.A.E	1297	4%
Lebanon	1275	4%
Turkey	1122	4%
Egypt	892	3%
Italy	908	3%
China	912	3%
Others	8196	28%
<b>Total</b>	<b>29346</b>	<b>100%</b>

Source: Trade map, international statistics, 2015

**Table 13: Jordan exports of nutritional supplements in 2015**

Importing Country	Quantity ( ton)	Percent (%)
Iraq	15863	32%
Saudi Arabia	6799	14%
Syria	12951	26%
Palestine	2077	4%
U.A.E	1300	3%
Kuwait	935	2%
German	1062	2%
Russian Federation	753	2%
Qatar	556	1%
Others	6652	14%
<b>Total</b>	<b>48948</b>	<b>100%</b>

Source: Trade map, international statistics, 2015



### Overview of Key Competitors

As mentioned earlier, the local market does not have any competitors in the field of olive leaves and pomegranate peels capsules production, as this kind of nutritional supplements is not produced in Jordan, but there is a number of factories which produce this kind of capsules in the neighboring countries such as Palestine. The following is some information about those factories.

<b>Company Name</b>	<b>Al-Hikma hospital</b>
<b>Location</b>	Al-Hikma St.- Aurora, Palestine
<b>General Description</b>	Al- Hikma hospital consists of a team of specialists who work in natural therapy of large number of different diseases through transforming all of the plants' seeds, leaves, powders, peels, roots, and blooms to capsules used as preventive and therapeutic nutritional supplements. Treatment operation is performed in Al-Hikma hospital through special and different treatment methods linking the accurate diagnostic of disease to medical examinations with dependence on scientific researches in herbs field.
<b>Main products</b>	<ul style="list-style-type: none"> <li>– Capsules extracted from large number of plants leaves such as Olive, Morigna, and Genco leaves.</li> <li>– Capsules extracted from weeds and grasses such as Nettle, Alchemilla Vulgaris, and Purple coneflower.</li> <li>– Capsules extracted from blooms such as loin teeth and meadows clover.</li> <li>– Capsules extracted from plants seeds and powders such as cumin, fennel and celery.</li> <li>– Capsules extracted from plants peels like pomegranate peel.</li> <li>– Capsules extracted from plants veins like licorice</li> <li>– Capsules extracted from plants roots like ginger roots.</li> </ul>

<b>Company Name</b>	<b>Palolea factory</b>
<b>Location</b>	Jericho, Palestine
<b>General description</b>	A factory of herbal extracts and food supplements extracted from olive leaves, in addition, it is one of factories of industrial city in Palestine, it is built on an area of 1,000 square meters, and equipped with technical equipment contributing to ensuring the products quality according to the international standers. Only two products are produced in this factory, the first of which is a nutritional supplement extracted from olive leaves which contributes to strengthen the immune system of human, the other is olive leaves powder which is used in making cosmetics and medical lotions. About seventy Palestinian workers work in the factory for harvesting olive leaves besides, female workers who work seasonally for three months a

	<p>year, in addition, thirty technicians work full-time.</p> <p>Production process starts from picking olive leaves of five olive farms, then drying leaves naturally, then after leaves became dry, they are grinded and dissolved in alcohol for extracting the extract intended to be filled in capsules, then, re-distillating the extract to confirm that its free from alcohol used, finally, it is filled in capsules through special machine to compress it inside the capsule and capsules are packed in special packages to be ready for selling.</p>
<b>Main products</b>	<p>Olive leaves extracts.</p> <p>Olive leaves powder.</p>

### 3.4 Price Analysis

The following table shows the prices of both pomegranate peels and olive leaves capsules, taking into consideration that the package is fixed and contains 100 capsules

**Table 14: prices analysis of pomegranate peels and olive leaves capsules products**

Service	Price
Olive leaves capsules package (100) capsules	JD 20
Pomegranate capsules package (100)capsules	JD 20

### 3.5 Marketing Strategy

#### Target market

The project targets the following customers:

- The local market.
- The global markets.

#### Expected products and services

Expected products of the project include pomegranate peels and olive leaves capsules which are used as preventive and therapeutic nutritional supplements.

#### Expected prices

Both products will be sold in a package containing 100 capsules for JD 19 per package in the first year with an increase of 3% per year, as the package price will reach JD 25 in the tenth year.

### **Promotion**

Promotional strategy of the project includes the following:

- Eye-catching website and designing pages on the social media.
- Designing brochures for the product and circulating them to pharmacies and medical clinics.
- Circulating the product to nutrition clinics and fitness and body care centers.
- Advertising in national newspapers and various media.

### **Sale**

Sale strategy of the project includes the following:

- Direct reception of orders from customers through phone call to the factory's marketing department.
- Selling through distributors of the factory.
- Selling through pharmacies and nutritional supplements centers.
- Selling through the factory's website.

### **Services**

The service delivery strategy of the project includes the following:

- Focus on product quality and used materials.
- Permanent and continuing cleaning.
- Respecting general safety, cleanness and health maintaining rules.
- Maintaining the equipment's continuously.
- Paying attention to proper and good treatment of customers.
- Rendering service to customers instantly.
- Offering service matching its quality.
- Maintaining cleanness of used tools and various facilities and equipment.
- Credibility while dealing with customers.
- Making offers on the product.
- Ensuring that the product conforms to the approved standers and specifications.

### 3.6 Expected Market Share

The following table shows the expected sales of the project in the first ten years following the establishment of the factory.

**Table 15: Expected sales of the project**

Statement	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Designed Capacity (Thousand packages)	200	200	200	200	200	200	200	200	200	200
Sales percentage	40%	50%	60%	70%	80%	90%	90%	90%	90%	90%
Factory's sales (Thousand packages)	80	100	120	140	160	180	180	180	180	180

## 4. Technical Study

### 4.1 The Designed Capacity

The following table shows the project Designed Capacity. The project designed Capacity reaches 200.000 packages.

**Table 16: The project Designed Capacity**

Item	Number
Designed Capacity (package)	200.000
Sales in year 10 (package)	180.000
Percentage of sales to the production capacity	90%

The following table shows the plot of land required for the project. The project land is leased and the areas required for the buildings and the warehouses reaches 2500 square meters.

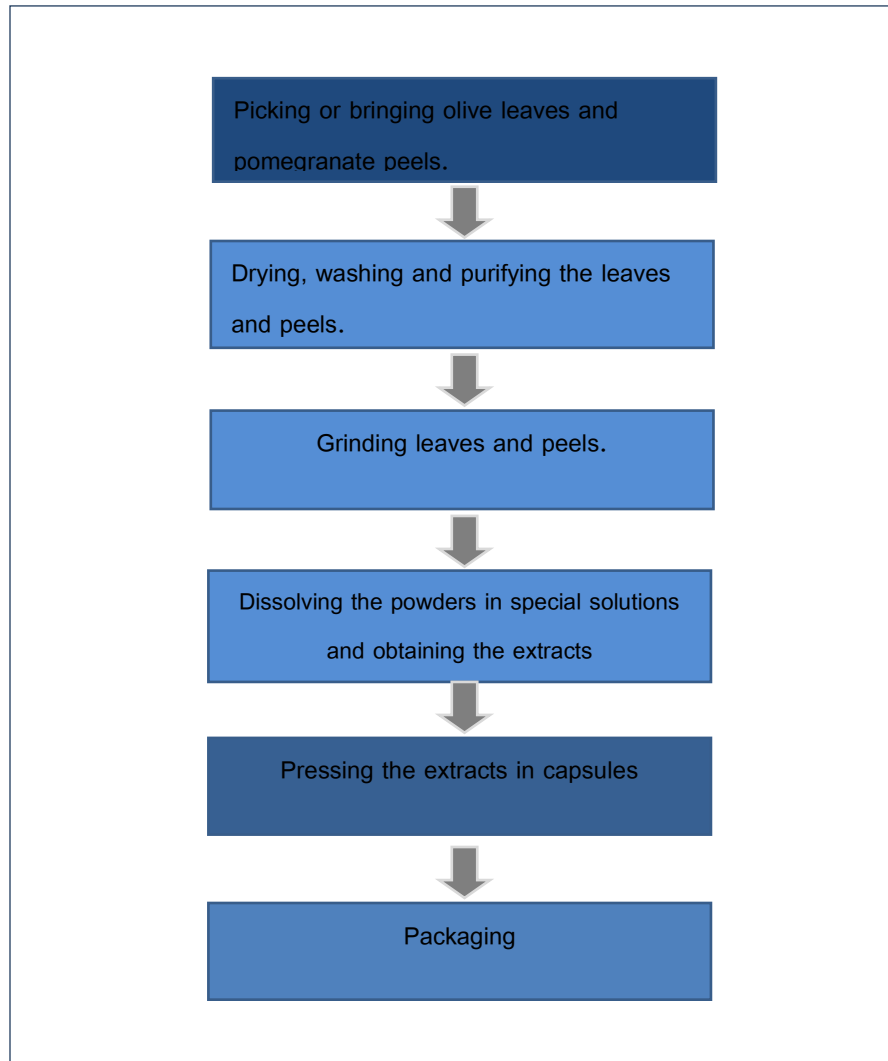
**Table 17: The Areas Required For The Project**

Item	Area (m <sup>2</sup> )
The buildings	1500
The warehouses	1000

## 4.2 Production Process

The following figure illustrates the diagram of the production process through which plant leaves and peels are converted into capsules. In the beginning olive leaves and pomegranate peels are picked or brought, dried, washed purified from impurities, then they are grinded and dissolved in particular solutions for obtaining the extracts needed to be manufactured thereof. Finally they are pressed into special capsules, packed, covered and stored.

**Figure 4: the production process for converting leaves and peels of plants into capsules.**



The following steps are taken in order to complete the production process:

- 1- Materials
  - Picking and bringing the raw materials and inspecting their quality.
  - Recording the raw materials and storing them in the warehouses.
  - Obtaining the raw materials mixtures and preparing them for production.

2- Production

- Putting the raw materials on production lines.
- Production of olive leaves capsules and pomegranate peels capsules according to the certified specifications.
- Inspecting the final products quality and ensuring their conformity to the specified standards and specifications.
- Packaging and wrapping ready products.
- Storing ready products.

The following is the equipment used in the project:

- A machine for cleaning, purifying and sorting dried leaves and peels.
- A machine for grinding the leaves and the peels.
- Machines and equipment for mixing the powders and obtaining the required extracts.
- Machine for compressing the powders in the capsules.
- Machines for packaging.

### 4.3 Required Fixed Assets

The following table shows the material resources required for the project.

**Table 18: material resources required for the project**

Item	Unit	Price	Value in JD
The buildings	1,500	200	300,000
The warehouses	1,000	150	150,000
Machinery and equipment	-	-	1,500,000
Transportation vehicles	3	25,000	75,000
Information technology	-	15,000	15,000
Others	-	-	50,000
<b>Total</b>			<b>2,090,000</b>

\*Numbers have been estimated based on market study

### 4.4 Required Human Resources

The following table shows the human resources required for the project. The number of the required employees is about 46 employees with total salaries JD 344.400 annually.

**Table 19: Human Resources required for the Project**

Item	Number of employees	Salary (JD/monthly)	Total salary (JD/annually)	Operational (JD/annually)	Admin. (JD/annually)
General manager	1	3,000	36,000	-	36,000
Manager(marketing, financial, technical)	3	1,500	54,000	-	54,000
Supervisor, engineer, doctor	6	1,200	86,400	86,400	-
Technician	6	500	36,000	36,000	-
Administrative, warehouses, marketing, accountant	10	500	60,000	-	60,000
Workers	20	300	72,000	72,000	-
<b>Total</b>	<b>46</b>		<b>344,400</b>	<b>194,400</b>	<b>150,000</b>

The following table shows the general job description of the positions required for the project.

**Table 20: General job description of the jobs required in the project**

Position	Job description
General manager	Planning, organizing, coordinating and supervision of all the matters related to the internal administration of the factory, participating in determining the policy of the factory and administrating all matters that relates to the work, review of reports submitted to the administration department, studying the problems that may arise and suggesting solutions for them, technical and administration supervision on the employees to raise their efficiency and taking into consideration the application of professional safety and health instructions.
Department manager	<ul style="list-style-type: none"> <li>▪ Supervision on the performance of the whole of the operations in the department.</li> <li>▪ Designing daily and monthly plans for the employees of the department.</li> <li>▪ Preparing the reports and reviewing the periodical reports and submitting them to the manager.</li> <li>▪ Determining human resources needs required for the activities of the department.</li> <li>▪ Using developed technologies to serve the working and the products.</li> </ul>



Position	Job description
	<ul style="list-style-type: none"> <li>▪ Giving the required instructions</li> <li>▪ Supervision on the application of the criteria and procedures of the quality applicable in the company.</li> </ul>
Accountant	<p>Registering accountancy operations and preparing monthly account statements to be sent to both customers and suppliers in addition to auditing and comparing the credits of the bank accounts with the records and the statements of these banks.</p>
Engineer	<ul style="list-style-type: none"> <li>▪ Determining the needs of materials and preparing of orders related to the productive process inputs in cooperation with the competent directorates. And then referring the same to Procurement Department.</li> <li>▪ Following up the maintenance works in the production hall performed by the specialists and filing reports in connection with the maintenance or replacement of invalid equipment.</li> <li>▪ Filing reports in connection with all related to the progress of productive process, achievements, failures and reasons.</li> <li>▪ Preparation and execution of the productive plan in the standard quantities and specifications and as scheduled.</li> <li>▪ Reducing the quantity of waste during the productive process, along with studying the reasons and suggestion of the appropriate solutions.</li> <li>▪ Developing systems and procedures of quality adjustment to inspect the raw materials supplied to the warehouse.</li> <li>▪ Following the application of the quality policy within the factory and following the correction and preventive procedures and filing periodical reports on them.</li> <li>▪ Supervision on the maintenance and repairing of the machinery used in the production process.</li> <li>▪ Registering maintenance processes and allocating a special file for each machine to know their costs.</li> <li>▪ Supervision on the application of the health and occupation safety conditions by all employees.</li> </ul>
Technician	<ul style="list-style-type: none"> <li>▪ Executing the preventive and correction electrical maintenance on the machinery, equipment and lines of production within the factory according to certified procedures and instructions.</li> <li>▪ Monitoring the efficiency of the machinery and equipment in the production department and informing production shift leader of any misuse of this machinery.</li> <li>▪ Diagnosis of the electrical damages happens to the machinery and lines of production.</li> <li>▪ Implementing the electrical extensions required to all sections and</li> </ul>

Position	Job description
	<p>departments of the plant.</p> <ul style="list-style-type: none"> <li>▪ Carrying out the required electrical modifications and connections on the equipment and machinery after studying and certifying them by the maintenance engineer.</li> <li>▪ monitoring the main transformers and fuses and reading the load, volts and heat as scheduled.</li> <li>▪ Checking boards of the main and subsidiary electrical distribution of all the factory premises and facilities pursuant to the designated programs to ensure their readiness and effectiveness.</li> </ul>
Worker	<ul style="list-style-type: none"> <li>• Preparing the materials used in production.</li> <li>• Operating the machinery used in the plant.</li> <li>• Working on the production line and conducting the required tasks.</li> <li>• Applying production and quality plans in all production processes.</li> <li>• Applying the occupational health and safety standards in the factory.</li> <li>• Reporting any damage in the machinery to the maintenance technician.</li> </ul>

#### 4.5 Special Requirements

The following table shows the requirements for establishing the plant that must be taken into consideration.

**Table 21: Requirements and specifications required for the production of nutritional complements.**

Item	Requirements and specifications
The Location	<ul style="list-style-type: none"> <li>▪ The site must be in an industrial area or far from the housing areas and compounds and downtowns.</li> <li>▪ The area must be free of pollution sources such as bad smells, flies, ponds, dusts and the other sources and is not endangered to be engulfed with water.</li> <li>▪ The site must involve the essential services like roads, electricity, water and ....etc</li> </ul>
The area	<ul style="list-style-type: none"> <li>▪ The land area must be wide and sufficient for all components of the plant such as a production area, warehouse, cafeteria and offices, putting in mind that expansion occurrence are potential.</li> </ul>
Production Area	<ul style="list-style-type: none"> <li>▪ The production area must be wide enough for the volume of the used machinery and equipment as they must have spaces in between in order not to hinder movement.</li> <li>▪ The design must be smooth to allow easy working of regular order in all the different working levels from the arrival of materials till the production of the final product.</li> <li>▪ Floors must prevent waterproof access and not be absorbent, easy to clean and wash, not slippery, made from substances that aren't affected by the industrial detergents or acids used in cleaning, to have flat surface void of clefts and holes and to have a design of light tending towards the openings of drainage.</li> <li>▪ Walls must be painted by oil paint and soft to be easy to clean.</li> <li>▪ Doors must be made of sound materials that prevent waterproof access, not absorbent, with soft touch and tightly self- closing.</li> <li>▪ Windows must be designed in a way that prevent the accumulation of dust, must be provided with an appropriate wire mesh to prevent the entry of insects and rodents and must be made of a non-.... Substance.</li> <li>▪ Lightening must be adequate in all facilities of building and industrial lightening can be used.</li> </ul>
Electrical Connections	<ul style="list-style-type: none"> <li>▪ All electrical connections must be installed according to the technical rules.</li> </ul>
Water Sources	<ul style="list-style-type: none"> <li>▪ Used water must come from a known and secure source and proved to be valid for human consumption according to labs analyses and ascertaining from the water validity must be performed periodically.</li> </ul>

Item	Requirements and specifications
	<ul style="list-style-type: none"> <li>▪ Water tank must be far away from pollution sources and water is taken from it by pipes network to the places where it's used, and it must be cleaned and sterilized periodically.</li> </ul>
Bathrooms	<ul style="list-style-type: none"> <li>▪ Bathrooms must be provided with a squeezing fan and a discharging box.</li> <li>▪ Number of bathrooms must be adequate and suitable to the number of workers in the plant, and the bathrooms must not be directly connected with the places of preparation and production.</li> <li>▪ They must be provided with soap, tissues or hot air, and never use towels.</li> </ul>
Waste and Water Discharge	<ul style="list-style-type: none"> <li>▪ Waste and water must be discharged to the drainage network or to absorption hole away of the ground tanks of drinking water by a distance not less than ten meters and in lower level by half meter.</li> <li>▪ All openings of drainage must have tight covers and permanently covered.</li> </ul>
Fixtures	<ul style="list-style-type: none"> <li>▪ All the tools, pots and equipment used in the production must be usable in a perfect way and made of stainless.</li> <li>▪ Provision of the appropriate number of fridges for storing the foodstuffs, whether the initial or the final product by the appropriate temperature degrees of cooling or freezing.</li> <li>▪ Suction fans must be available in the preparation and production places in the appropriate number and volume.</li> <li>▪ Electrical shakes for insects must be available in the appropriate number and volume, and they must be hanged on sides of the production hall and not above production lines.</li> <li>▪ Foodstuffs must be preserved in a particular warehouse in the appropriate temperature, and must be separated from the warehouse of the other substances such as initial materials and cleaning materials.</li> <li>▪ Foodstuffs must be stored and transferred under conditions that prevent them from pollution, corruption or damage and must be packed regularly and not stacked to facilitate the work operation.</li> <li>▪ Taking into consideration the store must be free of sources of moisture in order to not affect on the foodstuffs.</li> </ul>
Warehouses and Stores	<ul style="list-style-type: none"> <li>▪ They must be adequately provided with metal shelves provided that the lowest shelf is above the floor by 20 cm at least.</li> </ul>
Safety Devices	<ul style="list-style-type: none"> <li>▪ Safety requirements must be available according to the civil defense instructions.</li> </ul>
Public Health	<ul style="list-style-type: none"> <li>▪ Plant must be looked after by cleaning its facilities by virtue of using appropriate detergents and purifiers and by cleaning used tools and</li> </ul>

Item	Requirements and specifications
	<p>pots and the appropriate detergents must be used.</p> <ul style="list-style-type: none"><li>▪ Use of tissues in cleaning tables of the factory.</li><li>▪ Gathering the wastes in plastic cases or tightly closed containers.</li></ul>
Ventilation	<ul style="list-style-type: none"><li>▪ Plant must be in front of the winds to allow the ventilation processes happens correctly.</li><li>▪ Use of systems of ventilation such as closed ventilation system or suction fans system to change the air in the plant with the control in the temperature and moisture as well in addition to lightening microbes and cleansing the foundation.</li></ul>

#### 4.6 Required Licenses

The following table shows the required licenses from various parties for the project implementation

**Table 22: required licenses of the project**

Item	Analysis
Registering the company, licensing it and licensing the product.	<ul style="list-style-type: none"> <li>▪ Ministry of Industry and Trade.</li> <li>▪ Jordan Food and Drug Administration</li> </ul>
Operation	<ul style="list-style-type: none"> <li>▪ Municipality, health authorities, social security, income and sales tax.</li> </ul>

#### 4.7 Project Timetable

The following diagram shows the timeline required for implementing the project, which is eighteen (18) months:

Stage	Year One (in months)												Year Two (in months)					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Studies																		
Approvals, company registration and licensing																		
Location preparation and construction																		
furnishing and buying the machines.																		
Installation and starting the commissioning																		
<b>Total Duration</b>	<b>(18) months</b>																	

## 5. Financial Study

### 5.1 Financial Assumptions

The following table illustrates the financial assumptions of the project.

**Table 23: 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%
Working Capital	JD 461 thousand
Pre-Operating Expenses	2% of total investment
Tax Rate	5%
Raw materials and additives cost	28% of revenues
Electricity and water cost	9% of revenues
Maintenance Cost	1% of investment
Staff Benefits	25% of salaries
Annual Salaries Increase	10%
Staff incentives	2% of revenues
Assets Depreciation Rate	4% - 20% of asset value
Research & Development expenses	5% of revenues
Insurance Expenses	JD 5000 in the first year with increase by 5%
Accounts Receivable	8.8 of revenues
Inventory	6 months of costs
Annual Depreciation	JD 196 annually

## 5.2 Investment Cost

The project's Investment cost is estimated at JD 2.6 million distributed among fixed assets of JD 2 million, and pre-operating expenses and working capital in total of JD 513 thousand.

The following table shows the project's Investment cost.

**Table 24: the project's investment cost**

Item	Value (in thousand JD)
Fixed assets	2,090
Pre-operating expenses	52
Working capital	461
<b>Total</b>	<b>2,603</b>

## 5.3 Financing

The project will be financed with the shareholders by 75% which is estimated at about JD 1.9 million, while the other 25% of the project investment cost will be financed through bank loans of about JD 651 million.

The following table shows the financing structure for financing the project.

**Table 25: Project financing schedule**

Item	Value (in thousand JD)	%
Equity	1,477.6	75%
Loan	492.5	25%
<b>Total</b>	<b>1,970</b>	<b>100%</b>



## 5.4 Revenues

The following table shows the total revenues of the project, where it is noted that the revenues in the first year amounts to about JD 1.5 million, and increased to reach up to JD 4.5 million in the tenth year.

**Table 26: The Expected Revenues**

Statement	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Production capacity (one thousand packages)	200	200	200	200	200	200	200	200	200	200
Sales (%)	40%	50%	60%	70%	80%	90%	90%	90%	90%	90%
Sales (one thousand packages)	80	100	120	140	160	180	180	180	180	180
Package price	19	20	20	21	21	22	23	23	24	25
<b>Total Revenues – Thousand JD</b>	<b>1,520</b>	<b>1,957</b>	<b>2,419</b>	<b>2,907</b>	<b>3,422</b>	<b>3,965</b>	<b>4,084</b>	<b>4,206</b>	<b>4,332</b>	<b>4,462</b>

## 5.5 The Projected Costs

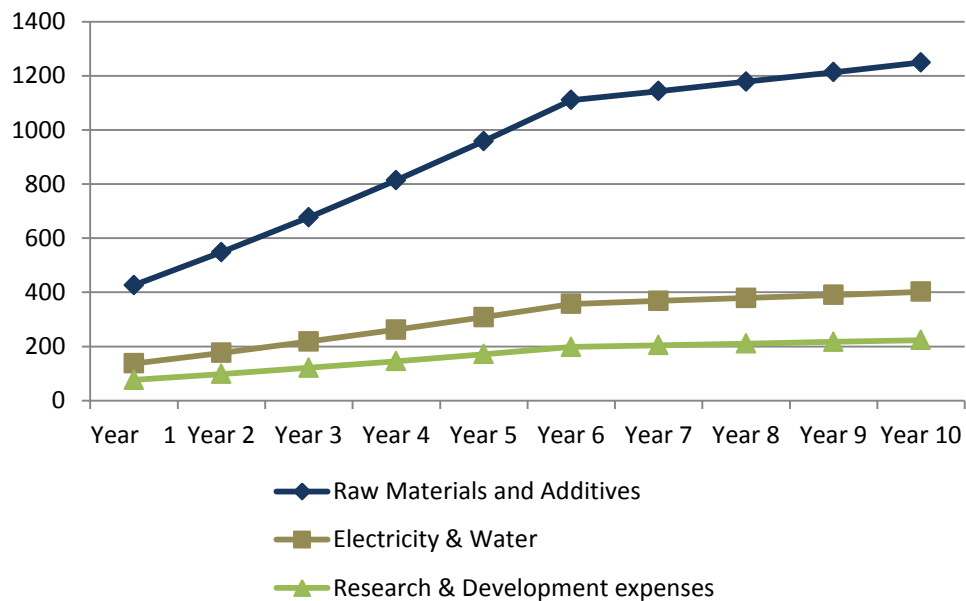
### Operating Costs

The following table shows the project's operating costs.

**Table 27: 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
Raw Materials and Additives	426	548	677	814	958	1110	1143	1178	1213	1249
Electricity & Water	137	176	218	262	308	357	368	379	390	402
Salaries	194.4	213.8	235.2	258.7	284.6	313.1	344.4	378.8	416.7	458.4
Staff Benefits	48.6	53.5	58.8	64.7	71.2	78.3	86.1	94.7	104.2	114.6
IT Expenses	5.0	5.3	5.5	5.8	6.1	6.4	6.7	7.0	7.4	7.8
Depreciation	196.0	196.0	196.0	196.0	196.0	196.0	196.0	196.0	196.0	196.0
Maintenance	20.9	21.9	23.0	24.2	25.4	26.7	28.0	29.4	30.9	32.4
Research & Development expenses	76.0	97.9	120.9	145.3	171.1	198.2	204.2	210.3	216.6	223.1
Insurance expenses	5.0	5.3	5.5	5.8	6.1	6.4	6.7	7.0	7.4	7.8
Other expenses	10.0	10.5	11.0	11.6	12.2	12.8	13.4	14.1	14.8	15.5
<b>Total</b>	<b>1118</b>	<b>1328</b>	<b>1551</b>	<b>1788</b>	<b>2039</b>	<b>2305</b>	<b>2396</b>	<b>2494</b>	<b>2597</b>	<b>2707</b>

**Figure 3: Projected Operating Costs of the Project**



### Administrative Expenses

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

**Table 28: 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	150.0	157.5	165.4	173.6	182.3	191.4	201.0	211.1	221.6	232.7
Staff Benefits	37.5	39.4	41.3	43.4	45.6	47.9	50.3	52.8	55.4	58.2
Staff Incentives	30.4	39.1	48.4	58.1	68.4	79.3	81.7	84.1	86.6	89.2
Stationery	5.0	5.3	5.5	5.8	6.1	6.4	6.7	7.0	7.4	7.8
Professional Fees	3.0	3.2	3.3	3.5	3.6	3.8	4.0	4.2	4.4	4.7
Marketing Expenses	121.6	156.6	193.5	232.5	273.7	317.2	326.7	336.5	346.6	357.0
Other Expenses	10.0	10.5	11.0	11.6	12.2	12.8	13.4	14.1	14.8	15.5
Amortization	52.1	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>410</b>	<b>411</b>	<b>468</b>	<b>529</b>	<b>592</b>	<b>659</b>	<b>684</b>	<b>710</b>	<b>737</b>	<b>765</b>

## 5.6 Projected Financial Statements

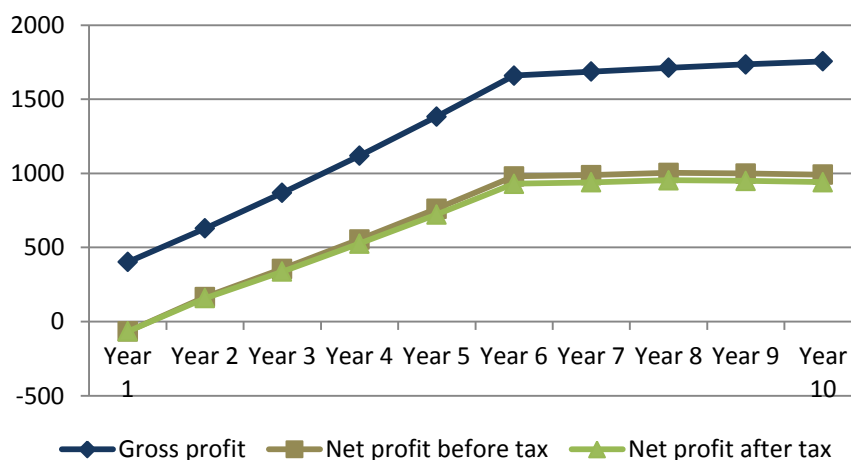
### Income Statement

The following table shows the projected income statement of the project. It indicates that gross profit will increase from JD 402 thousand in the first year to JD 1.8 million in the tenth year. Also the net profit before tax will increase from JD 166 thousand in the second year to JD 991 thousand in the tenth year, and the net profit after tax will increase from JD 158 thousand in the second year to JD 941 thousand in the tenth year.

**Table 29: 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	1,520	1,957	2,419	2,907	3,422	3,965	4,084	4,206	4,332	4,462
Operating costs (cost of sales)	1,118	1,328	1,551	1,788	2,039	2,305	2,396	2,494	2,597	2,707
Gross profit	402	629	868	1,119	1,383	1,660	1,687	1,712	1,735	1,756
Administrative expenses	410	411	468	529	592	659	684	710	737	765
Net profit	(8)	217	399	591	791	1,001	1,003	1,003	999	991
financial expenses	59	51	44	37	30	23	15	-	-	-
Pre-operating expenses amortization	-	-	-	-	-	-	-	-	-	-
Net profit before tax	(66)	166	355	554	761	979	988	1,003	999	991
Tax	-	8	18	28	38	49	49	50	50	50
Net profit after tax	(66)	158	337	526	723	930	939	953	949	941

**Figure 4: Projected Income Statement**



### Projected Balance Sheet

The following table shows the projected balance sheet of the project during the first ten years. It indicates that total assets will increase from JD 2.6 million in the year of incorporation to JD 4 million in the tenth year. The Total liabilities will decrease from JD 683 thousand in the first year to JD 271 thousand in the tenth year. The Shareholders' Equity will increase from JD 1.9 million in the year of incorporation to JD 3.9 million in the tenth year.

**Table 30: Projected Balance Sheet**

Projected Balance Sheet (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
<b>Assets</b>											
Cash	461	344	267	356	495	545	789	1,067	1,518	1,968	2,415
Receivables	-	134	325	402	483	568	658	678	698	719	741
Inventory	-	213	274	339	407	479	555	572	589	607	625
Other assets	-	30	39	48	58	68	79	82	84	87	89
Total Current Assets	461	721	905	1,145	1,442	1,660	2,082	2,398	2,889	3,380	3,870
Fixed Assets	2,142	2,142	2,142	2,142	2,142	2,282	2,282	2,282	2,282	2,282	2,282
Cumulative Depreciation	-	248	444	640	836	1,032	1,228	1,424	1,620	1,816	2,012
Amortization	-	-	-	-	-	-	-	-	-	-	-
Net Fixed Assets	2,142	1,894	1,698	1,502	1,306	1,250	1,054	858	662	466	270
Total Assets	2,603	2,615	2,603	2,647	2,748	2,910	3,136	3,256	3,551	3,846	4,140
<b>Shareholders Equity and Liabilities</b>											
Unearned revenue	-	112	133	155	179	204	230	240	249	260	271
Long Term Loans	651	571	491	411	331	251	171	-	-	-	-
Total Liabilities	-	683	624	566	510	455	401	240	249	260	271
Shareholders Contributions	1,952	1,952	1,952	1,952	1,952	1,952	1,952	1,952	1,952	1,952	1,952
Retained Earnings	-	(20)	27	129	286	503	782	1,064	1,350	1,634	1,917
Shareholders' Equity	1,952	1,932	1,980	2,081	2,239	2,456	2,735	3,016	3,302	3,587	3,869
Shareholders Equity and Liabilities	2,603	2,615	2,603	2,647	2,748	2,910	3,136	3,256	3,551	3,846	4,140

### Cash Flow Statement

The following table shows the projected cash flow statement of the project during the first ten years. It indicates that the cash flow from operating will increase from JD 114 thousand in the second year to JD 1.1 thousand in the tenth year; while the Cash at the ending period will increase from JD 461 thousand in the year of incorporation to JD 2.4 million in the tenth year.

**Table 31: The Expected Cash Flows Statement**

Cash Flow Statement (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
<b>Operation Activities</b>											
Net Profit	-	(66)	158	337	526	723	930	939	953	949	941
Depreciation	-	248	196	196	196	196	196	196	196	196	196
Change In Working Capital	-	(265)	(240)	(128)	(135)	(143)	(150)	(30)	(30)	(31)	(31)
Cash Flow From Operation	-	(84)	114	405	587	776	975	1,105	1,118	1,114	1,106
<b>Investing Activities</b>											
Fixed Assets	(2,142)	-	-	-	-	(140)	-	-	-	-	-
Cash From Investing Activities	(2,142)	-	-	-	-	(140)	-	-	-	-	-
<b>Financing Activities</b>											
Capital (Equity)	1,952	-	-	-	-	-	-	-	-	-	-
Loan	651	(80)	(80)	(80)	(80)	(80)	(80)	(171)	-	-	-
Dividends	-	47	(110)	(236)	(368)	(506)	(651)	(657)	(667)	(664)	(659)
Cash Flow From Financing Activities	2,603	(33)	(190)	(316)	(448)	(586)	(731)	(828)	(667)	(664)	(659)
Net Cash Flow	461	(117)	(77)	89	138	50	244	277	452	450	447
Cash At The Beginning Period	0	461	344	267	356	495	545	789	1,067	1,518	1,968
Cash At The Ending Period	461	344	267	356	495	545	789	1,067	1,518	1,968	2,415

## 5.7 Financial, Economic and Social Analysis

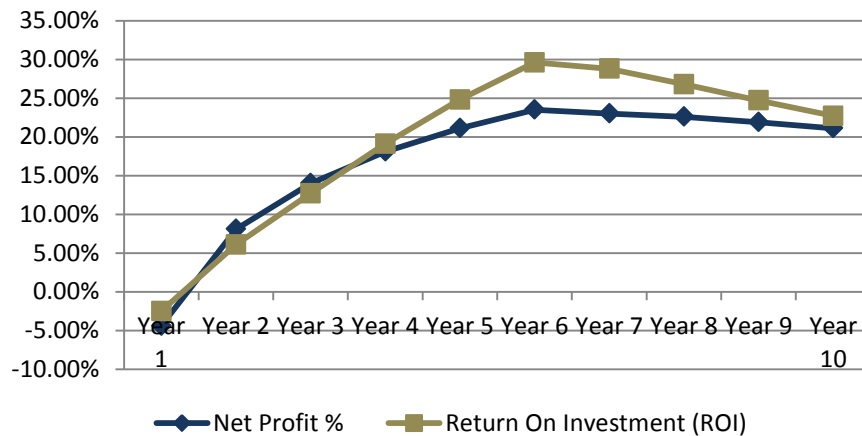
### Financial Analysis

The following table shows the financial analysis of the project. It indicates that the net profit ratio will increase from 8.1% in the second year to 21.1% in the tenth year, and the return on investment will increase from 6.1% in the second year to 22.7% in the tenth year.

**Table 32: Financial Analysis**

Financial Analysis (In Thousand JD)										
Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Assets	2,615	2,603	2,647	2,748	2,910	3,136	3,256	3,551	3,846	4,140
Revenues	1,520	1,957	2,419	2,907	3,422	3,965	4,084	4,206	4,332	4,462
Profits	(66)	158	337	526	723	930	939	953	949	941
Capital (Equity)	1,952	1,952	1,952	1,952	1,952	1,952	1,952	1,952	1,952	1,952
Net Profit %	-4.4%	8.1%	14.0%	18.1%	21.1%	23.5%	23.0%	22.6%	21.9%	21.1%
Return On Investment (ROI)	-2.5%	6.1%	12.7%	19.1%	24.8%	29.6%	28.8%	26.8%	24.7%	22.7%
Return On Capital (ROC)	-3.4%	8.1%	17.3%	26.9%	37.0%	47.6%	48.1%	48.8%	48.6%	48.2%
Net Profit On Revenues	-4.4%	8.1%	14.0%	18.1%	21.1%	23.5%	23.0%	22.6%	21.9%	21.1%
Assets Turnover (Time)	0.58	0.75	0.91	1.06	1.18	1.26	1.25	1.18	1.13	1.08

**Figure 5: The Financial Analysis**



### Economic Analysis

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

- The Internal rate of return is 23.6%. 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 3.8 million. It exceeds the net present value with JD 1.3 million, which means the economic feasibility of the project.
- The profitability index of the project reached 1.9 times, which means that the expected value of the project will increase by double the investment value, which proves that the project is feasible.
- The project payback period is 5.6 years.

**Table 33: 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	(1,952)	(164)	34	325	507	696	895	934	1,118	1,114	1,106
terminal value	-	-	-	-	-	-	-	-	-	-	3,869
Net Cash flow	(1,952)	(164)	34	325	507	696	895	934	1,118	1,114	4,975
Internal Rate of Return (IRR)	23.6%										
present Value	3,880										
Net present value	1,927										
Profitability Index (Time)	1.99										
Payback period (Year)	5.6										



### Social Analysis

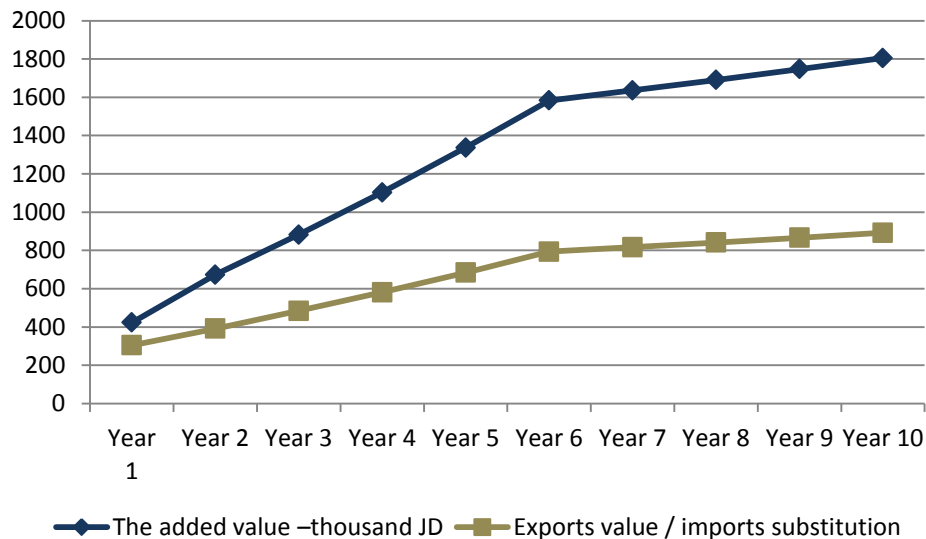
The following table shows the social analysis of the project. It is noticed that the number of staff required for the project will increase from 46 employees in the first year to 55 employees in the tenth year, where the percentage of employees with Jordanian nationality will be 30% of the total staff.

The added value of the project will also increase from JD 423 thousand in the first year to JD 1.8 million in the tenth year. Also the income tax will increase from JD 8 thousand in the second year to reach JD 50 thousand in the tenth year.

**Table 34: the Social Analysis of the Project**

Social Analysis										
Statement	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Number of Employees	46	47	48	49	50	51	52	53	54	55
Jordanian employees	14	14	14	15	15	15	16	16	16	16
The added value –thousand JD	423	673	882	1,103	1,337	1,583	1,636	1,690	1,747	1,805
Income tax –thousand JD	-	8	18	28	38	49	49	50	50	50
sales tax value –thousand JD	243	313	387	465	547	634	653	673	693	714
Exports value / imports substitution	304	391	484	581	684	793	817	841	866	892

**Figure 6: 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 35: Project Risk Matrix**

Risks	Type of Risks	Risk Assessment
<b>Financial Risks</b>	<ul style="list-style-type: none"> <li>▪ <b>Credit Risk</b> 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.</li> <li>▪ <b>Liquidity Risk</b> 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.</li> <li>▪ <b>risk of currency fluctuation</b> Currency risk is the risk of the fluctuation of the value of financial instrument, due to fluctuations in foreign currency</li> </ul>	<ul style="list-style-type: none"> <li>▪ The financial risks that may face the company are low, because the company payment method is cash and LCs</li> <li>▪ There is no risk of currency exchange, because the company sales and purchases by local currency</li> <li>▪ There is no risk of inflation because the company's pricing is based on a periodic basis</li> </ul>

Risks	Type of Risks	Risk Assessment
	<p>exchange rates.</p> <ul style="list-style-type: none"> <li>▪ <b>inflation risk</b> 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.</li> </ul>	
<p><b>Business risk (sector risk)</b></p>	<ul style="list-style-type: none"> <li>▪ <b>Strategic Risk</b> 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.</li> <li>▪ <b>Legal and Regulatory Risks</b> 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.</li> <li>▪ <b>Reputation Risk</b> 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</li> </ul>	<ul style="list-style-type: none"> <li>▪ The risks are considered moderate before the company's establishment, because of getting the approval of the official authorities such as municipality and tourism</li> <li>▪ Reputational risk is very high, as the company deals with very sensitive issues such as entertainment activities, food and beverage</li> <li>▪ Market risk in the short term will be low because of the low competition from other companies in the governorate</li> </ul>

Risks	Type of Risks	Risk Assessment
	<p>management or its employees which project a negative image of the company, its performance and its relationships with customers and other stakeholders. Reputation risk also results from circulating rumors about the company and its activities.</p> <ul style="list-style-type: none"> <li>▪ <b>Competition Risk</b> Competition risk results from domestic and external competitors and reduces sales and profits.</li> </ul>	
<b>Operational Risk</b>	<p>Operational risk involves losses resulting from the failure of internal operations, human resources and systems. It includes:</p> <ul style="list-style-type: none"> <li>▪ <b>IT Risks</b> 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.</li> <li>▪ <b>Human Resources Risk</b> Losses caused by employees or related to them (intentionally or unintentionally). It also includes acts that are intended</li> </ul>	<ul style="list-style-type: none"> <li>▪ Operational risks are very low, for the company will contract with specialized technical bodies to develop the required information systems, in order to manage operations</li> <li>▪ Competitive salaries will be paid</li> <li>▪ Information security plan will be put in place to safely keep the company information</li> </ul>

Risks	Type of Risks	Risk Assessment
	<p>as methods of cheating, abusing property or 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.</p>	
<p><b>State Risk</b></p>	<p>State Risk includes politicians' interference, civil unrest, wars, financial and monetary policies and high level of debts.</p>	<ul style="list-style-type: none"> <li>▪ 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</li> </ul>

## 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 36: Investment Increase by 10%**

Index	Base	Impact	Change
Internal Rate of Return (IRR)	23.6%	21.9%	1.7%
The Present Value at a discount rate of 13% (in Thousand JD)	3879.8	3880.8	-1.1
Net Present Value at a discount rate of 13% (in Thousand JD)	1927.4	1728.8	198.6
Profitability Index (Time)	2.0	1.8	0.2
Payback period (Year)	5.6	5.9	-0.3
The Net Profit Ratio – an average of 10 years	16.9%	16.7%	0.2%
Return on Investment - an average of 10 years	19.3%	17.9%	1.4%
Return on Capital – an average of 10 years	32.7%	29.5%	3.2%
Net Profit On Revenues - an average of 10 years	16.9%	16.7%	0.2%
Assets Turnover (Time) – an average of 10 years	1.0	1.0	0.1
The added value - an average of 10 years (in thousand JD)	1287.9	1287.5	0.4
income tax - an average of 5 (in thousand JD)	34.0	33.8	0.2
sales tax - an average of 10 years (in thousand JD)	532.4	532.4	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 21.9%, which is considered high for investment purposes
- The new payback period is 5.9 years, and it is reasonable for recovery purposes
- The return on capital is 29.5%, which is high for investment purposes

**Second: Reducing Revenues by 10%**

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

**Table 37: Reducing Revenues 10%**

Index	Base	Impact	Change
Internal Rate of Return (IRR)	23.6%	14.0%	9.6%
The Present Value at a discount rate of 13% (in Thousand JD)	3879.8	2111.6	1768.1
Net Present Value at a discount rate of 13% (in Thousand JD)	1927.4	159.2	1768.1
Profitability Index (Time)	2.0	1.1	0.9
Payback period (Year)	5.6	7.8	-2.2
The Net Profit Ratio – an average of 10 years	16.9%	8.2%	8.7%
Return on Investment - an average of 10 years	19.3%	11.5%	7.8%
Return on Capital – an average of 10 years	32.7%	16.5%	16.2%
Net Profit On Revenues - an average of 10 years	16.9%	8.2%	8.7%
Assets Turnover (Time) – an average of 10 years	1.0	1.1	-0.1
The added value - an average of 10 years (in thousand JD)	1287.9	971.0	316.9
income tax - an average of 5 (in thousand JD)	34.0	18.1	15.9
sales tax - an average of 10 years (in thousand JD)	532.4	479.1	53.2

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 14%, which is suitable for investment purposes
- The new payback period is 7.8 years, and it is reasonable for recovery purposes
- The return on capital reaches 16.5%, which is high 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 38: Increasing the Operating Costs by 10%**

Index	Base	Impact	Change
Internal Rate of Return (IRR)	23.6%	17.7%	5.9%
The Present Value at a discount rate of 13% (in Thousand JD)	3879.8	2769.2	1110.6
Net Present Value at a discount rate of 13% (in Thousand JD)	1927.4	816.8	1110.6
Profitability Index (Time)	2.0	1.4	0.6
Payback period (Year)	5.6	6.8	-1.2
The Net Profit Ratio – an average of 10 years	16.9%	10.9%	6.0%
Return on Investment - an average of 10 years	19.3%	14.7%	4.6%
Return on Capital – an average of 10 years	32.7%	22.8%	9.9%
Net Profit On Revenues - an average of 10 years	16.9%	10.9%	6.0%
Assets Turnover (Time) – an average of 10 years	1.0	1.1	-0.1
The added value - an average of 10 years (in thousand JD)	1287.9	1094.2	193.6
income tax - an average of 5 (in thousand JD)	34.0	24.4	9.6
sales tax - an average of 10 years (in thousand JD)	532.4	532.4	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 17.7%, which is considered high for investment purposes
- The new payback period is 6.8 years, and it is reasonable for recovery purposes
- The return on capital is 22.8%, which is high for investment purposes