

**Pre-Feasibility Study
Blood Transfusion Bags Plant
Amman**

April, 2017



Table of Contents

| | |
|---|-----------|
| 1. EXECUTIVE SUMMARY | 4 |
| 2. THE MACROECONOMIC ENVIRONMENT | 7 |
| 2.1 AN OVERVIEW OF THE HASHEMITE KINGDOM OF JORDAN | 7 |
| 2.2 POPULATION | 8 |
| 2.3 ECONOMIC INDICATORS IN THE KINGDOM | 10 |
| 2.4 THE JORDANIAN INVESTMENT ENVIRONMENT | 13 |
| 2.5 THE ECONOMIC ENVIRONMENT IN THE SHORT AND MEDIUM TERM | 16 |
| 3. MARKET STUDY | 17 |
| 3.1 PROJECT DESCRIPTION | 17 |
| 3.2 EXPECTED SERVICES DESCRIPTION | 17 |
| 3.3 EXPECT DEMAND ANALYSIS | 17 |
| 3.4 MARKET SUPPLY ANALYSIS | 25 |
| 3.5 MARKETING STRATEGY | 27 |
| 3.6 THE EXPECTED MARKET SHARE | 29 |
| 4. TECHNICAL STUDY | 31 |
| 4.1 THE DESIGNED PROJECT CAPACITY | 31 |
| 4.2 PRODUCTION PROCESS | 32 |
| 4.3 THE REQUIRED FIXED ASSETS | 33 |
| 4.4 THE REQUIRED HUMAN RESOURCES FOR THE PROJECT | 33 |
| 4.5 SPECIAL CONDITIONS | 36 |
| 4.6 THE REQUIRED LICENSES | 37 |
| 4.7 PROJECT TIMETABLE | 37 |
| 5. FINANCIAL STUDY | 38 |
| 5.1 FINANCIAL ASSUMPTIONS | 38 |
| 5.2 INVESTMENT COST | 39 |
| 5.3 FINANCING | 39 |
| 5.4 REVENUES | 40 |
| 5.5 THE PROJECTED COSTS | 41 |
| 5.6 PROJECTED FINANCIAL STATEMENTS | 43 |
| 5.7 FINANCIAL, ECONOMIC AND SOCIAL ANALYSIS | 46 |
| 6. RISK AND SENSITIVITY ANALYSIS | 49 |
| 6.1 RISK ANALYSIS | 49 |
| 6.2 SENSITIVITY ANALYSIS | 53 |

Amman Governorate



1. Executive Summary

This study aims at determining the pre-feasibility study for the project of establishing blood transfusion bags plant in Al Muwaqqar Industrial City, In Amman Governorate due to the increasing demand for the blood transfusion bags as result of the increase in the pathological cases and medical operations recorded within the Kingdom. The following table shows the initial indicators of the project:

Table 1: Initial Indicators of the Project

| | |
|---|--|
| Project Name | Blood Transfusion Bags Plant |
| Sector | Industrial– pharmaceutical industries. |
| Governorate | Amman |
| Region | Al Muwaqqar Industrial City |
| Products/Services | <ul style="list-style-type: none"> blood transfusion bags (single package and Quadruple package) |
| Project Description | <p>The project is to establish plant for manufacturing the blood transfusion bags in order to be marketed and sold for the local health sector with the purpose of satisfying the growing demand for the blood transfusion bags, due to the increased pathological cases and surgeries in all kinds thereof recorded in the hospitals and the huge numbers of the Syrian refugees and the patients to the kingdom from the other Arab Countries for medical tourism treatment purposes. In fact, The hospitals operating in various health sectors in the local market satisfy their current needs of the blood transfusion bags by purchasing them from the medical drugs warehouses and medical supplies companies that – in turn – import these products from abroad, since there are currently no local producers of the blood transfusion bags.</p> |
| Target Market | <ul style="list-style-type: none"> Blood banks in all health sectors. Export markets. |
| Investment Cost | The project investment cost is 4.8 million JD. |
| The average return on investment | The average return on investment rate within ten years is around 13.4%. |
| Internal Rate of Return | Internal return rate of the project is around 20.4%. |
| Average added value of the project | Average added value on project within ten years is around 1.38 million JD. |
| Risk Assessment | The Sensitivity Analysis indicates a low risk in case of 10% increase in investment cost, where as a high risk in case 10% increase in operating costs, or 10% decrease in revenues. |
| The Project justifications | <ul style="list-style-type: none"> Growing demand for the blood transfusion bags as result of the increase of the pathological cases and medical operations in various types thereof. Absence of the local projects for manufacturing the blood transfusion bags where the local market is fully dependent on the imports to fulfill its annual needs of the blood bags. |

| | |
|--------------------------------|---|
| | <ul style="list-style-type: none">• Potential of exporting to external markets.• Potential of local force employment. |
| Partners / Stakeholders | <ul style="list-style-type: none">• Jordan Food and Drugs Administration.• Ministry of Environment.• Ministry of Health.• Blood banks at all health sectors. |

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, Ma'raq, 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 km², 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.

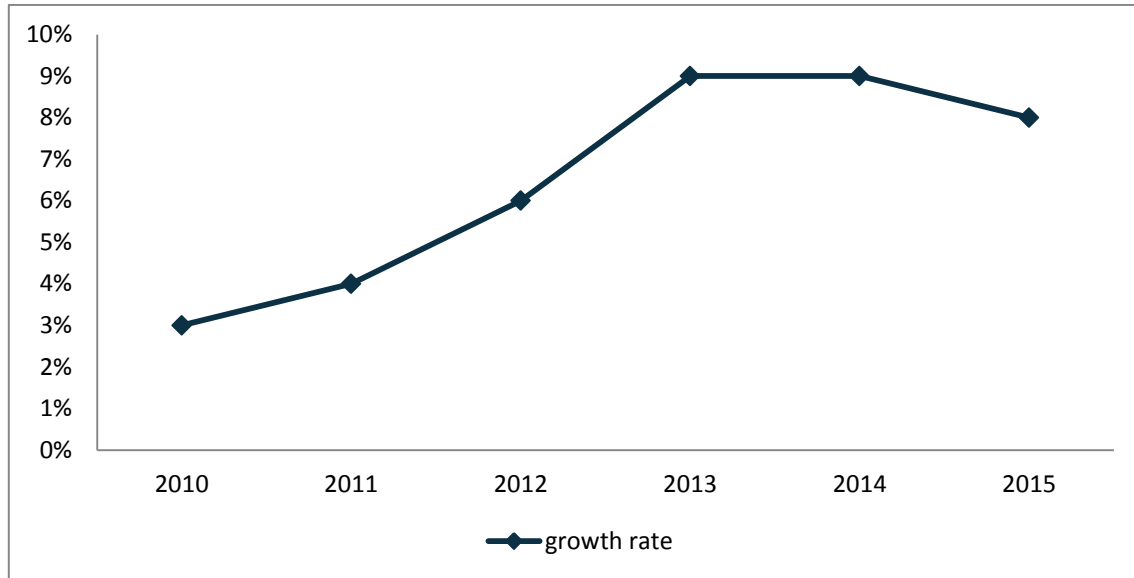
The unemployment rate among Jordanians also witnessed a rise by 1.1 percentage to reach to 13%, due to the structural imbalances that the labor market is suffering from and the acquisition of the low-paid foreign workers on a large number of new jobs in the economy, according to the Central Bank of Jordan.

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 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

¹ The Central Bank of Jordan

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 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 |
| 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 |

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|----------|----------|----------|----------|----------|
| 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 |
| 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 to establish plant for manufacturing the blood transfusion bags in order to be marketed and sold for the local health sector with the purpose of satisfying the growing demand for the blood transfusion bags, due to the increased pathological cases and surgeries in all kinds thereof recorded in the hospitals and the huge numbers of the Syrian refugees and the patients to the kingdom from the other Arab Countries for medical tourism treatment purposes. In fact, the hospitals operating in various health sectors in the local market satisfy their current needs of the blood transfusion bags by purchasing them from the medical drugs warehouses and medical supplies companies that – in turn – import these products from abroad, since there are currently no local producers of the blood transfusion bags.

3.2 Expected Services Description

The project mainly produces the following blood transfusion bags:

- Single package of blood transfusion bags - 450 ml.
- Quadruple package of blood transfusion bags - 450 ml – without filter.
- Quadruple package of blood transfusion bags - 450 ml – with filter.

3.3 Expect Demand Analysis

Health Care Sector

The health care sector in the kingdom is one of the vital economic sectors that enjoy a distinct reputation locally and /or regionally due to the availability of the advanced technology and the qualified human staff in most of specializations to render distinguished and advanced treatment services. Consequently, The Kingdom becomes one of the most advanced countries in providing medical services compared with the neighboring countries in the Middle East region.

Further, health care sector in the kingdom is distinguished with possessing advanced infrastructure, geographical spreading of the hospitals, the high quality of the advanced medical services and the availability of the supportive logistic services including the medicaments, nurses and advanced medial labs. Also, it is worthing to mention that the kingdom has (104) hospitals containing (13.115) beds, and the number of the beds per (10,000 people) within the kingdom is around (13) beds in 2015.

The following table shows the main indicators related to the work load at hospitals of the kingdom, in 2015.

Table 7: Main indicators related to the work local at hospitals of the kingdom for 2015

| Main indicators | Ministry of Health | Royal Medical Services | Educational Services | Private Sector | Total |
|------------------------|--------------------|------------------------|----------------------|----------------|---------|
| Hospitals No. | 31 | 12 | 2 | 59 | 104 |
| Number of Beds | 5,077 | 2,551 | 1,137 | 4,350 | 13,115 |
| Admission cases | 369,538 | 185,008 | 75,177 | 256,802 | 886,525 |
| Patient length of stay | 3.1 | 4.1 | 3.9 | 2.1 | - |
| Occupancy rate | 65.1 | 81.2 | 71.4 | 42.4 | - |
| Number of Surgeries | 89,047 | 97,404 | 39,444 | 133,800 | 359,695 |

Source: Annual Report of Ministry of Health, 2015

Demand for the blood transfusion bags

The demand for blood transfusion bags is affected mainly by the following elements:

- Population growth rate.
- Number of the hospitals, medical centers and available beds.
- Number of the registered pathological cases and the surgeries performed at hospitals.
- Number of the Arab and foreign patients coming to the kingdom for medical tourism purposes.
- Awareness and trend of the individuals toward the blood donation.

Blood Banks in the Kingdom

The following tables shows the work-local of the blood banks in hospitals of Ministry of Health and the rate of change in number of the blood donors in the blood banks within the hospitals of Ministry of Health 2014 – 2015.

Table 8: Work-local of blood banks in hospitals of Ministry of Health 2014

| No. | Blood Bank | No. of Donators | Released Blood, unit 500 m ³ | Taken Blood, unit 500 m ³ | Blood Examination No. | Damaged Blood Quantities |
|-----|--------------------------------|-----------------|---|--------------------------------------|-----------------------|--------------------------|
| 1 | National Blood Bank / Amman | 68,301 | 73,161 | 68,301 | 3,056,190 | 1,195 |
| 2 | Central / Irbid | 14,289 | 13,544 | 14,833 | 498,023 | 1,266 |
| 3 | Prince Hamzah | 6,079 | 3,517 | 6,079 | 37,801 | 170 |
| 4 | Zarqa | 3,890 | 3,731 | 3,941 | 52,559 | 773 |
| 5 | Princess Basma | 2,867 | 2,738 | 2,867 | 69,504 | 168 |
| 6 | Prince Faisal | 2,378 | 1,991 | 2,388 | 81,617 | 377 |
| 7 | Jerash | 1,432 | 1,182 | 1,432 | 14,527 | 233 |
| 8 | Hussein/Salt | 1,785 | 1,586 | 1,750 | 19,741 | 200 |
| 9 | Dr. Jamel Altotnge | 1,658 | 1,502 | 1,658 | 52,387 | 266 |
| 10 | Maan | 652 | 549 | 774 | 2,800 | 115 |
| 11 | Eman / Ajloun | 1,587 | 1,304 | 1,547 | 101,063 | 276 |
| 12 | Nadeem | 1,967 | 1,282 | 1,967 | 29,029 | 604 |
| 13 | Prince Hussein bin Abdullah II | 1,296 | 863 | 1,296 | 25,101 | 533 |
| 14 | Women and children | 1,445 | 1,056 | 1,445 | 180,444 | 361 |

| No. | Blood Bank | No. of Donators | Released Blood, unit 500 m ³ | Taken Blood, unit 500 m ³ | Blood Examination No. | Damaged Blood Quantities |
|--------------|-----------------------|-----------------|---|--------------------------------------|-----------------------|--------------------------|
| 15 | Ramtha | 917 | 666 | 799 | 13,249 | 133 |
| 16 | Princess Raya | 440 | 364 | 370 | 7,910 | 30 |
| 17 | Karak | 2,335 | 2,056 | 2,335 | 64,042 | 327 |
| 18 | Ghor Safi | 791 | 654 | 777 | 14,060 | 148 |
| 19 | Maaz bin Jabal | 507 | 148 | 256 | 5,914 | 103 |
| 20 | Queen Rania Abdullah | 710 | 387 | 684 | 4,583 | 401 |
| 21 | Mafraq | 1,145 | 848 | 1,145 | 16,514 | 273 |
| 22 | Yarmouk | 522 | 366 | 522 | 1,930 | 155 |
| 23 | South Barn | 585 | 395 | 341 | 5,909 | 45 |
| 24 | Princess Eman / Maadi | 671 | 387 | 581 | 3,849 | 75 |
| 25 | Abu Obeida | 361 | 149 | 233 | 32,021 | 83 |
| 26 | Princess Salma | 298 | 114 | 298 | 3,078 | 155 |
| Total | | 118,908 | 114,540 | 118,619 | 4,393,845 | 8,464 |

Source: Annual Report for Ministry of Health 2014

Table 9: Work-local of blood banks in hospitals of Ministry of Health 2015

| No. | Blood bank | No. of Donators | Released Blood, unit 500 m ³ | Taken Blood, unit 500 m ³ | Blood Examination No. | Damaged Blood Quantities |
|-----|--------------------------------|-----------------|---|--------------------------------------|-----------------------|--------------------------|
| 1 | National Blood Bank / Amman | 65,523 | 65,275 | 65,523 | 2,703,331 | 779 |
| 2 | Central / Irbid | 14,660 | 14,004 | 13,931 | 533,464 | 1,265 |
| 3 | Zarqa | 4,358 | 4,319 | 4,486 | 90,668 | 345 |
| 4 | Prince Hamzah | 5,764 | 3,922 | 5,764 | 48,532 | 238 |
| 5 | Princess Basma | 2,758 | 2,692 | 2,758 | 65,029 | 81 |
| 6 | Prince Faisal | 2,048 | 1,610 | 2,048 | 66,748 | 379 |
| 7 | Jerash | 1,313 | 964 | 1,313 | 11,458 | 264 |
| 8 | Hussein/Salt | 1,762 | 1,646 | 1,762 | 22,900 | 189 |
| 9 | Dr. Jamel Altotnge | 2,202 | 1,837 | 2,202 | 57,758 | 324 |
| 10 | Maan | 378 | 346 | 459 | 2,900 | 32 |
| 11 | Eman / Ajloun | 1,343 | 967 | 1,294 | 69,635 | 314 |
| 12 | Karak | 2,431 | 2,193 | 2,431 | 61,826 | 243 |
| 13 | Nadeem | 1,999 | 1,298 | 1,999 | 29,020 | 730 |
| 14 | Prince Hussein bin Abdullah II | 976 | 759 | 976 | 23,757 | 281 |
| 15 | Women and children | 1,186 | 1,460 | 1,186 | 140,418 | 435 |
| 16 | Ramtha | 760 | 521 | 685 | 10,535 | 172 |
| 17 | Princess Raya | 515 | 463 | 495 | 9,680 | 15 |
| 18 | Ghor Safi | 1,072 | 791 | 1,053 | 14,778 | 200 |

| No. | Blood bank | No. of Donators | Released Blood, unit 500 m ³ | Taken Blood, unit 500 m ³ | Blood Examination No. | Damaged Blood Quantities |
|--------------|-----------------------|-----------------|---|--------------------------------------|-----------------------|--------------------------|
| 19 | Maaz bin Jabal | 425 | 183 | 288 | 5,686 | 104 |
| 20 | Queen Rania Abdullah | 646 | 228 | 646 | 4,084 | 447 |
| 21 | Mafraq | 1,447 | 774 | 989 | 12,399 | 216 |
| 22 | Yarmouk | 530 | 378 | 530 | 1,965 | 141 |
| 23 | South Barn | 463 | 208 | 237 | 4,839 | 50 |
| 24 | Abu Obeida | 445 | 174 | 266 | 29,477 | 83 |
| 25 | Princess Eman / Maadi | 625 | 538 | 615 | 3,439 | 62 |
| 26 | Princess Salma | 273 | 182 | 273 | 2,873 | 118 |
| Total | | 115,902 | 107,731 | 114,208 | 4,027,199 | 7,506 |

Source: Annual Report for Ministry of Health 2015

Table 10: Rate of change in number of the blood donors in the blood banks affiliating to hospitals of Ministry of Health for years (2013-2015)

| No. | Blood Bank | No. of Donators | | | Change Rate 2013/2014 | Change Rate 2014/2015 |
|-----|--------------------------------|-----------------|--------|--------|-----------------------|-----------------------|
| | | 2013 | 2014 | 2015 | | |
| 1 | National Blood Bank / Amman | 63,488 | 68,301 | 65,523 | 7.6 | 4.1- |
| 2 | Central / Irbid | 13,005 | 14,289 | 14,660 | 9.9 | 2.6 |
| 3 | Prince Hamzah | 5,883 | 6,079 | 5,764 | 3.3 | 5.2- |
| 4 | Zarqa | 3,481 | 3,890 | 4,358 | 11.7 | 12 |
| 5 | Princess Basma | 2,999 | 2,867 | 2,758 | -4.4 | 3.8- |
| 6 | Hussein/Salt | 1,694 | 1,785 | 1,762 | 5.4 | 1.3- |
| 7 | Jerash | 1,140 | 1,432 | 1,313 | 25.6 | 8.3- |
| 8 | Prince Faisal bin Hussain | 2,101 | 2,378 | 2,048 | 13.2 | 13.9- |
| 9 | Maan | 692 | 652 | 378 | -5.8 | 42- |
| 10 | Dr. Jamel Altotnge | 1,830 | 1,658 | 2,202 | -9.4 | 32.8 |
| 11 | Prince Hussein bin Abdullah II | 1,241 | 1,296 | 976 | 4.4 | 24.7- |
| 12 | Karak | 2,211 | 2,335 | 2,431 | 5.6 | 4.1 |
| 13 | Women and children | 1,525 | 1,445 | 1,186 | -5.2 | 17.9- |
| 14 | Eman / Ajloun | 1,553 | 1,587 | 1,343 | - | 15.4- |
| 15 | Nadeem | 1,809 | 1,967 | 1,999 | 8.7 | 1.6 |
| 16 | Mafraq | 1,227 | 1,145 | 1,447 | -6.7 | 26.4 |
| 17 | Queen Rania Abdullah | 504 | 710 | 646 | 40.9 | 9- |
| 18 | Princess Raya | 475 | 440 | 515 | -7.4 | 17 |
| 19 | Ramtha | 801 | 917 | 760 | 14.5 | 17.1- |
| 20 | Ghor Safi | 947 | 791 | 1,072 | -16.5 | 35.5 |
| 21 | Yarmouk | 563 | 522 | 530 | -7.3 | 1.5 |
| 22 | Abu Obeida | 382 | 361 | 445 | -5.5 | 23.3 |
| 23 | South Barn | 744 | 585 | 463 | -21.4 | 20.9- |
| 24 | Maaz bin Jabal | 409 | 507 | 425 | 24 | 16.2- |

| No. | Blood Bank | No. of Donators | | | Change Rate 2013/2014 | Change Rate 2014/2015 |
|-----|-----------------------|-----------------|----------------|----------------|--------------------------|--------------------------|
| | | 2013 | 2014 | 2015 | | |
| 25 | Princess Eman / Maadi | 478 | 671 | 625 | 40.4 | 6.9- |
| 26 | Princess Salma | 291 | 298 | 273 | 2.4 | 8.4- |
| | Total | 111,473 | 118,908 | 115,902 | 6.7 | 2.5- |

Source: Annual Report for Ministry of Health 2014-2015

The field visits showed that there are many technical standards followed by blood banks in Hospitals of Ministry of Health upon selecting, evaluating, approving and rejecting the suppliers of the blood transfusion products, which can be listed as follows:

Standards of Evaluating the Blood Transfer Bags

- The package has various speeds during the separation process.
- The plasma can be transferred easily after completion of the separation process.
- There is package special for keeping the platelets.
- There is serial number on all packages and pipes.
- There is manufacturing number on each package.
- The sticker is good and un-removable easily and contains the necessary information, the manufacturing date and the expiry date.
- Carries the sticker for the storage conditions.
- Result of the examination of infectious diseases for preservatives.
- Result of the examination of the agriculture for the preservatives.
- Percentage of the dissolution of red blood cells throughout the storage period.

Standards of Evaluation of Blood Transfer Packages

- Plastic type.
- Easy opening of the external covers of the packages.
- Packages volume, length*width (18*12 cm).
- Length of the pipe for the main package (90*120 cm).
- Existence of the manufacturing number on each package.
- The sticker is good and un-removable easily and contains the necessary information, the manufacturing date and the expiry date.
- Sufficient empty place to write the information.
- The needle is sharp and un-painful.
- There are two-side openings for the main package.
- There are two giving entrances for the main package in suitable length.
- There is serial number on all pipes of the packages.
- The needle cover is closed tightly and removable easily.
- The plastic pipes can be welded and separated easily.
- There is clamp on the main package pipe.
- There is clamp on the pouch package pipe.
- There is sample pouch.
- There is safe guard.

- There is bone on the main package does not allow the flow of the anti-clotting or the entry of the blood to the package, except after breaking the bone.
- The anti-clotting material flows from the package.
- The anti-clotting color is transparent (preservative).
- Equipped with clamps.
- Problems during the separation of the blood and the preservation.
- Result of culture of the clotting material (preservative material).

Expected Market Demand

In order to estimate the volume of the market demand for the blood transfusion bags in various health sectors within the kingdom, the concerned individuals were interviewed at the directorate of blood bank at Ministry of Health since it is the main official authorized party in the kingdom responsible for the processes of blood donation, transfusing the components of the blood, examining, transfusing, and securing the blood to the patients according to the approved systems and instructions. In addition, this directorate has the aggregate statistics related to the quantities of consumption of blood transfusion bags for all health sectors in the kingdom.

Further, the General Supplies Department was approached and the officials thereat were interviewed, who are responsible for the operations of procuring and supplying all needs of the blood banks affiliating to the sector of Ministry of Health within the kingdom. Moreover, information was procured about the purchase operations for 2015 and 2016 that shows the quantities and values of purchases of the blood transfusion bags for the blood banks within Ministry of Health.

Additionally, a field survey was conducted for a sample consisting of 6 hospitals in the private sector. Where the concerned persons confirmed their full dependency on the blood banks at the Ministry of Health to provide them with the required quantities of the blood units necessary for rendering their treatment services according to the applicable systems and instructions; with the exception of the Islamic Hospital, because it has previously acquired the necessary licenses related to the activities of blood donation since its inception.

Therefore, the following table shows the volume of the local market demand (quantity) for the blood transfusion bags in the local market in 2014 and 2015.

Table 11: Volume of the market demand (quantity) for the blood transfusion bags in 2014 and 2015

| Sector | 2015 | | | | 2016 | | | |
|------------------------|----------------|---------------|-------------------|-------------|----------------|---------------|-------------------|-------------|
| | Single Package | | Quadruple Package | | Single Package | | Quadruple Package | |
| | Without filter | Transfer Bags | Without filter | With filter | Without filter | Transfer Bags | Without filter | With filter |
| Ministry of Health | 15,000 | 13,600 | 75,000 | 39,000 | 25,000 | 13,600 | 75,000 | 35,000 |
| Royal Medical Services | - | - | - | 46,800 | - | - | - | 50,000 |
| University of Jordan | - | - | 9,040 | 2,260 | - | - | 9,600 | 2,400 |
| King Abdullah | - | - | 5,000 | 1,250 | - | - | 5,200 | 1,300 |

| | | | | | | | | |
|-------------------------------|---------------|--------|--------|--------|---------------|--------|--------|--------|
| University Founder | | | | | | | | |
| Islamic University | - | - | 2,350 | - | - | - | 2,500 | - |
| King Hussein Cancer Center | 4,520 | - | 6,780 | - | 4,800 | - | 7,200 | - |
| Subtotal | 19,520 | 13,600 | 98,170 | 89,310 | 29,800 | 13,600 | 99,500 | 88,700 |
| Total demand (package) | 220600 | | | | 231600 | | | |

Source: Blood Bank Directorate at Ministry of Health, 2015-2016

The following tables show the market structure for blood transfusion bags during 2015-2016 by:

- Health sector.
- Health sector / product type.
- Product type (single package/quadruple package).
- Product type / class.

It could be said that the hospitals of Ministry of Health are the major consumer of blood transfusion bags with share reached in average 65% during the last years followed by the hospitals affiliating to the Royal Medical Services and the Educational Universities with percentages of around 22% and 8% respectively.

Also, it is obvious that the products of blood transfusion bags – quadruple –package hold the highest percentage of consumption of all health sectors with percentage reaching to around 83%, in average, during the years of 2015-2016 compared to 17% for the single packages from the blood transfusion bags.

Table 12: Percentage of the annual consumption of the blood transfusion bags by health sector for 2015 and 2016

| Sector | Annual Consumption Percentage | |
|----------------------------------|-------------------------------|------|
| | 2015 | 2016 |
| Ministry of Health | 65% | 64% |
| Royal Medical Services | 21% | 22% |
| University of Jordan | 5% | 5% |
| King Abdullah University Founder | 3% | 3% |
| Al Hussein Center for Cancer | 5% | 5% |
| Islamic University | 1% | 1% |

Source: General Supplies Directorate – Blood Bank Directorate at Ministry of Health 2015-2016

Leading Point Calculating

Table 13: Percentage of the annual consumption of the blood transfusion bags by health sector/product type for 2014 and 2015

| Sector | 2015 | | | | 2016 | | | |
|----------------------------------|----------------|---------------|-------------------|-------------|----------------|---------------|-------------------|-------------|
| | Single Package | | Quadruple Package | | Single Package | | Quadruple Package | |
| | Without filter | Transfer Bags | Without filter | With filter | Without filter | Transfer Bags | Without filter | With filter |
| Ministry of Health | 10.50% | 9.50% | 53% | 27% | 17% | 9% | 50% | 24% |
| Royal Medical Services | - | - | - | 100% | - | - | - | 100% |
| University of Jordan | - | - | 80% | 20% | - | - | 80% | 20% |
| King Abdullah University Founder | - | - | 80% | 20% | - | - | 80% | 20% |
| Islamic University | - | - | 100% | - | - | - | 100% | - |
| Al Hussein Center for Cancer | 40% | - | 60% | - | 40% | - | 60% | - |

Source: Blood Bank Directorate at Ministry of Health
 Leading Point Calculating

Table 14: Percentage of annual consumption of the blood transfusion bags by the product type for 2015 and 2016

| Sector | Annual Consumption Percentage | |
|--|-------------------------------|------|
| | 2015 | 2016 |
| Single package of blood transfusion bags. | 15% | 19% |
| Quadruple package of blood transfusion bags. | 85% | 81% |

Source: Blood Bank Directorate at Ministry of Health 2015-2016
 Leading Point Calculating

Table 15: Percentage of annual consumption of products of blood transfusion bags (single package) for 2015 and 2016

| Sector | Annual Consumption Percentage | |
|---|-------------------------------|------|
| | 2015 | 2016 |
| Single package of blood transfusion bags – without filter | 59% | 69% |
| Single package of blood transfusion bags – transfer bags | 41% | 31% |

Source: Blood Bank Directorate at Ministry of Health 2015-2016
 Leading Point Calculating

Table 16: Percentage of annual consumption of products of blood transfusion bags (Quadruple package) for 2015 and 2016

| Sector | Annual Consumption Percentage | |
|--|-------------------------------|------|
| | 2015 | 2016 |
| Quadruple package of blood transfusion bags – without filter | 52% | 53% |
| Single package of blood transfusion bags – with filter | 48% | 47% |

Source: Blood Bank Directorate at Ministry of Health 2015-2016
 Leading Point Calculating

3.4 Market Supply Analysis

Products of blood confusion bags are provided in the local market through the drugs warehouses and the medical supplies companies that – in turn – import these products to meet the needs of the hospitals in the health sectors. Based upon the market survey, it is shown that that local demand for the blood transfusion bags is satisfied by the imported products whether from the Arab Countries (KSA, Egypt and UAE) and/or the foreign countries (Singapore, Thailand, France, Germany, Czech Republic and China). All bids of the Ministry of Health for 2016 are fulfill by imports imported from foreign countries as shown in the following tables.

Main Competitors at a Glance

The results of the field survey revealed that there are some companies import products of blood transfusion bags and sell them to hospitals within the local market. The following is summary about the major competitors of the project.

| | |
|---|--|
| Name | Arab Medical & Scientific Alliance |
| Location | Amman |
| Blood transfusion bags and prices | Single package of blood transfusion bags – without filter, CPDA-1, 450 ml, the price ranges between 3.43 – 4.43 JD. Quadruple package of blood transfusion bags – without filter, CPDA-1, 450 ml, the price ranges between 5.95 – 6.95 JD. Quadruple package of blood transfusion bags – without filter, CPD-SAG, 450 ml, the price ranges between 6.11 – 7.11 JD. |
| Country of origin | JMS Co. / Singapore |
| Market share from tenders of Ministry of Health for 2016 | 39% |

| | |
|---|--|
| Name | Asad A.H. derhally Drug Store |
| Location | Amman |
| Blood transfusion bags and prices | Single package of blood transfusion bags – without filter, CPDA-1, 450 ml, the price ranges between 3.33 – 4.33 JD. Quadruple package of blood transfusion bags – without filter, CPDA-1, 450 ml, the price ranges between 5.98 – 6.98 JD. Quadruple package of blood transfusion bags – without filter, CPD-SAG, 450 ml, the price ranges between 6.08 – 7.08 JD. |
| Country of origin | Kawasumi Laboratories Co. / Thailand |
| Market share from tenders of Ministry of Health for 2016 | 35% |

| | |
|--|--|
| Name | Al-Wafi Group for Marketing & Int'l Trade Co. Ltd. |
| Location | Amman |
| Blood transfusion bags and prices | Quadruple package of blood transfusion bags – with filter, CPD-SAG, 450 ml, the price ranges between 17.25 – 18.25 JD. |
| Country of origin | Macopharma Co./ France |

| | |
|---|-----|
| Market share from tenders of Ministry of Health for 2016 | 14% |
|---|-----|

| | |
|---|--|
| Name | Lemon Medical & Laboratory Equipment Co. |
| Location | Amman |
| Blood transfusion bags and prices | Quadruple package of blood transfusion bags – with filter, CPD-SAG, 450 ml, the price ranges between 17.250 – 18.520 JD. |
| Country of origin | Fresenius Kabi Co. – Germany / Czech Republic |
| Market share from tenders of Ministry of Health for 2016 | 9% |

| | |
|---|---|
| Name | Areha Import & Export Est. |
| Location | Amman |
| Blood transfusion bags and prices | Quadruple package of blood transfusion bags – with filter, CPDA-1, 450 ml, the price ranges between 8.25 – 9.25 JD. |
| Country of origin | Nanjing Shunagwei Biotechnology Co. / China |
| Market share from tenders of Ministry of Health for 2016 | 3% |

The following table shows the prices of products of Blood Transfusion Bags in the local market as shown by the field survey

Table 17: Selling prices of Blood Transfusion Bags in the local market

| Product | Price (JD) | Country of Origin |
|--|-------------------|--------------------------|
| Single package of blood transfusion bags – without filter | 3.330-4330 | Thailand |
| | 3.430-4.340 | Singapore |
| Single package - Transfer Bags | 1.690-2.690 | Singapore |
| | 8.250-9.250 | China |
| Quadruple package of blood transfusion bags – without filter | 5.95-6.95 | Singapore |
| | 6.110-7.110 | Singapore |
| | 5.98-6.98 | Thailand |
| Quadruple package of blood transfusion bags – with filter | 6.08-7.08 | Thailand |
| | 17.250-18.250 | France |
| | 17.520-18.520 | Germany – Czech |

Further, has been noted that the prices of selling the blood transfusion bags by the targeted sector (public sector / private sector) are convergent, as the price is deemed the most important element looked at by hospitals when comparing among the suppliers in case of the bids and tenders initiated and managed by the Ministry of Health. In addition, the pricing strategy adapted by the suppliers of blood transfusion bags and the capability thereof to grant discounts of the free additional quantity/quantities are of the most important factors in preferring and selecting the products of the certain supplier over the others in the marketplace followed by hospitals.

3.5 Marketing strategy

Targeted Market

The project targets the hospitals working in the following sectors, whether in the local market and/or in the exporting markets:

- Ministry of Health.
- Educational Universities.
- Royal Medical Services.
- Private Sector.

Prior to design and elaborating on components of the marketing strategy, it is necessary to specify the main marketing objectives of implementing this strategy, which could be listed as follows:

- Deriving the demand for the project's products.
- Establishing a distinguished marketing position for the project's products to penetrate the market and reduce the potential competition risks.
- Maximizing of the marketing share of the project compared with the potential competitors.
- Achieving profits for the project over its lifetime.

In order to achieve the above mentioned objectives, we hereby provide a set of recommendations within each of the marketing strategy components.

Expected products (Products Strategy)

It is necessary to concentrate on quality of the finished products, since it is one of the main standards for accepting the new products by the hospitals/medical centers, on one hand and to enable the project to occupying an attractive position among the current and/or potential competitors, on the other hand. In this regard, the project is recommended to concentrate on the features and quality of the products; such as:

- Technical specifications approved by the targeted sectors in manufacturing the blood transfusion bags as mentioned previously.
- Sterilization and level of medical cleaning for the products.
- Method of products packaging.

It is proposed that the project to produce the blood transfusion bags within the following combination, because they represent the majority of volume of consumption of these products by the hospitals in all health sectors:

- Single package for blood transfusion bags, without filter, 450 ml, 5%.
- Quadruple- package for blood transfusion bags, without filter, 450 ml, 50%.
- Quadruple- package for blood transfusion bags, with filter, 450 ml, 45%.

Expected prices (Prices Strategy)

In order to achieve the market share from the project and to ensure offering competitive and reasonable prices in the local market; it is necessary to follow the rapid penetration strategy in pricing the project products by offering lower prices than those offered by the competitors in the market. Moreover, this should be accompanied with intensive promotional efforts due to the

current competition in the Jordanian market on part of the local importing companies in addition to the high sensitivity of the consumers for the price paid against procuring the blood transfusion bags, by doing so, this strategy is expected to facilitate the task of the project to penetrate the market and again the expected market share.

Thus, it is suggested to offer and sell the project’s products for the targeted hospitals within the following price structure:

- Average price for selling the blood transfusion bags – single package: 3 JD.
- Average price for selling the product of blood transfusion bags – Quadruple-package without filter: 5.5 JD.
- Average price for selling the product of blood transfusion bags – Quadruple-package with filter: 16 JD.

Promotion Strategy

The promotion strategy aims at increasing the realization of the targeted hospitals for the project's products in order to maximize the demand and acquire the market share expected for the project. The following table shows the content of the promotional message designed for the targeted segments and the promotional tools used to deliver the promotional message.

| Targeted Segment | Promotional Message | Promotional Tool |
|--|--|---|
| Hospitals in the local market and the targeted exporting markets | Competitive price of the products and promotional incentives that could be offered. High quality of the products. Ability to provide the products in the required quantities and time. Combination of the blood transfusion bags with the required sizes. | The one-to-one meetings with the decision makers. Promotion materials. Technical and financial proposals on the email. Website. Social media. |

Distribution (Place) Strategy

The distribution strategy of the project in the local market seeks to ensure the delivery of the products required quantities and to the targeted hospitals in excellent condition and types according to the signed contracts and the agreed deadlines in order to assist in reducing the total distribution costs and the potential risks. Much importantly, it should be taken into account the nature of the consumer products of the project and the nature of the targeted hospital; therefore, it is preferred to follow the direct distribution method (project →final customer). Having said that, this strategy, if implemented, is expected to generate high margin of the profit for the project, which will be more than such profit achieved alternative in case of indirect distribution through the agents. Further, this also will contribute to build and strengthen new relations with the hospitals and in a way that best serves the interests of all marketing parties of the project and improves the sale levels thereof. However, this method, if adopted, requires considerable investment in owning fleet of vehicles to deliver the products and to manage the maintenance and operation costs occurred.

3.6 The Expected Market Share

The following table shows the market share of the project according to the following assumptions

- Targeting all hospitals operating in the health sectors with the local market and exporting markets.
- The percentage of the local sales of the project is 30% out of the total sales 70% for the export sales.
- The maximum planned production capacity of the project is 3 million blood transfusion bags per a year given that the production lines of the factory will be operating by one shift for 8 working hours beginning from the first year and forward.
- The capacity utilize rate for the plant is as follows:

Table 18: Capacity Utilization Rate

| Capacity Utilization | Years | | | | | | | | | |
|----------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Rate | 40% | 42% | 44% | 47% | 49% | 51% | 54% | 57% | 60% | 63% |

- The main production is based upon the products of the blood transfusion bags from the single package and the quadruple package without filter and the quadruple package with filter, as the production percentage of these products from the actual planned capacity of the project is around (5%), (50%) and (45%) respectively, throughout the upcoming ten years.
- Average price of the blood transfusion bags – single package (450 ml) should be 3 JD with growth rate of 1% annually.
- Average price of the blood transfusion bags – quadruple package without filter (450 ml) should be 5.5 JD with growth rate of 1% annually.
- Average price of the blood transfusion bags – quadruple package with filter (450 ml) should be 16 JD with growth rate of 1% annually.
- Working hours should be 8 hours/day.
- Working days should be (350) days per a year.
- It is expected that the work in the proposed project begins in 2020.
- The single package contains one bag and the quadruple package contains four bags.
- The growth rate of demand for the blood transfusion bags has been estimated at percentage of 3% annually from 2017 up to 2020, so that the expected future demand volume could be as follows:

| | 2017 | 2018 | 2019 | 2020 |
|------------------------------------|---------|---------|---------|---------|
| Single package | 44,702 | 46,043 | 47,424 | 48,847 |
| Quadruple Package – without filter | 409,940 | 422,238 | 434,905 | 447,952 |
| Quadruple Package – with filter | 365,444 | 376,407 | 387,699 | 399,330 |
| Future Demand Volume (package) | 820,086 | 844,688 | 870,029 | 896,130 |

- It is assumed that the trend of growth in the future demand volume in the market of blood transfusion bags products will remain the same with a rate of (3%) throughout the project lifetime.

Table 19: Expected Sales

| Statement | Years | | | | | | | | | |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Single package | 19,500 | 20,475 | 21,499 | 22,574 | 23,702 | 24,887 | 26,132 | 27,438 | 28,810 | 30,251 |
| Quadruple package – without filter | 195,000 | 204,750 | 214,988 | 225,737 | 237,024 | 248,875 | 261,319 | 274,385 | 288,104 | 302,509 |
| Quadruple package – with filter | 175,500 | 184,275 | 193,489 | 203,163 | 213,321 | 223,987 | 235,187 | 246,946 | 259,293 | 272,258 |
| Single package price | 3 | 3.03 | 3.06 | 3.09 | 3.12 | 3.15 | 3.18 | 3.22 | 3.25 | 3.28 |
| Quadruple package price - without filter | 5.5 | 5.56 | 5.61 | 5.67 | 5.72 | 5.78 | 5.84 | 5.9 | 5.96 | 6.02 |
| Quadruple package price - with filter | 16 | 16.16 | 16.32 | 16.48 | 16.65 | 16.82 | 16.98 | 17.15 | 17.33 | 17.5 |
| Total revenues –thousand JD | 3,939,000 | 4,177,310 | 4,430,037 | 4,698,054 | 4,982,286 | 5,283,715 | 5,603,379 | 5,942,384 | 6,301,898 | 6,683,163 |

4. Technical Study

4.1 The Designed Project Capacity

The project planned capacity represented in number of the blood transfusion bags expected to be produced reaches around 3 million bags distributed as shown in the table below.

Table 20: Project Planned Capacity

| Product | Quantity/bag |
|---|--------------|
| Single package of blood transfusion bag | 150,000 |
| Quadruple package of blood transfusion bag – with filter | 1,500,000 |
| Quadruple package of blood transfusion bag – without filter | 1,350,000 |

In order to achieve the planned capacity estimated for the project, it is necessary to purchase plot in area of 6.000 m², of which around (1.200 m²) should be allocated for the production hall, around (1.000 m²) for the warehouses, (500 m²) for the management offices, (500 m²) for the laboratories and (300 m²) for the other facilities as shown in the below table.

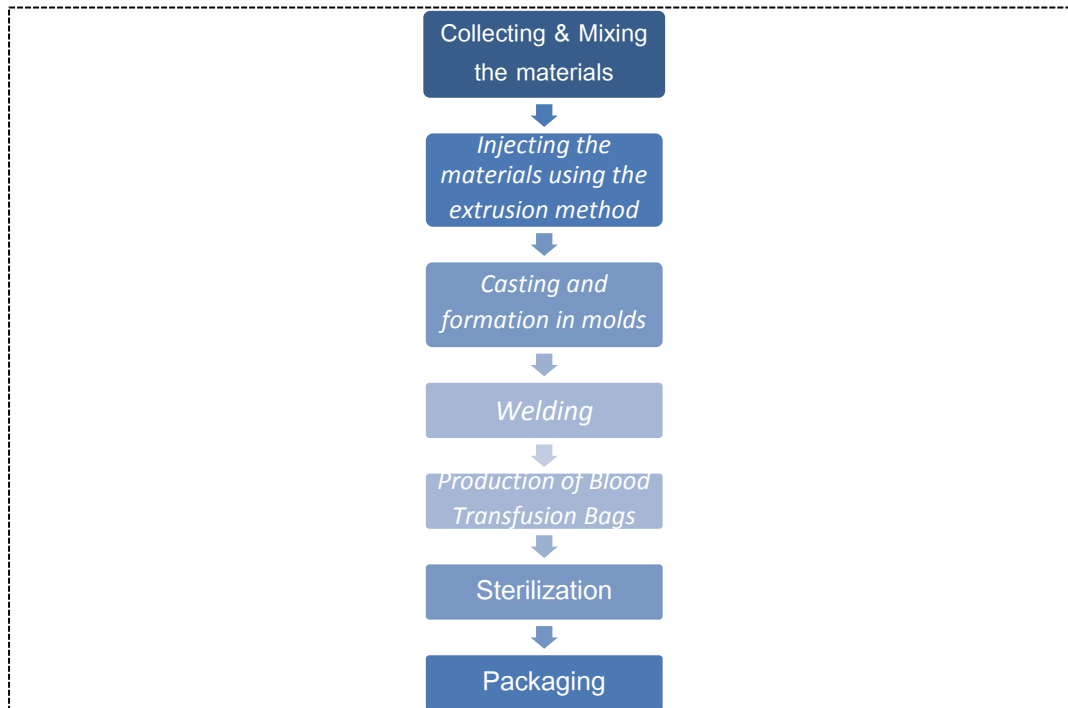
Table 21: Areas required for the project

| Item | Unit |
|---|-------|
| Plot m ² room | 6.000 |
| Production m ² | 1.200 |
| Warehouses m ² | 1.000 |
| Laboratories, quality control and technical facilities m ² | 500 |
| Management offices m ² | 500 |
| Other facilities m ² | 300 |

4.2 Production Process

The following figure shows the chart of the production process for the blood transfusion bags. In the beginning, the materials are collected and mixed and they injected using the extrusion method. Thereafter, such material is casted and formed in molds, the bags are produced and the bags are sterilized, covered and stored for transport and sale.

Figure 3: Chart of the process of production of Blood Transfusion Bags



The following steps should be taken to complete the production process:

1. Materials

- Purchasing the raw materials and examining the quality thereof.
- Receiving the purchased raw materials, registering and storing in the warehouses.
- Preparing the mixtures of the raw materials to be ready for production.

2. Production

- Entering the raw materials into the product lines.
- Producing blood transfusion bags according to the approved specifications.
- Examining the quality of the final products and ensuring the conformity thereof with the determined standards and specifications.
- Packaging and sterilizing the blood transfusion bags.
- Packaging the finished products from the blood transfusion bags.
- Storing the finished products.

4.3 The Required Fixed Assets

The following table shows the financial resources required for the project

Table 22: Area Required for the Project

| Item | Statement | Price (JD) | Value (JD) |
|---------------------------|-----------|------------|------------------|
| Plot m ² | 6.000 | 50 | 300.000 |
| Buildings m ² | 2.500 | 350 | 875.000 |
| Warehouses m ² | 1.00 | 200 | 200.000 |
| Machineries & Supplies | | | 2.500.000 |
| Transport means | 3 | 30.000 | 90.000 |
| IT | 1 | 20.000 | 20.000 |
| Labs and other assets | | | 100.000 |
| Total | | | 4,085,000 |

* The figures are estimated based upon the market study.

4.4 The Required Human Resources for the project

The following table shows the human resources required for the project where the number of the required employees is around (49) employees with total salaries in an amount of (346,200) JOD.

Table 23: Human Resources Required for the Project

| Item | Employees No. | Salary | Total Salary | Operational | Administrative |
|--------------------------------|---------------|---------------|----------------|----------------|----------------|
| Director General | 1 | 3,000 | 36,000 | - | 36,000 |
| Plant Manager | 1 | 2,000 | 24,000 | 24,000 | - |
| Finance and Accounting Manager | 1 | 1500 | 18,000 | - | 18,000 |
| Marketing Manager | 1 | 1500 | 18,000 | - | 18,000 |
| Quality Control Manager | 1 | 1500 | 18,000 | 18,000 | - |
| Maintenance Manager | 1 | 1500 | 18,000 | 18,000 | - |
| Accountant | 1 | 600 | 7,200 | - | 7,200 |
| Marketing Officer | 2 | 800 | 19,200 | - | 19,200 |
| Purchases Officer | 1 | 450 | 5,400 | - | 5,400 |
| Storekeeper | 2 | 400 | 9,600 | - | 9,600 |
| IT Officer | 1 | 600 | 7,200 | - | 7,200 |
| Laboratory Technician | 2 | 800 | 19,200 | 19,200 | - |
| Production Supervisor | 2 | 1000 | 24,000 | 24,000 | - |
| Maintenance Officer | 2 | 600 | 14,400 | 14,400 | - |
| Workers | 30 | 300 | 108,000 | 108,000 | - |
| 49 | | 16,550 | 346,200 | 225,600 | 120,600 |

The following table shows the general job description of the main jobs required in the project

Table 24: General Job Description for main jobs in the project

| Job | Job description |
|---------------------------------------|---|
| Director General | The director general is required to plan, organize, coordinate and control all matters related to the internal management of the plant, participate in determining the hospital's policy and all work-related matters, review and oversee the analysis process of the reports submitted to the management, study and develop solution for the problems that arise, supervise the employees technically and administratively and raise their efficiency and observe the application of the instructions of occupational health and safety. |
| Plant Manager | Developing the plans, strategies and general objectives for the production activities, quality control and research; developing the products; maintaining and supervising the execution thereof within the available capabilities and means at the highest degree of effectiveness and quality; supervising the progress of operations related to the factory; following up the works on part of all employees; ensuring the safety and security of these works; discovering the problems and solving the same and coordinating with the various departments to ensure the good progress of operations thereof as required. |
| Production supervisor | Developing production plans; preparing operation orders; supervising the execution thereof according to the required specifications and quality and preparing the required product reports in a timely manner. |
| Quality control Manager | Ensuring the quality of the raw materials, packaging materials and final products and the conformity thereof with the required and determined specifications; preparing the examination reports required from time to time and supervising the devices gauging. |
| Finance and Accounting Manager | Supervising the financial policy of the company; managing the cash flow; preparing the final accounts and the estimated budget; ensuring the soundness of execution of the systems and accounting procedures; issuing the financial reports; controlling the financial resources and expenses and preparing the estimated budgets and settlements for accounts of the company with the local and external banks. |
| Marketing Manager | Developing the suitable plans, objectives and marketing strategies; supervision the preparation of the plans related to the internal and external sales and approving the same according to the trends and capability of the company; guiding the marketing studies that aim at following up the activities of the competitors; opening new marketing outlets and strengthening the relationships with the clients and concerning about their affairs. |
| Maintenance Manager | Developing the plans, strategies and general objectives for activities of operation, maintenance and supervision on the execution thereof within the capabilities and means available in largest degree of the effectiveness and |

| | |
|--------------------------|--|
| | <p>quality; supervising the progress of the maintenance operations; following up the works made by all technicians; ensuring the safety and security of these works; discovering the problems and solving the same; ensuring the good progress of operations thereof as required and marketing and promoting the company.</p> |
| Sales Officer | <p>Executing the polices and executive programs of managing the sales; executing the approved sales policy and all work orders; executing all tasks requested by the marketing director, sales director, and marketing and sales coordinators within limits of the working in the department of marketing and sales; presenting weekly report to the marketing and sales</p> |
| Accountant | <p>Recording the accounting entries, preparing the monthly account statements to be sent to the clients and suppliers; reviewing and comparing the bank accounts in the registers with the account statement at the banks.</p> |
| Purchases Officer | <p>Organizing and keeping the registers and forms of managing the purchases and entering the related date on behalf of the purchases director in case of his absence; participating in planning and preparing the executive programs for managing the purchases; training the individuals working in the purchases department on their works; ensuring that the suppliers are capable to satisfy the requirements of the purchase orders and quotation requests; writing the register of recording the suppliers and participating in preparing the budge of managing the purchases.</p> |
| Storekeeper | <p>Supervising the demand on the materials when the balances thereof reach to the re-order point; following up the preparation of the items cards, registering the necessary information on the same, updating the same continuously; duly organizing, registering and receiving the lent materials and the custody from the warehouse to the employees; assuming the responsibility for the warehouse assets and considering the application of bases of general safety and occupational health in the warehouse.</p> |

4.5 Special Conditions

The following table shows the general and special conditions for constructing factories of medical supplies that shall be fulfilled to develop and execute the project.

Table 25: General and special conditions for approval of location of medical supplies factory:

| Statement | Conditions |
|-------------------------------|---|
| Service presentation location | <p>Directorate of Medical Devices and Supplies / head office of the Food and Drug Administration.</p> <p>After procuring the necessary licenses from the concerned authorities such as the Directorate of institutions and professions / Ministry of Health, Ministry of Industry and Trade, Department of Lands and Municipality (in Amman) / DMA (outside Oman) and Ministry of Environment.... etc. The investor presents the manufacturing location file to the Directorate of Medical Devices and Supplies and pay the determined fees.</p> <p>The manufacturing location file shall be transferred to department of control and inspection / section of factories at the drugs directorate.</p> <p>The assigned inspection team shall inspect the manufacturing location for purposes of approval on beginning the production followed by the second inspection after beginning the production for purposes of granting the GMP Certificate.</p> <p>After the location fulfills the required conditions, GMP certificate shall be issued by the department of control and inspection at the drugs department.</p> <p>The investor presents the GMP certificate with the file of the processed cosmetics intended to be registered at the Directorate of Medical Devices and Supplies, which shall be prepared according to the list of "basis of licensing the trading in the medical supplies", if it is a medical supply or "basis of licensing the trading in the cosmetics, if it is a cosmetic" mentioned in website of the authority - www.jfda.jo.</p> <p>The cosmetics file shall be presented to the medical supplies committee or the cosmetics committee to evaluate and study the cosmetics according to the basis mentioned on the website www.jfda.jo. Official letter shall be issued by the committee after evaluating the files with the acceptance or rejection with expressing the reasons or shortcomings need to be completed.</p> |
| Note | <p>After procuring the GMP certificate, the license of registering the cosmetics takes 30 business days and if the cosmetic requires laboratory analysis, the time shall be calculated as 30 days after issuing the analysis result.</p> |

4.6 The Required Licenses

The following table shows the necessary licenses to be procured from the various authorities to execute the project.

Table 26: Project Required Licenses

| Statement | Analysis |
|---------------------------------|--|
| Company registration | <ul style="list-style-type: none"> Ministry of Industry and Trade. |
| Construction and Plant Building | <ul style="list-style-type: none"> The relevant municipality. Jordan Engineers Association |
| Operation | Social security, income and sales tax, Ministry of Labor, Ministry of Health, Ministry of Justice and the relevant municipality. |

4.7 Project Timetable

The below table shows time frame designed for executing the project, which is estimated at 20 months as follows:

| | First year (months) | | | | | | | | | | Second year (months) | | | | | | | | | |
|------------------------------------|---------------------|---|---|---|---|---|---|---|---|----|----------------------|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Studies | ■ | ■ | ■ | | | | | | | | | | | | | | | | | |
| Approvals and company registration | | | | ■ | ■ | ■ | | | | | | | | | | | | | | |
| Constructions & Building | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | |
| Preparation & Furnishing | | | | | | | | | | | | | | ■ | ■ | | | | | |
| Trial operation and employment | | | | | | | | | | | | | | | | | ■ | ■ | ■ | ■ |
| Total period | 20 months | | | | | | | | | | | | | | | | | | | |

5. Financial Study

5.1 Financial Assumptions

The following table illustrates the financial assumptions of the project.

Table 27: 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 | 3 months of annual cost |
| Pre-Operating Expenses | 2% of total investment |
| Tax Rate | 5% |
| Exemptions | Advantages, incentives and tax exemptions such as income tax, export exemptions, and machines and equipment's exemptions under the investment laws of industrial cities |
| Raw Materials Cost | 5% of total revenues |
| Staff Benefits | 25% of salaries |
| Annual Salaries Increase | 5% |
| Assets Depreciation Rate | 4%-20% of the asset value |
| Maintenance Cost | 5% of investment |
| Growth Rate Of Expenses | 5% |
| Electricity Cost | 6% of total revenues |
| Accounts Receivable | Revenues amount for 60 days |
| Inventory | 24% of raw materials cost |

5.2 Investment Cost

The project's Investment cost is estimated at JD 4.870 million distributed among fixed assets of JD 4.085 million, working capital of JD 688 thousand, and pre-operating expenses JD 97 thousand. The following table shows the project's Investment cost.

Table 28: the project's investment cost

| Item | Value (in thousand JD) |
|------------------------|------------------------|
| Fixed assets | 4,085 |
| Pre-operating expenses | 97 |
| Working capital | 688 |
| Total | 4,870 |

5.3 Financing

The project will be financed with the shareholders by 75% which is estimated at about JD 3.652 million, while the other 25% of the project investment cost will be financed through bank loans of about JD 1.217 million.

Table 29: Project financing schedule

| Item | Value (in thousand JD) | % |
|--------------|------------------------|-------------|
| Equity | 3,652.8 | 75% |
| Loan | 1,217.6 | 25% |
| Total | 4,870 | 100% |

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 3.9 million, and increased to reach up to JD 6.6 million in the tenth year.

Table 30: The Expected Revenues

| Statement | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Single package | 19,500 | 20,475 | 21,499 | 22,574 | 23,702 | 24,887 | 26,132 | 27,438 | 28,810 | 30,251 |
| Quadruple package – without filter | 195,000 | 204,750 | 214,988 | 225,737 | 237,024 | 248,875 | 261,319 | 274,385 | 288,104 | 302,509 |
| Quadruple package – with filter | 175,500 | 184,275 | 193,489 | 203,163 | 213,321 | 223,987 | 235,187 | 246,946 | 259,293 | 272,258 |
| Price of Single package | 3.0 | 3.03 | 3.06 | 3.09 | 3.12 | 3.15 | 3.18 | 3.22 | 3.25 | 3.28 |
| Price of Quadruple package – without filter | 5.50 | 5.56 | 5.61 | 5.67 | 5.72 | 5.78 | 5.84 | 5.90 | 5.96 | 6.02 |
| Price of Quadruple package – with filter | 16.0 | 16.16 | 16.32 | 16.48 | 16.65 | 16.82 | 16.98 | 17.15 | 17.33 | 17.50 |
| Total Revenues – Thousand JD | 3,939,000 | 4,177,310 | 4,430,037 | 4,698,054 | 4,982,286 | 5,283,715 | 5,603,379 | 5,942,384 | 6,301,898 | 6,683,163 |

5.5 The Projected Costs

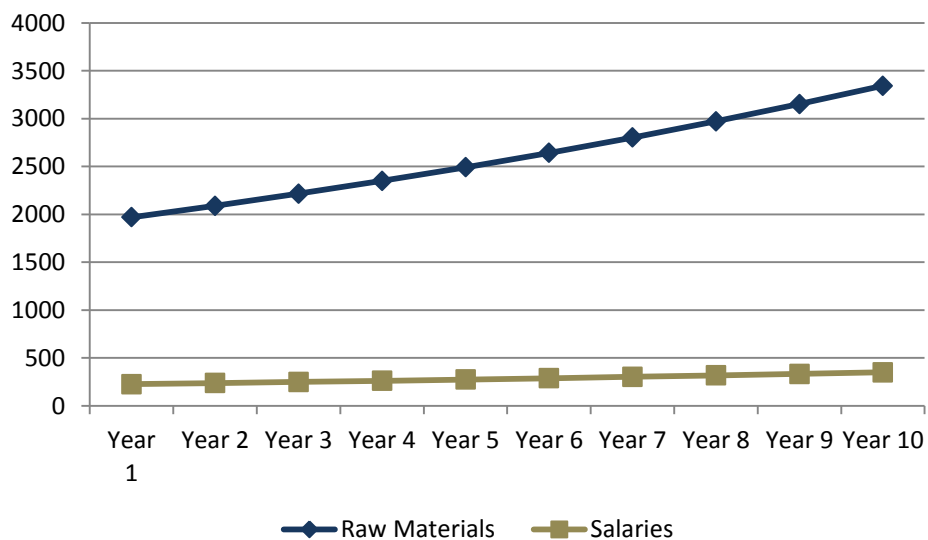
Operating Costs

The following table shows the project's operating costs according to the previous assumption over ten years. Raw Materials in Year 1 amounted to JD 1.9 million which increase to reach JD 3.3 million in Year ten. Moreover, the Salaries Cost amount to JD 225,000 in Year 1 which increases to JD 350,000 in the year 10.

Table 31: 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 | 1969.5 | 2088.7 | 2215.0 | 2349.0 | 2491.1 | 2641.9 | 2801.7 | 2971.2 | 3150.9 | 3341.6 |
| Electricity | 236.3 | 250.6 | 265.8 | 281.9 | 298.9 | 317.0 | 336.2 | 356.5 | 378.1 | 401.0 |
| Salaries | 225.6 | 236.9 | 248.7 | 261.2 | 274.2 | 287.9 | 302.3 | 317.4 | 333.3 | 350.0 |
| Staff Benefits | 56.4 | 59.2 | 62.2 | 65.3 | 68.6 | 72.0 | 75.6 | 79.4 | 83.3 | 87.5 |
| Shipping and Transportation Expenses | 220.6 | 233.9 | 248.1 | 263.1 | 279.0 | 295.9 | 313.8 | 332.8 | 352.9 | 374.3 |
| IT Cost | 5.0 | 5.3 | 5.5 | 5.8 | 6.1 | 6.4 | 6.7 | 7.0 | 7.4 | 7.8 |
| Depreciation | 335.0 | 335.0 | 335.0 | 335.0 | 335.0 | 335.0 | 335.0 | 335.0 | 335.0 | 335.0 |
| Maintenance | 20.4 | 21.4 | 22.5 | 23.6 | 24.8 | 26.1 | 27.4 | 28.7 | 30.2 | 31.7 |
| Cars and distribution expenses | 18.0 | 18.9 | 19.8 | 20.8 | 21.9 | 23.0 | 24.1 | 25.3 | 26.6 | 27.9 |
| Others | 19.7 | 20.9 | 22.2 | 23.5 | 24.9 | 26.4 | 28.0 | 29.7 | 31.5 | 33.4 |
| Total | 3086.8 | 3249.9 | 3422.7 | 3605.7 | 3799.6 | 4005.1 | 4222.8 | 4453.4 | 4697.8 | 4956.7 |

Figure 4: Projected Operating Costs of the Project



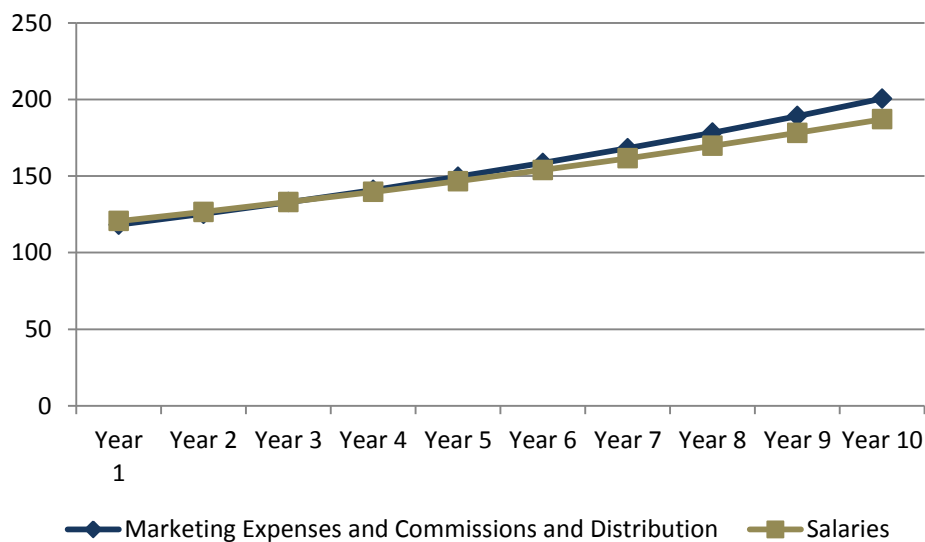
Administrative Expenses

The following table shows the projected administrative expenses of the project. Employees' salaries reach JD 120 thousand in the first year and increase to JD 187 thousand in the tenth year. The Marketing Expenses and Commissions and Distribution are about JD 118 thousand in the first year and increase to reach JD 200 thousand in the tenth year.

Table 32: 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 | 120.6 | 126.6 | 133.0 | 139.6 | 146.6 | 153.9 | 161.6 | 169.7 | 178.2 | 187.1 |
| Staff Benefits | 30.2 | 31.7 | 33.2 | 34.9 | 36.6 | 38.5 | 40.4 | 42.4 | 44.5 | 46.8 |
| Stationery | 6.0 | 6.3 | 6.6 | 6.9 | 7.3 | 7.7 | 8.0 | 8.4 | 8.9 | 9.3 |
| Professional Fees | 3.0 | 3.2 | 3.3 | 3.5 | 3.6 | 3.8 | 4.0 | 4.2 | 4.4 | 4.7 |
| Marketing Expenses and Commissions and Distribution | 118.2 | 125.3 | 132.9 | 140.9 | 149.5 | 158.5 | 168.1 | 178.3 | 189.1 | 200.5 |
| Other Expenses | 6.0 | 6.3 | 6.6 | 6.9 | 7.3 | 7.7 | 8.0 | 8.4 | 8.9 | 9.3 |
| Amortization | 97.4 | | | | | | | | | |
| Total | 381.3 | 299.4 | 315.6 | 332.8 | 350.9 | 370.1 | 390.2 | 411.5 | 433.9 | 457.6 |

Figure 5: General and Administrative Expenses



5.6 Projected Financial Statements

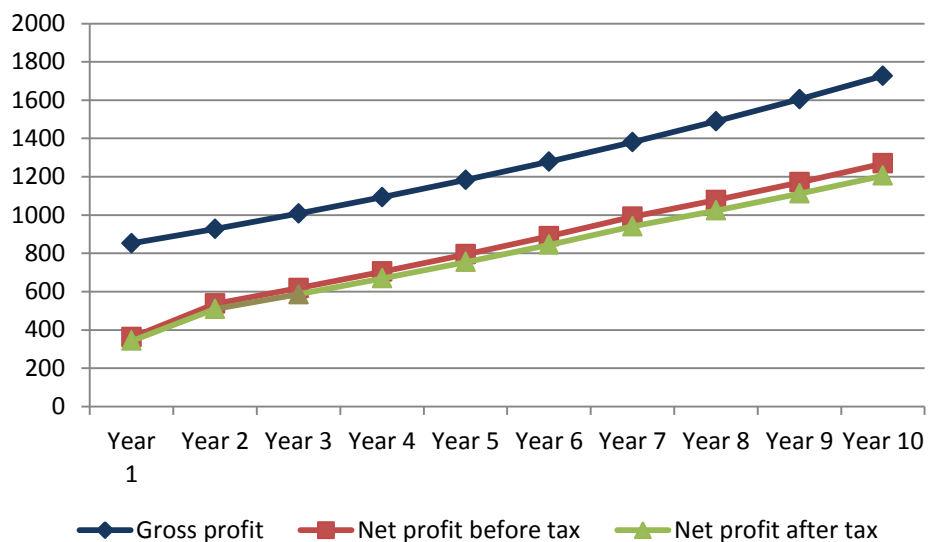
Income Statement

The following table shows the projected income statement of the project. It indicates that gross profit will increase from JD 852 thousand in the first year to JD 1.7 million in the tenth year. The net profit before tax will also increase from JD 361 thousand in the first year to JD 1.3 million in the tenth year, and the net profit after tax will increase from JD 343 thousand in the first year to JD 1.2 million in the tenth year.

Table 33: 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 | 3,939.0 | 4,177.3 | 4,430.0 | 4,698.1 | 4,982.3 | 5,283.7 | 5,603.4 | 5,942.4 | 6,301.9 | 6,683.2 |
| Operating costs (cost of sales) | 3,086.8 | 3,249.9 | 3,422.7 | 3,605.7 | 3,799.6 | 4,005.1 | 4,222.8 | 4,453.4 | 4,697.8 | 4,956.7 |
| Gross profit | 852.2 | 927.4 | 1,007.4 | 1,092.3 | 1,182.6 | 1,278.6 | 1,380.6 | 1,489.0 | 1,604.1 | 1,726.5 |
| Administrative expenses | 381.3 | 299.4 | 315.6 | 332.8 | 350.9 | 370.1 | 390.2 | 411.5 | 433.9 | 457.6 |
| Net profit | 470.8 | 628.0 | 691.7 | 759.5 | 831.7 | 908.6 | 990.4 | 1,077.5 | 1,170.2 | 1,268.9 |
| financial expenses | 109.6 | 91.6 | 73.6 | 55.6 | 37.6 | 19.6 | - | - | - | - |
| Net profit before tax | 361.2 | 536.5 | 618.1 | 703.9 | 794.1 | 889.0 | 990.4 | 1,077.5 | 1,170.2 | 1,268.9 |
| Tax | 18.1 | 26.8 | 30.9 | 35.2 | 39.7 | 44.4 | 49.5 | 53.9 | 58.5 | 63.4 |
| Net profit after tax | 343.2 | 509.6 | 587.2 | 668.7 | 754.4 | 844.5 | 940.9 | 1,023.6 | 1,111.7 | 1,205.4 |

Figure 6: Projected Income Statement



Projected Balance Sheet

The following table shows the projected balance sheet of the project during the first five years. It indicates that total assets will decrease from JD 4.8 million in the year of incorporation to about JD 7.3 million in the tenth year. The Total liabilities will decrease from JD 1.3 million in the first year to about JD 496 thousand in the tenth year. The Shareholders' Equity will increase from JD 3.6 million in the year of corporation to JD 6.8 in the tenth year.

Table 34: 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 |
| Assets | | | | | | | | | | | |
| Cash | 688 | 158 | 440 | 750 | 1,089 | 1,268 | 1,651 | 2,286 | 2,950 | 3,644 | 4,370 |
| Receivables | | 657 | 696 | 738 | 783 | 830 | 881 | 934 | 990 | 1,050 | 1,114 |
| Inventory | | 473 | 501 | 532 | 564 | 598 | 634 | 672 | 713 | 756 | 802 |
| Others | - | 79 | 84 | 89 | 94 | 100 | 106 | 112 | 119 | 126 | 134 |
| Total Current Assets | 688 | 1,366 | 1,721 | 2,109 | 2,529 | 2,796 | 3,271 | 4,004 | 4,772 | 5,576 | 6,419 |
| Fixed Assets | 4,182 | 4,182 | 4,182 | 4,182 | 4,182 | 4,372 | 4,372 | 4,372 | 4,372 | 4,372 | 4,372 |
| Cumulative Depreciation | - | 432 | 767 | 1,102 | 1,437 | 1,772 | 2,107 | 2,442 | 2,777 | 3,112 | 3,447 |
| Net Fixed Assets | 4,182 | 3,750 | 3,415 | 3,080 | 2,745 | 2,600 | 2,265 | 1,930 | 1,595 | 1,260 | 925 |
| Total Assets | 4,870 | 5,116 | 5,136 | 5,189 | 5,274 | 5,396 | 5,536 | 5,934 | 6,367 | 6,836 | 7,344 |
| Shareholders Equity and Liabilities | | | | | | | | | | | |
| Accrued Expenses and Payables | | 309 | 325 | 342 | 361 | 380 | 401 | 422 | 445 | 470 | 496 |
| Long Term Loans | 1,218 | 1,018 | 818 | 618 | 418 | 218 | - | - | - | - | - |
| Total Liabilities | | 1,326 | 1,143 | 960 | 778 | 598 | 401 | 422 | 445 | 470 | 496 |
| Shareholders Contributions | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 |
| Retained Earnings | | 137 | 341 | 576 | 844 | 1,145 | 1,483 | 1,859 | 2,269 | 2,714 | 3,196 |
| Shareholders' Equity | 3,653 | 3,790 | 3,994 | 4,229 | 4,496 | 4,798 | 5,136 | 5,512 | 5,922 | 6,366 | 6,848 |
| Shareholders Equity and Liabilities | 4,870 | 5,116 | 5,136 | 5,189 | 5,274 | 5,396 | 5,536 | 5,934 | 6,367 | 6,836 | 7,344 |

Cash Flow Statement

The following table shows the projected cash flow statement of the project during the first ten years. It indicates a loss in cash flow from operation about JD (124) thousand in the first year and it will reach JD 1.4 million in the tenth year; while the Cash at the ending period will increase from JD 688 thousand in the year of incorporation to JD 4.3 million in the tenth year.

Table 35: 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 |
| Operation Activities | | | | | | | | | | | |
| Net Profit | - | 343 | 510 | 587 | 669 | 754 | 845 | 941 | 1,024 | 1,112 | 1,205 |
| Depreciation | - | 432 | 335 | 335 | 335 | 335 | 335 | 335 | 335 | 335 | 335 |
| Change In Working Capital | - | (899) | (57) | (60) | (64) | (68) | (72) | (76) | (81) | (86) | (91) |
| Cash Flow From Operation | - | (124) | 788 | 862 | 940 | 1,022 | 1,108 | 1,200 | 1,278 | 1,361 | 1,449 |
| Investing Activities | | | | | | | | | | | |
| Fixed Assets | (4,182) | - | - | - | - | (190) | - | - | - | - | - |
| Cash From Investing Activities | (4,182) | - | - | - | - | (190) | - | - | - | - | - |
| Financing Activities | | | | | | | | | | | |
| Capital (Equity) | 3,653 | - | | | | | | | | | |
| Loan | 1,218 | (200) | (200) | (200) | (200) | (200) | (218) | - | - | - | - |
| Dividends | | (206) | (306) | (352) | (401) | (453) | (507) | (565) | (614) | (667) | (723) |
| Cash Flow From Financing Activities | 4,870 | (406) | (506) | (552) | (601) | (653) | (724) | (565) | (614) | (667) | (723) |
| Net Cash Flow | 688 | (530) | 282 | 310 | 339 | 179 | 383 | 635 | 664 | 694 | 726 |
| Cash At The Beginning Period | 0 | 688 | 158 | 440 | 750 | 1,089 | 1,268 | 1,651 | 2,286 | 2,950 | 3,644 |
| Cash At The Ending Period | 688 | 158 | 440 | 750 | 1,089 | 1,268 | 1,651 | 2,286 | 2,950 | 3,644 | 4,370 |

5.7 Financial, Economic and Social Analysis

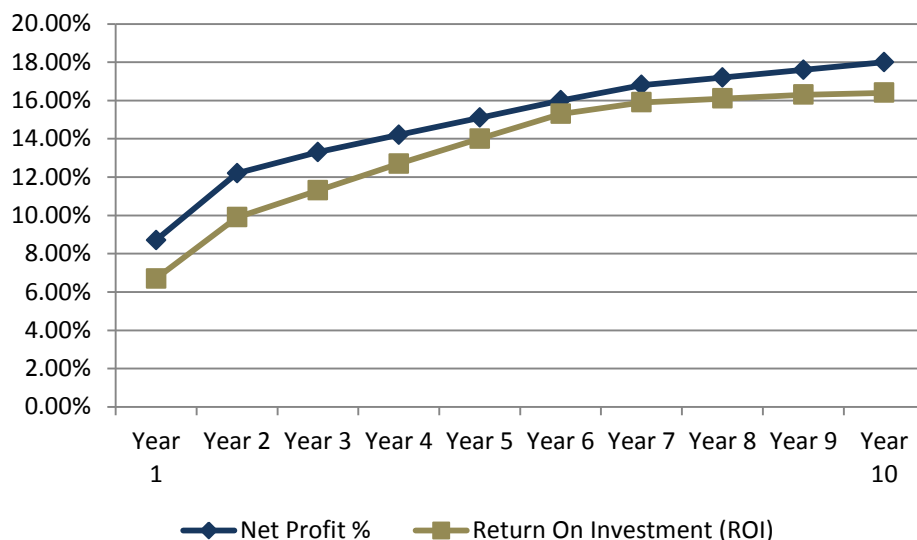
Financial Analysis

The following table shows the financial analysis of the project. It indicates that the net profit ratio will increase from 8.7% in the first year to 18 % in the tenth year, and the return on investment will increase from 6.7% in the first year to 16.4% in the tenth year.

Table 36: 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 | 5,116 | 5,136 | 5,189 | 5,274 | 5,396 | 5,536 | 5,934 | 6,367 | 6,836 | 7,344 |
| Revenues | 3,939 | 4,177 | 4,430 | 4,698 | 4,982 | 5,284 | 5,603 | 5,942 | 6,302 | 6,683 |
| Profits | 343 | 510 | 587 | 669 | 754 | 845 | 941 | 1,024 | 1,112 | 1,205 |
| Capital (Equity) | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 | 3,653 |
| Net Profit % | 8.7% | 12.2% | 13.3% | 14.2% | 15.1% | 16.0% | 16.8% | 17.2% | 17.6% | 18.0% |
| Return On Investment (ROI) | 6.7% | 9.9% | 11.3% | 12.7% | 14.0% | 15.3% | 15.9% | 16.1% | 16.3% | 16.4% |
| Return On Capital (ROC) | 9.4% | 14.0% | 16.1% | 18.3% | 20.7% | 23.1% | 25.8% | 28.0% | 30.4% | 33.0% |
| Net Profit On Revenues | 8.7% | 12.2% | 13.3% | 14.2% | 15.1% | 16.0% | 16.8% | 17.2% | 17.6% | 18.0% |
| Assets Turnover (Time) | 0.77 | 0.81 | 0.85 | 0.89 | 0.92 | 0.95 | 0.94 | 0.93 | 0.92 | 0.91 |

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 21%. 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 5.8 million. It exceeds the net present value with JD 3.6 million, which means the economic feasibility of the project.
- The profitability index of the project reached 1.60 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 6.1 years.

Table 37: 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 | (3,653) | (324) | 588 | 662 | 740 | 822 | 890 | 1,200 | 1,278 | 1,361 | 1,449 |
| terminal value | | | | | | | | | | | 6,848 |
| Net Cash flow | (3,653) | (324) | 588 | 662 | 740 | 822 | 890 | 1,200 | 1,278 | 1,361 | 8,298 |
| Internal Rate of Return (IRR) | %20.4 | | | | | | | | | | |
| present Value | 5,848 | | | | | | | | | | |
| Net present value | 2,195 | | | | | | | | | | |
| Profitability Index (Time) | 1.60 | | | | | | | | | | |
| Payback period (Year) | 6.10 | | | | | | | | | | |

Social Analysis

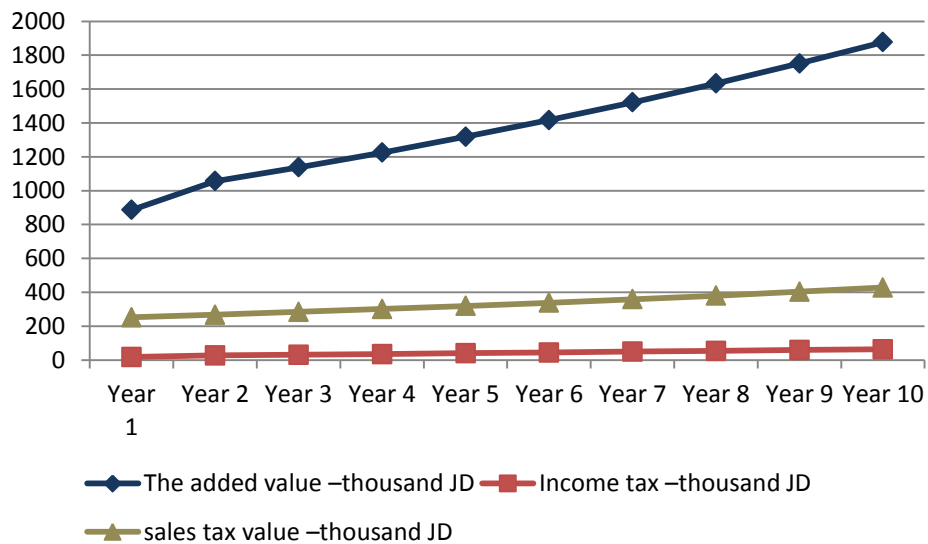
The following table shows the social analysis of the project. It is noticed that the number of staff required for the project will increase from 55 employees in the first year to 66 employees in the tenth year.

The added value of the project will also increase from JD 886 thousand in the first year to JD 1.8 million in the tenth year. The income tax will also increase from JD 18 thousand to reach JD 63 thousand in the tenth year.

Table 38: 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 | 55 | 56 | 57 | 58 | 60 | 61 | 62 | 63 | 64 | 66 |
| Jordanian employees | 55 | 56 | 57 | 58 | 60 | 61 | 62 | 63 | 64 | 66 |
| The added value –thousand JD | 886 | 1,056 | 1,138 | 1,225 | 1,318 | 1,416 | 1,521 | 1,633 | 1,751 | 1,877 |
| Income tax –thousand JD | 18 | 27 | 31 | 35 | 40 | 44 | 50 | 54 | 59 | 63 |
| sales tax value –thousand JD | 252 | 267 | 284 | 301 | 319 | 338 | 359 | 380 | 403 | 428 |
| Exports value / imports substitution | 788 | 835 | 886 | 940 | 996 | 1,057 | 1,121 | 1,188 | 1,260 | 1,337 |

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 39: Project Risk Matrix

| Risks | Type of Risks | Risk Assessment |
|------------------------|---|--|
| Financial Risks | <ul style="list-style-type: none"> ▪ 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. | <ul style="list-style-type: none"> ▪ The financial risks that may face the company are low, because the company deals with big enterprises ▪ The risk of currency exchange is moderate, because the company sales from foreign markets ▪ There is no risk of inflation because the company's pricing is based on a periodic basis |

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

| Risks | Type of Risks | Risk Assessment |
|--------------------------------|--|--|
| | <p>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"> ▪ Competition Risk Competition risk results from domestic and external competitors and reduces sales and profits. | |
| <p>Operational Risk</p> | <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"> ▪ 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 | <ul style="list-style-type: none"> ▪ 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 ▪ Competitive salaries will be paid ▪ Information security plan will be put in place to safely keep the company information |

| 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. | <ul style="list-style-type: none"> ▪ 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 40: Investment Increase by 10%

| Index | Base | Impact | Change |
|--|--------|--------|--------|
| Internal Rate of Return (IRR) | 20.4% | 18.7% | 1.7% |
| The Present Value at a discount rate of 13% (in Thousand JD) | 5847.9 | 5847.4 | 0.5 |
| Net Present Value at a discount rate of 13% (in Thousand JD) | 2195.1 | 1821.1 | 374.0 |
| Profitability Index (Time) | 1.6 | 1.5 | 0.1 |
| Payback period (Year) | 6.1 | 6.8 | -0.7 |
| The Net Profit Ratio – an average of 10 years | 14.9% | 14.8% | 0.2% |
| Return on Investment - an average of 10 years | 13.4% | 12.5% | 1.0% |
| Return on Capital – an average of 10 years | 21.9% | 19.7% | 2.2% |
| Net Profit On Revenues - an average of 10 years | 14.9% | 14.8% | 0.2% |
| Assets Turnover (Time) – an average of 10 years | 0.9 | 0.8 | 0.1 |
| The added value - an average of 10 years (in thousand JD) | 1382.0 | 1381.4 | 0.6 |
| income tax - an average of 5 (in thousand JD) | 42.0 | 41.7 | 0.4 |
| sales tax - an average of 10 years (in thousand JD) | 333.1 | 333.1 | 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 18.7%, 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 19.7%, 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 41: Reducing Revenues 10%

| Index | Base | Impact | Change |
|--|--------|--------|--------|
| Internal Rate of Return (IRR) | 20.4% | 9.9% | 10.5% |
| The Present Value at a discount rate of 13% (in Thousand JD) | 5847.9 | 2824.8 | 3023.1 |
| Net Present Value at a discount rate of 13% (in Thousand JD) | 2195.1 | -828.0 | 3023.1 |
| Profitability Index (Time) | 1.6 | 0.8 | 0.8 |
| Payback period (Year) | 6.1 | 9.9 | -3.8 |
| The Net Profit Ratio – an average of 10 years | 14.9% | 6.0% | 8.9% |
| Return on Investment - an average of 10 years | 13.4% | 6.3% | 7.2% |
| Return on Capital – an average of 10 years | 21.9% | 8.3% | 13.5% |
| Net Profit On Revenues - an average of 10 years | 14.9% | 6.0% | 8.9% |
| Assets Turnover (Time) – an average of 10 years | 0.9 | 1.0 | -0.1 |
| The added value - an average of 10 years (in thousand JD) | 1382.0 | 887.6 | 494.4 |
| income tax - an average of 5 (in thousand JD) | 42.0 | 16.0 | 26.0 |
| sales tax - an average of 10 years (in thousand JD) | 333.1 | 299.8 | 33.3 |

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 9.9%
- The new payback period is 9.9 years
- The return on capital reaches 8.3%

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 42: Increasing the Operating Costs by 10%

| Index | Base | Impact | Change |
|--|--------|--------|--------|
| Internal Rate of Return (IRR) | 20.4% | 12.5% | 7.9% |
| The Present Value at a discount rate of 13% (in Thousand JD) | 5847.9 | 3509.7 | 2338.2 |
| Net Present Value at a discount rate of 13% (in Thousand JD) | 2195.1 | -143.1 | 2338.2 |
| Profitability Index (Time) | 1.6 | 1.0 | 0.6 |
| Payback period (Year) | 6.1 | 8.7 | -2.6 |
| The Net Profit Ratio – an average of 10 years | 14.9% | 7.7% | 7.2% |
| Return on Investment - an average of 10 years | 13.4% | 8.2% | 5.3% |
| Return on Capital – an average of 10 years | 21.9% | 11.6% | 10.3% |
| Net Profit On Revenues - an average of 10 years | 14.9% | 7.7% | 7.2% |
| Assets Turnover (Time) – an average of 10 years | 0.9 | 1.0 | -0.1 |
| The added value - an average of 10 years (in thousand JD) | 1382.0 | 1006.7 | 375.3 |
| income tax - an average of 5 (in thousand JD) | 42.0 | 22.3 | 19.8 |
| sales tax - an average of 10 years (in thousand JD) | 333.1 | 333.1 | 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 12.5%
- The new payback period is 8.7 years
- The return on capital is 11.6%