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# Investment Opportunities Map

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Jordan Investment Board

## Cancer Drugs Production Project

Pharmaceutical Sector

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*May 26<sup>th</sup>, 2005*

<b>The Project at a Glance</b>	
Project Name	Cancer Drugs Production Project
Project Production Capacity	At US\$ 45 Million sales value / year
Manpower	260
Total Investment Cost	US\$ 51,000,000
Initial Working Capital	US\$ 4,300,000
Internal Rate of Return (IRR)	29 %
Breakeven Point	37 % of Production Capacity ( at Sales Value)

# Cancer Drugs Production Project

## 1. Introduction

### 1.1 Product Uses and Description

Cancer is one of the most dangerous diseases facing humanity. Medical treatment of cancer patients is very expensive. In Jordan, the government bears the cost of most cancer drugs.

The global cancer drugs market is forecasted to grow from US\$ 38.5 Billion in 2003 to US\$ 53.1 billion in 2009, reflecting an average annual growth rate of 5.5 %.

The following are the various cancer drug types and their market shares in 2003:

- Adjunct therapies : 41 %
- Cytotoxics : 26 %
- Hormonals: 17%
- Innovative agents: 16 %.

The proposed project aims to produce cancer drugs, which requires a license agreement with one of the international pharmaceutical companies to produce patented drugs, and to acquire the know how.

### 1.2 Potential Consumers:

- Ministry of Health.
- Other local health care entities.
- Export markets.

## 2. Market Aspects

### 2.1 Local Market

The Ministry of Health in Jordan procures cancer drugs through either official tenders or direct purchase orders from the local market agents. In both cases the drugs are imported (Table 1).

**Table (1)**  
**MOH. Annual Procurement of Cancer Drugs**  
**(US \$ Thousand)**

Year	Tenders	Local Direct procurement	Total
1999	1,025	275	1,300
2000	1,886	500	2,386
2001	2,103	234	2,337
2002	2,617	334	2,951
2003	1,639	923	2,562
<b>Average</b>	1,854	453	2,307

Source: Ministry of Health.

The average annual procurement of cancer drugs by the MOH during 1999 – 2003 amounted to US\$ 2.3 Million. Based on the pharmaceutical sectoral study data, procurements of MOH represented about 59 % (US\$ 30 Million) of the total governmental medical institutions procurement. Cancer drugs represented 7.7 % of MOH total annual procurement.

The total annual procurement of all governmental medical entities of cancer drugs is estimated at US\$ 3.9 million.

### 2.2 Forecasted Future Demand

The annual increase in demand for cancer drugs is based on the following factors:

- Annual population growth rate (2.8 %.)
- Improvement of health care levels.

Taking into consideration that the average annual increase in demand is 5 % , (Table 2) indicates the forecasted growth of the market size during the next 10 years.

**Table (2)**  
**Forecasted Future Demand**

Year	2005	2010	2015
US\$ Million	4.3	5.5	7.0

## 2.3 Imports & Competition

In the absence of any production of cancer drugs in Jordan and in most of the regional countries, the expected competition will come from multinational companies. The proposed project will have a good chance in the regional markets by producing these products under license and selling them at competitive prices.

## 2.4 Project Capacity

Current market size in Jordan is about US\$ 4.3 million, which represents about 2 % of the total Arab market size. The current estimated Arab market size exceeds US\$ 200 million, and it is expected to be more than US\$ 300 million by the year 2015.

The proposed project capacity is equivalent to US\$ 50 million in sales value.

## 2.5 Royalty and License

Typically, royalty rates on pharmaceutical drugs range between 0.5% and 3 % of net sales for the supply of extracts used in commercial products. The rate increases when the provider adds more value to the transferred materials or inventions.

At the top end of the scale, transferring inventions as purified compounds with data on efficacy (animal tests or human safety evaluation) might require 10 % or higher royalty rate.

In the proposed project, it is assumed that the royalty rate, as a share of net sales, will be 10 %.

## 2.6 Projected Sales Revenues

Table (3) illustrates the annual development of the project capacity utilization and project revenues.

**Table (3)**  
**Projected Revenues**

<b>Year</b>	<b>1</b>	<b>2</b>	<b>3 +</b>
<b>Capacity Utilization</b>	40 %	65 %	90 %
<b>US\$ Million</b>	20	32.5	45

### 3. Technical Aspects

#### 3.1 Project Location

The location of the cancer drugs project is proposed to be in Amman governorate due to the following considerations:

- Availability of industrial cities and necessary infrastructure.
- Adequacy of qualified human resources.
- Closeness to air shipment facilities as most of the project products are expected to be shipped by air.

#### 3.2 Manpower

**Table (4)**  
**Manpower Requirements**

<b>Job</b>	<b>Required No.</b>
General Manager	1
Department managers and assistants	9
Administrative and marketing staff	60
Engineer and pharmacist	20
Technician	50
Laborer	120
<b>Total</b>	<b>260</b>

The total annual salaries and wages of the above employees (including fringe benefits), in addition to overhead and administrative expenses are estimated at US\$ 3,204 thousand.

#### 3.3 Land & Buildings

**Table (5)**  
**Land and Buildings Cost**

<b>Item</b>	<b>Area m<sup>2</sup></b>	<b>Cost US\$</b>
Land (Industrial cities)	20,000	563,000
Buildings	5,000	5,000,000

### **3.4 Raw Materials**

Active ingredients and most other raw materials will be imported, while most of the packaging requirements could be obtained from local sources.

### **3.5 Technology**

The project will produce under license to be provided by a multinational company against 10 % of net annual sales royalties.

Technology source is the USA

## **4. Financial Aspects**

### **Basic Assumptions**

The financial analysis and indicators are based on the following assumptions:

1. Project operational life is 10 years.
2. Internal Rate of Return (IRR) is calculated at 100% equity ratio.
3. Income tax is calculated at 15% on net taxable income.
4. Net Present Value (NPV) is calculated at 12% discounted annual rate.
5. Initial working capital is based on the operating expenses needed for three months.
6. Operating expenses comprise raw materials, labor cost and overheads, utilities and other expenses.
7. Pre -operating expenses consist of studies fees, capital issue, licensing, training, trial operations and other similar expenses.

## 4.1 Project Investment Cost

**Table (6)**  
**Total Investment Cost**

<b>Item</b>	<b>US\$</b>
Land	563,000
Buildings	5,000,000
Machinery & Equipment	35,000,000
Transport means	400,000
<b>Sub- Total ( Fixed Assets )</b>	<b>40,963,000</b>
Contingency, (10%)	4,096,000
Pre – Operating Expenses	2,000,000
Initial Working Capital	4,259,000
<b>Total Investment Cost</b>	<b>51,318,000</b>

## 4.2 Financial Indicators

- ROI = 27.5 %
- IRR = 29 %
- NPV = 45.8 Million US\$
- BEP = 37 % of Production Capacity (at Sales Value)
- Payback Period = 4 Years.