The General Authority for Investment & Free Zones
Economic Performance Sector

A Feasibility Study on

Drying and Packing Vegetables and Fruits

Prepared by
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I. Project Basic Information

Project	Drying and Packing Vegetables and Fruits
Governorate	Minya
Land Area	6000 m^2
Land Price	Sale Agreement, around EGP 1000/ m^2
Buildings Area	6000 m^2. 3000 m^2 for the ground floor and 3000 m^2 for the first floor
Project Economic Life Expectancy	10 years
Expected Labor	40
Targeted Products	Dried and packed vegetables and fruits
Expected Number or Workers	40 workers
Expected Investment Costs	EGP 31603000
Expected Annual Costs	EGP 23064400
Return on Investment (ROI)	33%
Payback Period	3.3 years

II. Marketing Study:

1- Demand Volume:

- Drying and freezing vegetables activity is one of the most important agro-processing projects because of its advantages;

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this is due to the increasing and continuous demand of consumers and their preference for this type of food.

- The continuous market gap provides local and foreign markets constantly.
- Egypt is concerned with agro-processing activity to achieve food security, especially with the population growth.
- Foreign demand for this type of food increases, in addition to the availability of export opportunities to foreign markets, and the possibility of producing such products in the appropriate form and specifications.

2- Potential Export Markets:

• Africa, the Middle East and the Gulf region.

3- Market Gap:

• The market still has a market gap, especially with the growing population, high demand and low supply, and that supply does not meet the appropriate quality specifications, in addition to the possibility of exporting to various parts of the world.

4- Distribution Outlets:

Marketing is carried out using the following methods:

- Export
- Sale to Wholesalers, retailers, hyper markets, hotels and restaurants.
- Direct sale through establishing many distribution outlets in different districts.

III. Technical Study:

1- Project Location: Minya Governorate.
2- Land: 6000 m^2, EGP 1000/m^2.
3- Buildings: 6000 m^2, 3000 m^2 for the ground floor, and 3000 m^2 for the first floor.
4- Final Product: Dried and packed vegetables and fruits.
5- Labour Required: 40

Item	Number
Factory Director	1

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Sales and Marketing Manager	1
Financial Manager	1
Production Supervisor	3
Accountant	4
Personnel Affairs Officer	1
Quality Supervisor	1
Industrial Safety	2
Sales Representative	3
Driver	3
Security Guard	2
Storekeeper	3
Production Worker (trained)	10
Handler, …etc.	3
Janitor	2
Total	**40**

6- Main Raw Materials and Supplies:

Cardboard, aluminium and polyethylene, and they are locally available.

7- Main Machinery and Equipment:

- Conveyor belts
- Continuous drying unit
- Mill
- Packaging machinery
- Piston
- Vegetables and fruits washing machine
- Air blower

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- Sieve
- Chiller
- Steam boiler 5 tonnes

8- Production Capacity: 1000 tonnes/ annum

IV. Financial Study:

Financial feasibility study is considered a tool that helps the investor in making decisions related to investment. To facilitate making such decisions, all costs related to investment and production must be clearly and accurately determined, taking into account that profitability of the projects depends on the volume and components of investment and production costs.

1- Fundamentals and Hypotheses of Financial Studies:

- Data used in the study and the expected revenue estimates of the volume and value of sales have been estimated according to results of the marketing study.
- Investment spending values and other elements of costs and expenses have been estimated according to results of the technical study.
- The annual depreciation premium for buildings and machinery is estimated according to results of the technical study, assuming that their sales value at the end of the period is according to their book value.
- It has to be considered that the estimated value of fixed assets mentioned in this study is related to a specific time period according to the prevailing circumstances at the time of preparing this study; and that this value may change with the change of circumstances by the limitation period of the report or by the change of the economic climate in general.
- Incorporation and pre-commencement expenditure have been assumed that they are fully depreciated during the first year of revenue as per the Egyptian Accounting Standards.

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- The estimated income statements have been prepared on the assumption that there is no fundamental change in the revenue values and the expected annual costs during the study period.
- The annual cash flows are estimated using the indirect estimation method by making the necessary adjustments to the results of the estimated income statements for the years under study.
- The study assumes that all purchases include VAT.

2- Annual Sales:

The annual sales are estimated at EGP 26875000 according to results of the market study and production capacity as follows:

S	Item	Item Weight/ Kg	Sales/ Item	Sale Price/ Item	Annual Sales Revenue
1	Mulukhiyah	0.4	625000	7.8	4,875,000
3	Peas	0.4	625000	12.6	7,875,000
2	Okra	0.4	625000	21.6	13,500,000
4	Taro	0.4	625000	9.6	6,000,000
	Total		**2500000**		**32,250,000**

3- Project Investment Costs:

3.1 *Land Area*: a land with an area of 6000 m^2, at a price of EGP 1,000/ m^2, with a total cost of EGP 6,000,000.

3.2 *Buildings, constructions, finishes, infrastructure, and utilities*: The cost of buildings, constructions, finishes, infrastructure, and utilities, including the cost of fences and security rooms, is estimated at EGP 3,000,000.

3.3 *Machinery and equipment*: the cost of machinery and equipment is estimated at EGP 2,000,000.

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3.4 *Refrigerated trucks*: the cost of 2 refrigerated trucks is estimated at EGP 600,000.

3.5 *Fixtures, finishes, furniture, furnishings and stationery*: EGP 500,000.

3.6 *Legal and incorporation expenses*: EGP 500,000.

Accordingly, the total value of the investment costs is as follows:

Item	Cost
Land	6000000
Buildings	3000000
Machinery and equipment	2000000
Refrigerated Trucks	600000
Fixtures, finishes, furniture, furnishings and stationery	500000
Legal and incorporation expenses	500000
Total	**12,600,000**

4- Running Costs:

The running costs are defined as the costs necessary to complete the operation process until the production of the final product, passing through the successive stages of the product. These costs are divided into fixed costs and variable costs, as well as direct costs directly related to the product and indirect costs that are not directly related to the product such as, the administrative officers' payroll. The running costs are also divided into several elements, namely (the cost of materials, the cost of direct and indirect payroll, and other running costs), where the operating cycle is calculated on one operation per annum. We review these costs as follows:

4.1 The Annual Cost of Materials:

The cost of materials is estimated at EGP 16,125,000.

4.2 *Payroll Costs*:

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Item	Number	Salary/ Month	Total per Month	Salary/ annum
Factory Director	1	15000	15000	180000
Sales and Marketing Manager	1	13000	13000	156000
Financial Manager	1	13000	13000	156000
Production Supervisor	1	5000	5000	60000
Accountant	1	6000	6000	72000
Personnel Affairs Officer	1	6000	6000	72000
Quality Supervisor	1	5000	5000	60000
Industrial Safety	2	4000	8000	96000
Sales Representative	2	6000	12000	144000
Driver	3	3000	9000	108000
Security Guard	2	4000	8000	96000
Storekeepers	2	4000	8000	96000
Production Workers (trained)	10	3500	35000	420000
Handlers and so on	3	2500	7500	90000
Janitors	2	3000	6000	72000
Total	**33**		**156500**	**1878000**

4.3 *Other Running Costs*: Approximately EGP 1000,000.

4.4 *Annual Depreciation*:

Item	Cost	Years of Depreciation	Annual Depreciation
Land	6000000	0	0
Buildings	3000000	20	150000

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Machinery and equipment	2000000	20	100000
Refrigerated Trucks	600000	5	120000
Fixtures, finishes, furniture, furnishings and stationery	500000	5	100000
Legal and incorporation expenses	500000	1	500000
Total	**12,600,000**		**970,000**

4.5 *Based on the foregoing, the value of running costs for the operating cycle is as follows*:

Item	Cost
Materials	16125000
Payroll	1878000
Other Running Costs	1000000
Total	**19003000**

4.6 *Based on the foregoing, the total investment costs for the first year (operating cycle) amount to EGP 31603000.*

5- Project Financial Statements and Indicators, and Expected Profitability Ratios:

– The financial statements and indicators, and profitability ratios are among the most important tools used to assess the economic viability of projects. The Assessment comes upon calculating the net income of the project and the net cash inflows of the project, as well as the net present value of money resulting from an increase in the inflation rate using the prevailing interest rate.

– Financial indicators are also used to make a comparison between the available investment options, to compare between

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the average return on investment and the payback period for each project separately.

5.1 *The expected income statement for the first five years of the activity*:

With a 10% estimated annual increase in revenue and costs

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Total Sales	32250000	35475000	39022500	42924750	47217225
Sales Cost (running costs)					
Materials	16125000	17737500	19511250	21462375	23608613
Payroll	1878000	2065800	2272380	2499618	2749580
Other Running Costs	3000000	3300000	3630000	3993000	4392300
Depreciation	970000	470000	470000	470000	470000
Profit before Tax (PBT)	10277000	11901700	13138870	14499757	15996732
Tax	2055400	2380340	2627774	2899951	3199346
Profit after Tax (PAT)	8221600	9521360	10511096	11599806	12797386

5.2 *A projected cash flow statement for the first five years of activity*:

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Cash inflows	32250000	35475000	39022500	42924750	47217225
Cash outflows					
Materials	16125000	17737500	19511250	21462375	23608613
Payroll	1878000	2065800	2272380	2499618	2749580
Other Running Costs	3000000	3300000	3630000	3993000	4392300
Tax	2061400	2345340	2592774	2864951	3164346
Total cash outflows	23064400	25448640	28006404	30819944	33914839

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Net cash flow	9185600	10026360	11016096	12104806	13302386

5.3 Net present value (NPV) of cash inflows

This is according to the simple interest rate of projects' loans which is approximately 14% at the time of preparing this study

Year	Cash Flow	Discount Factor 14%	Present Value
Year 1	9185600	0.877	8055771
Year 2	10026360	0.769	7710271
Year 3	11016096	0.675	7435865
Year 4	12104806	0.592	7166045
Year 5	13302386	0.519	6903938
Total	**55635248**		**37271890**

5.4 Calculating Average ROI

Year	Annual Net Profit	ROI/ annum
Year 1	8,221,600	26%
Year 2	9,521,360	30%
Year 3	10,511,096	33%
Year 4	11,599,806	37%
Year 5	12,797,386	40%
Investment Costs	31,603,000	
Average ROI		**33%**

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6- Payback Period

Year	0	1	2	3	4	5
Annual Cash inflow		9,185,600	10,026,360	11,016,096	12,104,806	13,302,386
Cumulative cash flow	(31,603,000)	(22,417,400)	(12,391,040)	(1,374,944)	10,729,862	24,032,248

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$$\text{Number of years of negative cash flow} + \frac{\text{The absolute value of the last negative cumulative cash flow}}{\text{Cash inflow during the following year}} \times 12$$

$$= 3 \times \frac{1{,}374{,}944}{10{,}729{,}862}$$

= 3.3 years

7- Financial Study Conclusions:

- The project achieves a NPV of positive cash in an amount of EGP 37271890, according to an interest rate of 14%.
- The project achieves 33% ROI.
- The estimated payback period of the project is 3.3 years.

V. Conclusions and Recommendations

The project is economically viable in light of the following considerations:

- The project achieves a good ROI estimated at 33%.
- The payback period of the investment costs of the project is estimated at 3.3 years.
- The importance of this project is to reduce losses during transportation from production places to consumption markets, which represent around 20 to 30% of the production volume.

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