



Islamic Republic of Iran
North Khorasan Organization of Economic Affairs and Finance



Dried Fruit Packaging in Esfarayen Industrial Park

Center of Investment Services of
North Khorasan

April 2021

Summary of Technical-Economical Pre-Feasibility Study

The name: Dried Fruit Packaging

Sector: Agricultural

Subsector: Alterant Industries

ISIC Code:74954122325

The owner of:

Organization of Economic Affairs and Finance (North Khorasan)



The ADDRESS:

Iran, North Khorasan, Esfarayen

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1 Abstract

1.1 Project Profile

Table 1: Summary Sheet

Project Introduction			
Project Title	Dried fruit packaging		
Sector	Agricultural		
Sub Sector	Alterant Industries		
Location	Iran, North khorasan, Esfarayen		
The County	Esfarayen		
Products / Services	Pistachios, almonds, figs, berries, raisins, etc.		
Annual Nominal Capacity	2,000		Ton's
The Raw Material	Pistachios, almonds, figs, berries, raisins, etc.		
Employment	17		Person
Land Area	3,360		m ²
Floor Area	1,010		m ²
Energy and Water Consumption	Water Consumption	9,500	m ³ in year
	Electricity Consumption	65	KW
	Gas Consumption	700,000	m ³ in year
Fixed Capital	155,540		Million Rial
Working Capital (The First Year)	387,937		Million Rial
Payback Period	4.03		Year
Net Present Value (NPV)	350,213		Million Rial
Internal Rate of Return (IRR)	46		%
Modified Internal Rate of Return (MIRR)	28		%
Break Even Point	21		%
The Exchange Rate (Dolar)	240,000		Rial
Description	In this project, all the materials related to the study of the Dried fruit packaging market especially domestic and foreign supply and demand, are examined.		

Table 2: Legal Authorizations

Licensure Status	
Descriptions	Issuance Status
Principal Agreement (Establishment licensure)	☒
Land Allocation	☒
Environmental Inquiry	☒
Possibility of Water Supply	☒
Possibility of Electricity Supply	☒
Possibility of Electricity Supply	☒
Possibility of Gas Supply	☒

Table 3: Total Investment

Descriptions	Local Currency Required			Foreign Currency Required (Million Euro)	Total (Million Euro)
	(Million Rial)	Rate	Equivalent in (Million Euro)		
Fixed Capital	346,371	240,000	1.44	0	1.44
Working Capital	234,218		0.98	0	0.98
Total Investment	580,589	240,000	2.42	0	2.42

- Value of Foreign Equipment / Machinery: 0 Million Euro
- Value of Local Equipment / Machinery: 0.1201 Million Euro
- Net Present Value (NPV): 1.459 Million Euro in Years
- Internal Rate of Return (for 10 years):46%
- Payback Period: 4.03 Years

Table 2: General Information

Company Profile	
Project Type	Establishment <input checked="" type="checkbox"/>
Company Name	North Khorasan Organization of Agriculture Jihad
Contact Person (Name and Position)	Mr Rezvan Nikbakht
Email	et.1383@yahoo.com
Mobile	+989379094738
Tel	+9858-32257990
Website	http://portal.nkj.ir
Address	North Khorasan Province, Bojnurd, Chehelodometri Kamarbandi Blvd, North Khorasan Organization of Agriculture Jihad
Company's Legal Structure	Government <input checked="" type="checkbox"/>

2 Project Location

2.1 Province: North khorasan

2.2 The County: Esfarayen

Esfarayen is a city and capital of Esfarayen County, North Khorasan Province in Iran. This project will be construct in part 54 with coordinates (532575,4109605) in Esfarayen Industrial Park. Location of project is shown in Figure 1.

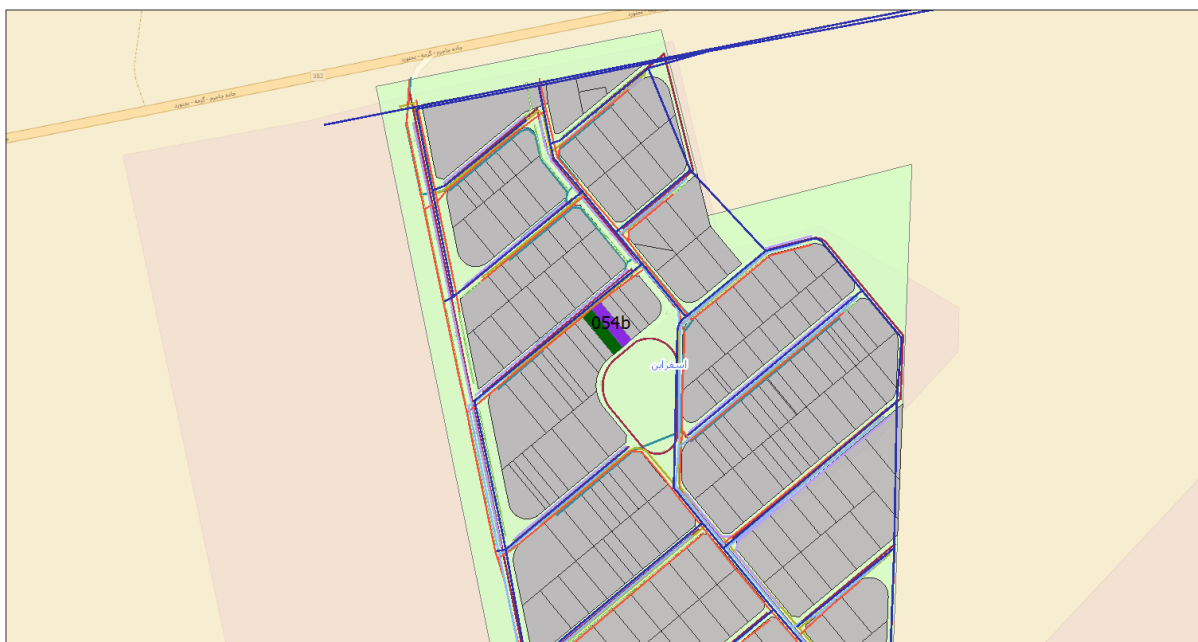


Figure 1: Location of Proposed Land in Esfarayen Industrial Park

2.3 The Project: Dried fruit packaging

2.4 Access to the Infrastructures

Table 3: Access to Infrastructures

No.	Needed Infrastructures	Distance to the Project	The Supply Infrastructures
1	Water	0	is provided
2	Electricity	0	is provided
3	Gas	0	is provided
4	Telecommunications	0	is provided
5	High way	<1 km	is provided
6	Sub way	0	is provided
7	Airport	62	is provided
8	Amirabad Port (Behshahr)	420	is provided
9	Bandar Abbas Port	1,435	is provided
10	Rail way station of Joveyn	124	is provided
11	Rail way station of Jajarm	154	is provided

3 Technical Specifications of Plan

3.1 Product

Table 4: Project Specifications Based on ISIC Code

The Product	ISIC Code	Customs Tariff	Environmental Category
Dried fruit packaging	74954122325	Service	1

In this project, all the materials related to the study of the Dried fruit packaging market especially domestic and foreign supply and demand, are examined. The products of this project include pistachios, almonds, figs, berries, raisins, etc., according to the needs of the market, in packages of one hundred grams, two hundred grams, half a kilo, and one kilo. The necessity of implementing this project can be examined from several aspects. The first aspect is the abundance of nuts in the project site and neighboring provinces (Razavi and South Khorasan). The high volume of dried fruit production in Khorasan province and their sale in bulk and the very low price of bulk buyers is a big challenge that has increased the need for dried fruit packaging in these circumstances. The second aspect is related to manpower. Although unemployment rates in North Khorasan Province are relatively favorable, the presence of many skilled workers can be a valuable opportunity to set up a production line for dried fruit packaging that does not require much-skilled labor. Taking advantage of this opportunity to prevent the migration of the province's labor force at this time is very necessary.

As the chart and table show the amount of production of the product in question, demand is upward until 2,025, so that from 2,020 to 2,023, about 300,000 tons can be added to the country's production. Now, if we assume that factories are set up with a percentage of progress (above 75%), the shortage of demand in the country will be around 250,000 tons. It should be noted that the capacity of the factory is 1,000 tons, so it can be claimed that the factory can be established without the concern of selling the product.

3.2 Project's Requirements

Quality control related to this product will be done in two steps. In the first stage, it is related to quality control of input materials, in the next stage, quality control is related to the taste of nuts, and in the last stage, quality control is related to the quality of packaging. Product standards:

National Standard Organization of Iran for the characteristics of wooden boxes of Iran`s dried fruits with number 1,035, dried fruits with sampling method with number 1,036, hygienic requirements of major centers of dried fruit supply with number 19,193, dried fruit and beans disinfection procedure with formulation number 2,339 Carton Packaging for Nut Packaging Features and Test Methods No. 36, Nuts - Measurement of Moisture Amount - Test Methods No. 672 has defined the standard that the relevant standards must be observed for each aspect of the work.

3.3 Space and Infrastructure Required

Table 5: Land Purchase Costs (Million Rial)

Specifications	Area (m ²)	Price per m ²	Cost		
			Paid Cost	Needed Fund	Total
A piece of land in Esfarayen	3,360	0.6	0	0	2,016

Table 6: Site Preparation and Development Costs (Million Rial)

Description	Working Capacity	Unit	Unit Price	Paid Cost	Needed Fund	Total
Excavation	3,100	cm	0.3	0	0	930
Wall Construction and door	270	Sm	9	0	0	1,800
street construction					0	
(5% of the amount of land)	168	Sm	7	0	0	1,175
Green Space and Lighting				0	0	4,175

Table 7: Civil Works, Structures and Buildings Costs (Million Rial)

Description	Area (m ²)	Unit Price	Paid Cost	Needed Fund	Total
Production Hall	650	25	0	0	16,250
Raw material & Product warehouse	280	30	0	0	8,400
Office building	50	45	0	0	2,250
welfare and guardroom	30	45	0	0	1,350
Total			0	0	28,250

Table 8: Infrastructures

No	Description	Unit	Annual Consumption	Unit cost (Rial)	Total (Million Rial)
1	Water consumption	m ³	9,500	7,000	67
2	Electricity consumption	Kw	200,000	1,100	220
3	Gas consumption	m ³	700,000	1,200	840
4	Gasoline	Litr			
Total					1,127

3.3.1 Equipment and Machinery

Table 9: Plant Machinery and Equipment Costs (Million Rial)

Description	Unit Cost	Costs Required				Total
		Local Costs	Costs Of Currency		Cost To Complete	
			Rate	(Million Euro)		
Roast and salt machine	935	935	240,000	0	0	935
Salt lifter	185	185		0	0	185
Lifting device Z	360	720		0	0	720
Front sieve	185	185		0	0	185
Flavor Mixer (Large)	545	545		0	0	545
Water mixer	230	230		0	0	230
Hot air dryer	360	360		0	0	360

Description	Unit Cost	Costs Required				Total
		Local Costs	Costs Of Currency		Cost To Complete	
			Rate	(Million Euro)		
Hand-picked conveyor	330	330		0	0	330
Pack of four weights	2,040	2,040		0	0	2,040
Thermal histogram device	100	100		0	0	100
Closed punch system	115	115		0	0	115
Envelope form	80	80		0	0	80
Nitrogen gas injection system	70	70		0	0	70
Packing conveyor	110	110		0	0	110
Total Cost of Machinery		6,005	240,000	0	0	6,005

- The exchange rate is: 1 € = 240,000 Rial

3.3.2 Raw Material and Intermediate Components

Table 10: Raw Material and Intermediate Components (Million Rial)

Description	Unit	Total Consumption of the Raw Material	Price per Unit of Raw Material	Annual Cost of Providing Material
Raw material & Packaging	<i>ton</i>	-	-	385,667
Salary	<i>Rial</i>	-	-	2,160
Imprest funds	<i>Rial</i>	-	-	110
Total				387,937

3.3.3 Management and Human Resources

Table 11: Salary of Administrative Staff (Million Rial)

No.	Position	Number of Shifts	Personnel per Shift (No.)	Total Staff (People)	Monthly Salary(per Person)	Annual Salary
1	manpower (in Administrative sector)	-	-	4	75	3,600
2	manpower (in Production sector)	-	-	13	60	9,360
Total				17		12,960

- Number of skilled personnel required: 13
- Number of non- skilled personnel required: 4
- Total number of personnel required: 17

4 Market Study and Competition

4.1 Examining Supply And Demand Trends

Amount of dried fruit packaging products supply based on production licenses (according to the information of the ministry of industry, mine and trade) inside the country from 2015 up to 2020 is shown in Table 12.

Table 12: The amount of Dried Fruit Packaging Domestic Supply

Year	Nominal Capacity (Ton)
2015	175,006
2016	257,356
2017	386,586
2018	619,417
2019	746,357
2020	844,176

The real production capacity of active units in 2015 up to 2019 is shown in Table 13.

Table 13: The Real Production Capacity of Active Units in 2015 up to 2020

Year	Nominal Capacity (Tons)
2015	119,290
2016	175,423
2017	263,510
2018	422,216
2019	508,742
2020	575,419

The following chart shows the prediction of production according to the Table 13 based on linear regression.

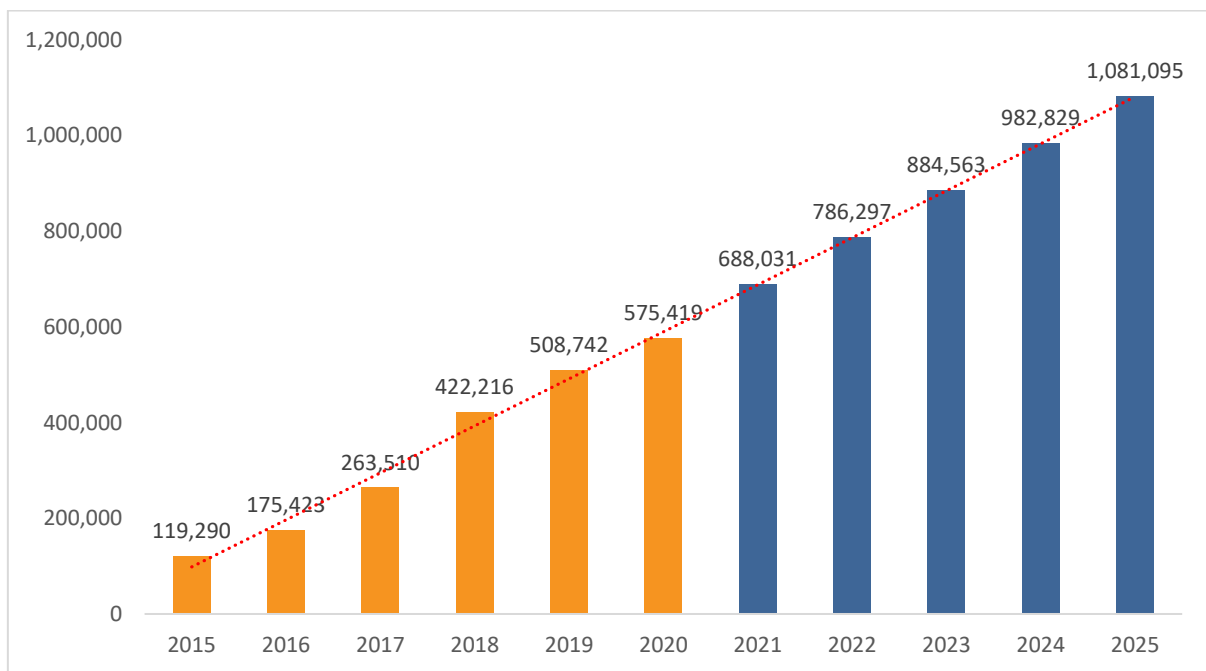


Figure 2: The Prediction of Production

As Figure 2 shows, the amount of dried fruit packaging production is increasing.

Considering that dried fruit packaging is a service, it has no customs tariff, so import and export analysis is removed. In the Table 14, the information of the units that have obtained license is presented based on the amount of progress.

Table 14: The Information of The Units that have Obtained License

Progress Percent	Capacity (Tons)
0% - 25%	518,656
25% - 50%	30,495
50% - 75%	203,653
75% - 100%	42,750

5 Financial Projection

5.1 The Cost Estimate

Table 15: Total Investment (Million Rial)

No.	Subject	Cost
1	Fixed Capital	155,540
2	Working Capital	387,937
Total Investment		543,477

Table 16: Fixed Capital (Million Rial)

Subject	Paid Cost	Cost Required				Total Cost
		Local Cost	Foreign Exchange Cost		Needed Fund	
			Rate	(€)		
Land Purchase	0	2,016	240,000	0	0	2,016
Landscaping	0	4,175		0.01	0	4,175
Building	0	28,250		0.11	0	28,250
Equipment and Machinery	0	6,005		0.02	0	6,005
Laboratory and Workshop Supplies and Equipment	0	498		0	0	498
Facilities	0	5,650		0.02	0	5,650
Transportation	0	0		0	0	0
Office and Services Equipment	0	515		0	0	515

Subject	Paid Cost	Cost Required			Total Cost	
		Local Cost	Foreign Exchange Cost			Needed Fund
			Rate	(€)		
Pre-Operation Costs	0	96,124		0.4	0	96,124
Unforeseen (10% Of The above Items)	0	14,323		0.06	0	14,323
Total Fixed Investment	0	155,540		0.66	0	155,540

Table 17: Working Capital(Million Rial)

Subject	Day	Total
Raw material & Packaging	60	385,667
Salary	60	2,160
Imprest funds	60	110
Total		387,937

Table 18: Fixed and Variable Costs

No.	Production Cost	Fixed Cost		Variable Cost	
		%	Cost	%	Cost
1	Raw material	0	0	100	2,314,000
2	Energy & utility	20	1,071	80	4,285
3	Repair & Maintenance	20	311	80	1,244
4	Production salary	70	9,072	30	3,888
5	Depreciation	100	14,318	0	0
Total Production Costs			24,772		2,323,417

5.2 Break-Even Analysis

Table 19: Break-even Analysis

Period	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Break-even ratio (%)	24.62	20.73	17.72	16.86	16.02	15.32	14.68	14.11	13.58	13.10

5.3 Sensitivity Analysis of IRR

Table 20: Sensitivity Analysis of IRR

Variation (%)	Sales Revenue	Increase In Fixed Assets	Operating Costs
-20.00%	-72.19%	44.38%	243.56%
-16.00%	-72.19%	43.30%	200.11%
-12.00%	-72.19%	42.28%	157.55%
-8.00%	-44.87%	41.32%	116.22%
-4.00%	4.29%	40.41%	76.59%
0.00%	39.56%	39.56%	39.56%
4.00%	78.48%	38.74%	5.92%
8.00%	120.18%	37.97%	-39.73%
12.00%	163.69%	37.23%	-78.78%
16.00%	208.49%	36.53%	-78.78%
20.00%	254.21%	35.86%	-78.78%

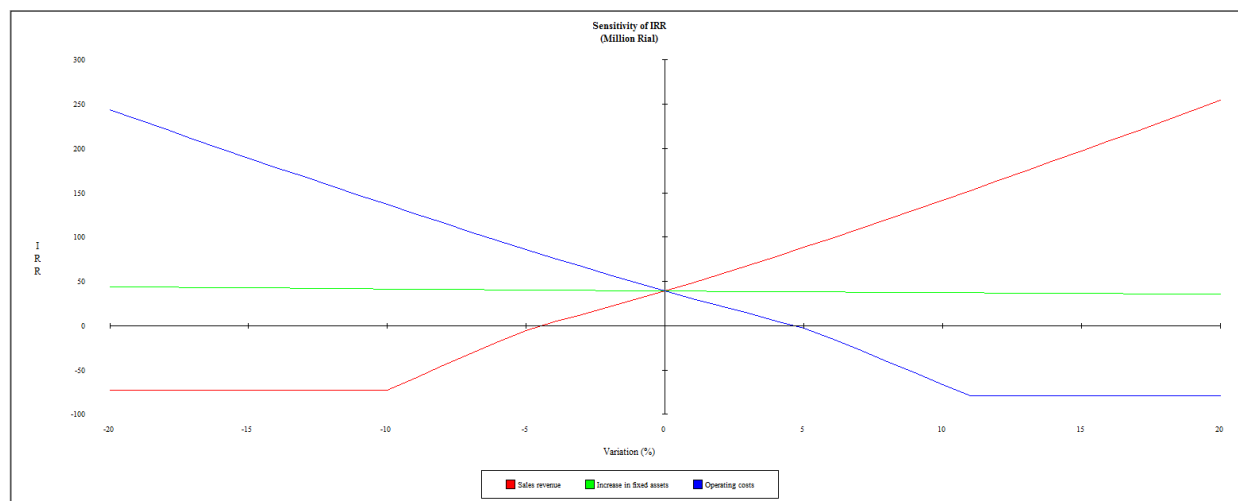


Figure 3: Sensitivity Analysis of IRR

6 Duration of Project Operation

The time of doing early stages and completing its process is about 14 months.

Table 21: Action Plan and Implementaion Schedule

Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Land Purchase	█																							
Constructing Buildings		█	█	█	█	█	█	█	█	█														
Execution of Facilities										█	█													
Order, Purchase of Machinery												█	█											
Landscaping													█	█										
Machinery Strat-up and Trial Production															█									

7 Incentives, Features And Advantages of Project

North Khorasan Province is a province located in northeastern Iran. Bojnord is the capital of the province. This province contains many historical and natural attractions, such as mineral water springs, small lakes, recreational areas, caves and protected regions, and various hiking areas. Advantages of the agriculture of this province involves favorable and diverse climatic conditions and other parameters affecting growth.