



Islamic Republic of Iran

Ministry of Economic Affairs and Finance

General Department of Economic Affairs and Finance of North Khorasan



# De-skinning pistachios In Maneh and Samalghan Industrial Park

Center of Investment Services of North Khorasan

2021 April

# Summary of Technical-Economical Pre-Feasibility Study

The Name: De-skinning pistachios

Sector: Agricultural

Subsector: Alterant Industries

ISIC Code: 140412305

The owner of:

Organization of Economic Affairs and Finance (North Khorasan)



The ADDRESS:

Iran, North Khorasan, Maneh and Samalghan

## Table of Contents

1	Abstract.....	4
1.1	Project Profile.....	4
2	Project Location.....	6
2.1	Province: North khorasan.....	6
2.2	The County: Maneh and Samalghan.....	6
2.3	The Project: De-skinning pistachios .....	7
2.4	Access to the Infrastructures .....	7
3	Technical Specifications of Plan.....	8
3.1	Product .....	8
3.2	Project's Requirements .....	9
3.3	Space and Infrastructure Required.....	9
3.3.1	Equipment and Machinery .....	11
3.3.2	Raw material and intermediate components .....	11
3.3.3	Management and Human Resources .....	12
4	Market Study and Competition.....	12
4.1	Examining Supply And Demand Trends .....	12
5	Financial Projection .....	14
5.1	The Cost Estimate .....	14
5.2	Break-Even Analysis.....	15
5.3	Sensitivity analysis of IRR.....	16
6	Duration of Project Operation.....	17
7	Incentives, Features And Advantages of Project .....	17

# 1 Abstract

## 1.1 Project Profile

Table 1: Summary Sheet

Project Introduction			
<b>Project Title</b>	De-skinning pistachios		
<b>Sector</b>	Agricultural		
<b>Sub Sector</b>	Alterant Industries		
<b>Location</b>	Iran, North khorasan, Maneh and Samalghan		
<b>The County</b>	Maneh and Samalghan Industrial Park		
<b>Products / Services</b>	Pistachio		
<b>Annual Nominal Capacity</b>	500		<i>Ton 's</i>
<b>The raw material</b>	Pistachio		
<b>Employment</b>	13		<i>Person</i>
<b>Land Area</b>	2,600		<i>m<sup>2</sup></i>
<b>Floor Area</b>	1,590		<i>m<sup>2</sup></i>
<b>Energy and Water Consumption</b>	Water Consumption	10,000	<i>m<sup>3</sup> in year</i>
	Electricity Consumption	100	<i>KW</i>
	Gas Consumption	500,000	<i>m<sup>3</sup> in year</i>
<b>Fixed Capital</b>	138,499		Million Rial
<b>Working Capital (The First Year)</b>	171,773		Million Rial
<b>Payback Period</b>	3.51		Year
<b>Net Present Value (NPV)</b>	247,277		Million Rial
<b>Internal Rate of Return (IRR)</b>	49		%
<b>Modified Internal Rate of Return (MIRR)</b>	28		%
<b>Break Even Point</b>	29		%
<b>The Exchange Rate (Dolar)</b>	240,000		<i>Rial</i>

*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	138,499	240,000	0.5771	0	0.5771
Working Capital	171,773		0.7157	0	0.7157
<b>Total Investment</b>	<b>310,272</b>	<b>240,000</b>	<b>1.29</b>	<b>0</b>	<b>1.29</b>

- Value of Foreign Equipment / Machinery: 0 Million Euro
- Value of Local Equipment / Machinery: 0.0174 Million Euro
- Net Present Value (NPV): 1.030 Million Euro in 15 Years
- Internal Rate of Return (IRR): 49 %
- Payback Period: 3.51 Years

Table 4: 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: Maneh and Samalghan

Maneh and Samalqan County is a county in North Khorasan Province in Iran. The capital of the county is Ashkhaneh. The county has three districts: Central District, Maneh District, and Samalqan District. The county has four cities: Ashkhaneh, Pish Qaleh, Shahrabad-e Khavar and Qazi.

This project will be construct in part 92 with coordinates (489119, 4160378) in Maneh & Samalghan industrial park. Proposed location of project is shown in

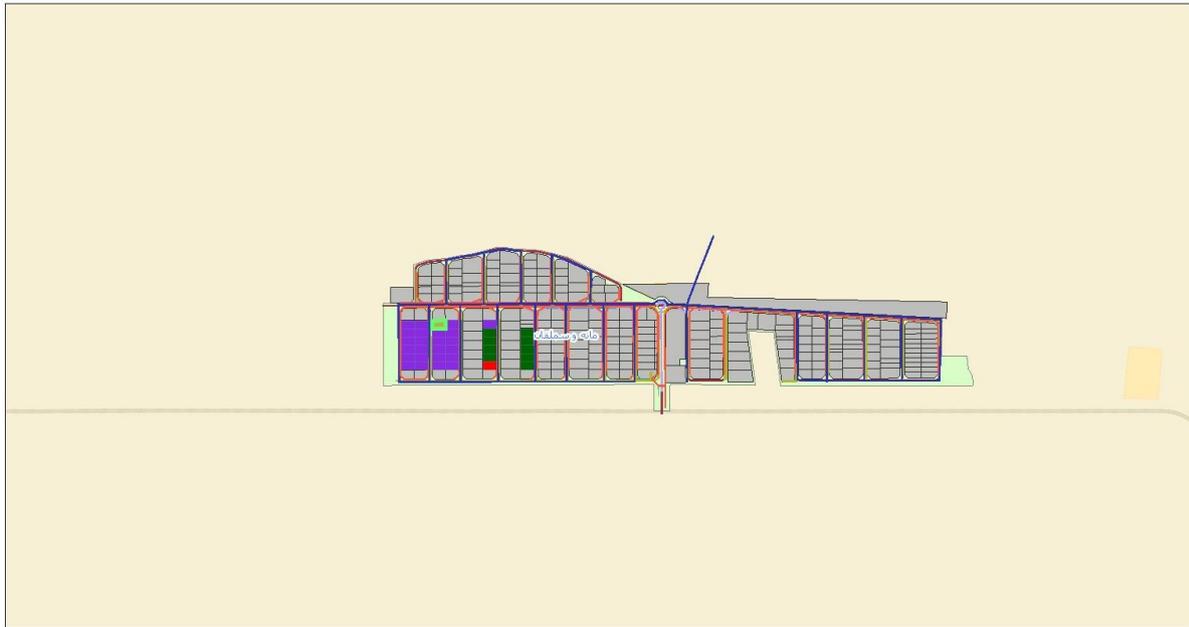


Figure 1: Location of Proposed Land in Maneh and Samalghan Industrial Park

### 2.3 The Project: De-skinning pistachios

### 2.4 Access to the Infrastructures

Table 5: 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	155	is provided
8	Amirabad Port (Behshahr)	340	is provided
9	Bandar Abbas Port	1,473	is provided
10	Rail way station of Joveyn	106	is provided
11	Rail way station of Jajarm	35	is provided

### 3 Technical Specifications of Plan

#### 3.1 Product

Table 6: Project Specifications Based on ISIC Code

The Project	ISIC Code	Customs Tariff	Environmental Category
De-skinning pistachios	0140412305	Service	3

In this project, all the materials related to the study of the de-skinning pistachios market are examined. The purpose of the project is to strengthen the export sector, replace imports, etc. According to studies on the supply and demand of de-skinning pistachios, the production of this product from 2021 to 2025 will have an increasing trend that reassures new investors. So that the amount of this demand will increase by about 1,000 tons from 2020 to 2023, which considering the capacity of factories that have physical progress (above 75%), the country's need is the same as 1,000 tons until 2023.

It should be noted that the capacity of this factory is 500 tons, so from the perspective of national needs, there is no concern for the construction of this factory. From the provincial point of view, considering that the number of De-skinning pistachios factories in North Khorasan province is 1 (according to the information of Agriculture-Jihad organization of North Khorasan province) with a total capacity of 400 tons and about 7,500 tons of fresh pistachios are produced in North Khorasan province Which needs 3,000 tons of de-skinning pistachios factory capacity, so we currently have a shortage of 2,600 tons of factory. Since the capacity of this factory is 500 tons, so it can complete its total capacity in the province. Undoubtedly, the most important reasons for justifying a project are based on its economic considerations. Gaining a suitable share of the domestic or foreign market, expanding the target market, and having appropriate financial and economic indicators (NPVR, IRR), and so on are among the most important goals of an economic enterprise to create or develop an industrial plan. In addition, the national and macroeconomic aspects of the project should be considered. Also, the study of the effect of project implementation on social and cultural indicators at the national and regional levels such as unemployment, labor migration, cultural effects, and finally the political considerations of the feasibility study, both nationally and internationally, can justify the necessity of implementing a

project. Getting out of dependence on the outside, increasing domestic production, etc. can be studied and analyzed in this section.

### 3.2 Project's Requirements

In order to perform quality control, the necessary controls must be performed from the beginning of the import of raw materials. These controls include reviewing the properties of raw materials required for production, quality control during production, and quality control of the product.

The raw materials used in this industrial unit, have a direct impact on the quality of the final product. Therefore, first of all, it seems necessary to know the relative quality factors of each raw material. In order to control the raw materials during production and the final product, various tests must be performed. These tests are performed in two ways, tests in which the material and product are visually controlled and tests in which the material and product are examined for physical and chemical properties. Quality control tests during production are performed in accordance with Standard No. 8,914, related to the National Standard Organization of Iran.

### 3.3 Space and Infrastructure Required

*Table 7: Land Purchase Costs (Million Rial)*

Specifications	Area ( $m^2$ )	Price per $m^2$	Cost		
			Paid Cost	Needed Fund	Total
A piece of land in Jajarm	2,600	0.5	0	1,300	1,300

Table 8: Site Preparation and Development Costs (Million Rial)

Description	Working Capacity	Unit	Unit Price	Paid Cost	Needed Fund	Total
Excavation	780	cm	0.3	0	234	234
Wall Construction and door	252	Sm	9	0	2,268	2,268
street construction (5% of the amount of land)	130	No	7	0	910	910
Green space and Lighting (1% of the amount of land)	26	No	8	0	208	208
<b>Total</b>				<b>0</b>	<b>3,620</b>	<b>3,620</b>

Table 9: Civil Works, Structures and Buildings Costs (Million Rial)

Description	Area (m <sup>2</sup> )	Unit Price	Paid Cost	Needed Fund	Total
Production Hall	700	25	0	0	17,500
Raw material warehouse	300	30	0	0	9,000
Product warehouse	300	25	0	0	7,500
Laboratory	80	25	0	0	2,000
office building	60	25	0	0	1,500
Welfare, guardroom and scales	150	45	0	0	6,750
<b>Total</b>			<b>0</b>	<b>0</b>	<b>40,600</b>

Table 10: Infrastructures

No	Description	Unit	Annual Consumption	Unit cost (Rial)	Total (Million Rial)
1	Water consumption	m <sup>3</sup>	10,000	7,000	70
2	Electricity consumption	Kw	500,000	1,100	550
3	Gas consumption	m <sup>3</sup>	500,000	1,200	600
4	petrol	lit	12,000	30,000	360
5	others				330
<b>Total</b>					<b>1,910</b>

### 3.3.1 Equipment and Machinery

Table 11: Plant Machinery and Equipment Costs(Million Rial)

Description	Unit cost	Costs Required				Total
		Local Costs	Costs of Currency		Cost to Complete	
			Rate	(Million Euro)		
lifter bar (for Clusters)	240	240	240,000	0.001	0	240
Pistachio peeler machine	280	280		0.001167	0	280
Wet pistachio skin separator	175	175		0.00073	0	175
Three-layer sieve (Gogir)	270	270		0.001125	0	270
Full salted pistachios	400	400		0.0017	0	400
Pool	220	220		0.000917	0	220
water-absorbent (One-way)	690	690		0.002875	0	690
Forklift	220	220		0.0009167	0	220
Test strip (review)	230	230		0.000958	0	230
Electrical panel	300	300		0.00125	0	300
Chassis construction and installation	100	100		0.0004167	0	100
Waste conveyor belt	200	200		0.0008333	0	200
Packaging machine	860	860		0.003583	0	860
<b>Total Cost of Machinery</b>		<b>4,185</b>	<b>240,000</b>	<b>0.01744</b>	<b>0</b>	<b>4,185</b>

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

### 3.3.2 Raw material and intermediate components

Table 12: 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 and Packaging	ton	-	-	169,917.5
Salary	Rial	-	-	1,575
Energy costs (fuel, electricity and water)	L/KW/CM	-	-	1,910
Repair and maintenance	Rial	-	-	4,823.8
<b>Total</b>				<b>178,225.8</b>

### 3.3.3 Management and Human Resources

*Table 13: Salary of Administrative Staff(Million Rial)*

No.	Position	Number of Shifts	Personnel per Shift	Total Staff (People)	Monthly Salary (per Person)	Annual Salary
1	manpower (in Administrative sector)	-	-	6	65	4,680
2	manpower (in Production sector)	-	-	7	56.79	4,770
<b>Total</b>				<b>13</b>		<b>9,450</b>

- Number of skilled personnel required: 6
- Number of non- skilled personnel required: 7
- Total number of personnel required: 13

## 4 Market Study and Competition

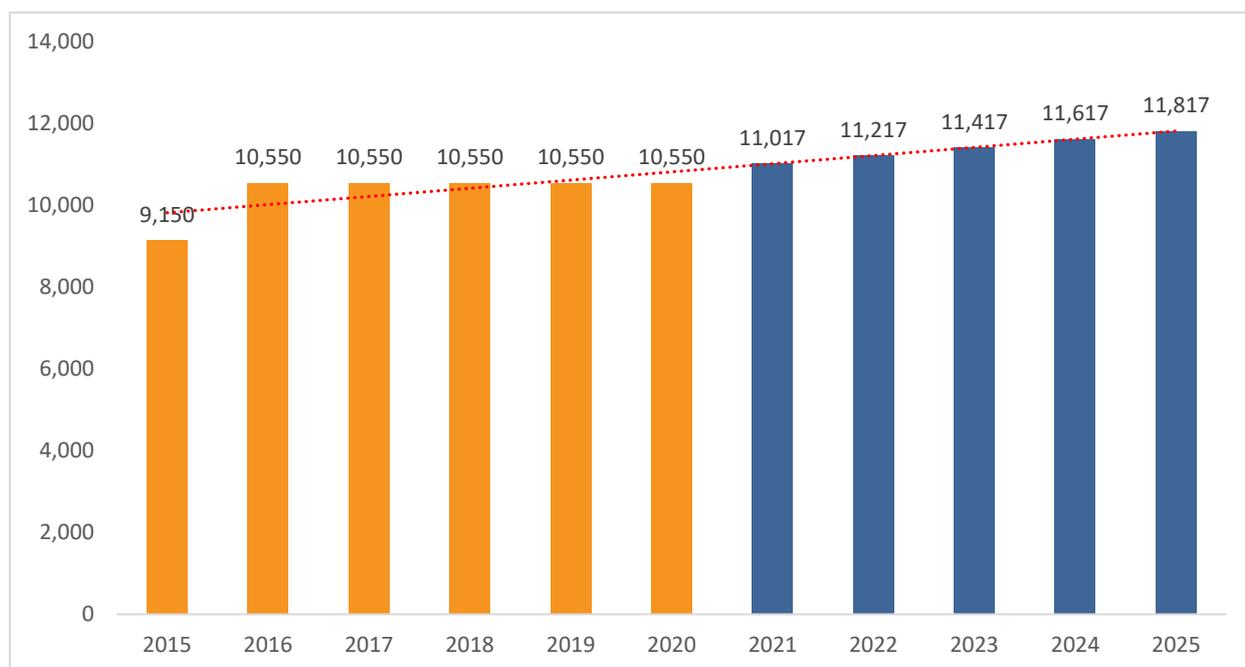
### 4.1 Examining Supply And Demand Trends

Amount of de-skinning pistachios products supply based on production licenses (according to the information of the ministry of industry, mine and trade) inside the country form 2015 up to 2020 is shown in Table 14.

*Table 14: The amount of De-Skinning Pistachios Domestic Supply*

Year	Nominal Capacity (Ton)
2015	9,150
2016	10,550
2017	10,550
2018	10,550
2019	10,550
2020	10,550

Amount of domestic supply (based on Table 14 and with linear regression) is predicted and drawn in Figure 2 from 2015 up to 2025.



*Figure 2: Prediction of Amount of De-Skinning Pistachios Products Supply Inside the Country*

Prediction of amount of de-skinning pistachios products supply from 2021 up to 2025 is shown in Table 15. Obviously, from Table 15 we find out prediction of amount of de-skinning pistachios products supply from 2021 up to 2025 is ascendant. Due to de-skinning pistachios is a service, so there is no customs code for it. Therefore analysis of import and export is eliminated in this section.

*Table 15: Prediction of Amount of De-Skinning Pistachios Products Supply*

Year	Nominal Capacity (Ton)
2021	11,017
2022	11,217
2023	11,417
2024	11,617
2025	11,817

## 5 Financial Projection

### 5.1 The Cost Estimate

Table 16: Total Investment (Million Rial)

No.	Subject	Cost
1	Fixed Capital	138,499
2	Working Capital	171,773
<b>Total investment</b>		<b>310,272</b>

Table 17: Fixed Capital (Million Rial)

Subject	Paid Cost	Cost Required			Total cost	
		Local Cost	Foreign Exchange Cost			Needed Fund
			Rate	(€)		
Land Purchase	0	1,300	240,000	0.0054	0	2,500
Landscaping	0	3,620		0.015	0	8,000
Building	0	45,850		0.191	0	88,250
Equipment and Machinery	0	4,185		0.01744	0	4,185
Laboratory and Workshop Supplies & Equipment	0	5,850		0.02438	0	5,850
Facilities	0	12,216		0.0509	0	12,216
Transportation	0	8,963		0.03735	0	8,963
Office and Services Equipment	0	678		0.002825	0	678
Pre-Operation Costs	0	43,246		0.18045	0	43,307
Unforeseen (10% of The above Items)	0	12,590.8		0.05246	0	17,394.9
<b>Total Fixed Investment</b>	<b>0</b>	<b>138,499</b>	<b>240,000</b>	<b>0.577205</b>	<b>0</b>	<b>191,343.9</b>

Table 18: Working Capital(Million Rial)

Subject	Day	Total
Packaging material (2 months raw materials and packaging)	60	169,917.5
Salary (2months salary)	60	1,575
Imprest fund (15 days of water, electricity, fuel and repair costs)	15	280.5
<b>Total</b>		<b>171,773</b>

Table 19: Fixed and Variable Costs

No.	Production Cost	Fixed Cost		Variable Cost	
		%	Cost	%	Cost
1	Raw material	0	0	100	519,505
2	Energy & utility	20	382	80	1,528
3	Repair & Maintenance	20	964,6	80	3,858
4	Production salary	70	6,615	30	2,835
5	Depreciation	100	12,343	0	0
<b>Total production costs</b>			<b>23,877</b>		<b>528,476</b>

## 5.2 Break-Even Analysis

Table 20: Break-even Analysis

Period	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Break-even ratio (%)	29.08	24.42	20.81	19.75	18.66	16.65	15.96	15.34	14.78	14.26

### 5.3 Sensitivity analysis of IRR

Table 21: Sensitivity Analysis of IRR

Variation (%)	Sales revenue	Increase in fixed assets	Operating costs
-20%	-71.30%	58.39%	111.38%
-16%	-43.15%	56.32%	99.07%
-12%	0.89%	54.41%	86.74%
-8%	19.61%	52.64%	74.38%
-4%	34.95%	51.01%	61.97%
0%	49.49%	49.49%	49.49%
4%	63.79%	48.07%	36.83%
8%	77.99%	46.74%	23.69%
12%	92.14%	45.49%	8.92%
16%	106.25%	44.32%	-15.71%
20%	120.33%	43.21%	-63.15%

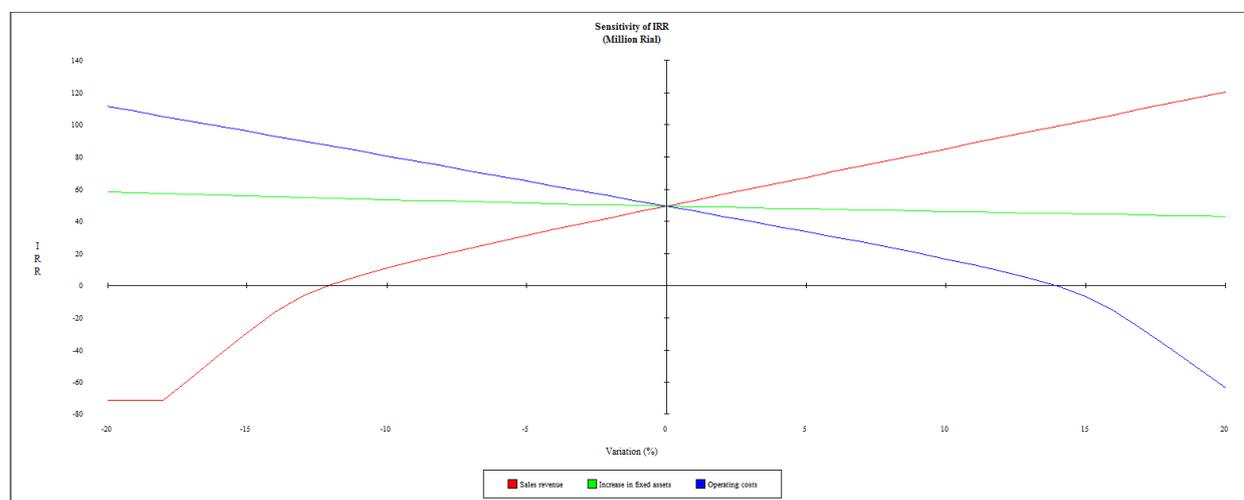


Figure 3: Sensitivity Analysis of IRR

## 6 Duration of Project Operation

The time of doing early stages and completing its process is about 13 month.

Table 22: 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.