



Islamic Republic of Iran

Ministry of Economic Affairs and Finance

General Department of Economic Affairs and Finance of North Khorasan

Processing and Packaging of Red Meat

Esfarayen Industrial park

Center of Investment Services of North Khorasan

2021 April

Summary of Technical-Economical Pre-Feasibility Study

The name: Processing and Packaging of Red Meat

Sector: Agricultural

Subsector: Alterant Industries

ISIC Code: 1511312301

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	Processing and Packaging of Red Meat		
Sector	Agricultural		
Sub Sector	Alterant Industries		
Location	Iran, North khorasan, Esfarayen		
The County	Esfarayen		
Products / Services	Red meat packed in different packages in compliance with hygienic standards		
Annual Nominal Capacity	1,500		Ton
The Raw Material	Red Meat and Packaging Equipment		
Employment	16		Person
Land Area	3,015		m^2
Floor Area	1,800		m^2
Energy and Water Consumption	Water Consumption	10,000	m^3 in year
	Electricity Consumption	110	KW
	Gas Consumption	50,000	m^3 in year
Fixed Capital	196,288		Million Rial
Working Capital (The First Year)	339,838		Million Rial
Payback Period	2.77		Year
Net Present Value (NPV)	764,500		Million Rial
Internal Rate of Return (IRR)	75		%
Modified Internal Rate of Return (MIRR)	33		%
Break Even Point	12		%
The Exchange Rate (Dolar)	240,000		Rial
Description	In this project, all the materials related to the study of the Processing and packaging of red meat market especially domestic and foreign supply and demand, are examined.		

Table 2: Legal Authorizations

Licensure Status:	
Issuance status	Descriptions
Principal Agreement (Establishment licensure)	<input checked="" type="checkbox"/>
Land Allocation	<input checked="" type="checkbox"/>
Environmental Inquiry	<input checked="" type="checkbox"/>
Possibility of Water Supply	<input checked="" type="checkbox"/>
Possibility of Electricity Supply	<input checked="" type="checkbox"/>
Possibility of Electricity Supply	<input checked="" type="checkbox"/>
Possibility of Gas Supply	<input checked="" type="checkbox"/>

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	196,043	240,000	0.81	0	0.81
Working Capital	339,838		1.41	0	1.41
Total Investment	535,881	240,000	2.23	0	2.23

- Value of Foreign Equipment / Machinery: 0 Million Euro
- Value of Local Equipment / Machinery: 0.008 Million Euro
- Net Present Value (NPV): 3.18 Million Euro in Years
- Internal Rate of Return (IRR):75 %
- Payback Period: 2.77Years

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: Esfarayen

Esfarayen is a city and capital of Esfarayen County, North Khorasan Province in Iran. This project will be construct in part with coordinates (532608, 4109627) 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: Processing and Packaging of Red Meat

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	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 6: Project Specifications Based on ISIC Code

The Product	ISIC Code	Customs Tariff	Environmental Category
Processing and Preserving of Red Meat	1511312301	Service	5

In this project, all the materials related to the study of the Processing and packaging of red meat market especially domestic and foreign supply and demand, are examined. The purpose of producing these products is to increase added value, higher profit margins, ease of supply, increase shelf life, ease of consumption by observing its health aspects for consumers. According to studies on the supply and demand of milk, the production of this product from 2021 to 2025 will have an increasing trend that reassures new investors.

According to studies, demand is upward until 2025, so that from 2020 to 2023, about 40,000 tons can be added to the country's production. Now, if we assume that factories (with a physical progress of more than 75%) reach production, the shortage of demand in the country will be 24,000 tons. It should be noted that the capacity of the factory is 1,500 tons, so it can be claimed that without worrying about selling the product, the factory can be established. From the provincial point of view, according to the studies conducted in the Jihad Agricultural Organization of the province, a factory with a capacity of 1,500 tons of meat packaging for various livestock is needed.

Meat processing and packaging operations are performed as follows.

The slaughtered livestock is brought from the slaughterhouse for processing and packing by special meat trucks. After unloading at the company, the meat it is placed in a pre-cooler warehouse temporary and at the same time it is transported to the meat processing hall by wheeled wagons for processing operations and placed on the work table. And different parts of the animal's body, including: head, thighs and chest, trunk and neck are separated and after separating each of the above items, packed in 1 to 2 kg pieces.

3.2 Project's Requirements

A quality control system and compliance with standards is essential. Presenting inspection steps in different sections such as raw materials, product, wastewater, etc. by mentioning the control parameters of each stage and the results obtained from it and how to apply the results in material processing is of great importance.

They are closely monitored by regulatory bodies and health authorities, so a laboratory that can monitor the health and safety of the goods in all stages of production is considered.

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 Esfarayen	3,015	0.6	0	0	2,261

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

Description	Working Capacity	Unit	Unit Price	Paid Cost	Needed Fund	Total
Excavation	1,008	cm	0.3	0	0	302.4
Wall Construction and door	534.4	Sm^2	9	0	0	4,809.6
street construction (5% of the amount of land)	168	Sm	7	0	0	1,176
Green space and Lighting (1% of the amount of land)	33.6	No^3	8	0	0	268.8
Total				0	0	6,556.8

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

Description	Area (m ²)	Unit Price	Paid Cost	Needed Fund	Total
Production Hall	1,000	25	0	0	25,000
Raw Material Warehouse	100	30	0	0	3,000
Cold Store	400	25	0	0	10,000
Office Building and Welfare and Guardroom	200	45	0	0	9,000
Freezing Tunnels and Other Facilities	100	45	0	0	4,500
Total			0	0	51,500

Table 10: Infrastructures

No	Description	Unit	Annual Consumption	Unit Cost (Rial)	Total (Million Rial)
1	Water Consumption	m ³	10,000	7,000	70
2	Electricity Consumption	Kwh	300,000	1,100	330
3	Gas Consumption	m ³	50,000	1,200	60
4	Gasoline	Litr	5,000	30,000	150
5	Unforeseen	5% of the above		-	30.5
Total					640.5

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)		
Hydraulic jack (for cold store door)	83.2	83.2	240,000	0.0001	0	83.2
Double rail system with relevant supporters (for skin separation)	627.9	627.9		0.002	0	627.9
Auxiliary mechanism for separating meat	166.4	166.4		0.001	0	166.4

Description	Unit Cost	Costs Required				Total
		Local Costs	Costs of Currency		Cost To Complete	
			Rate	(Million Euro)		
9-meter all-steel conveyor belt (for split and clean meat)	309.4	309.4		0.001	0	309.4
Steel table with Teflon surface (7*5)	70.2	140.4		0.002	0	140.4
Wheeled pallets (for carrying bones)		-		-	0	-
Wheeled pallets (for transporting fat)		-		-	0	-
Steel table for cleaning and degreasing	31.2	31.2		0.002	0	31.2
All-steel automatic revolving table	175.5	175.5		0.002	0	175.5
Packing table	41.6	41.6		0.0001	0	41.6
Electrical panel	127.4	127.4		0.002	0	127.4
Sterile toilet with sterilizer	45.5	45.5		0.0001	0	45.5
Saw (for cutting meat)	305.5	305.5		0.001	0	305.5
Labeler TSC 2,410	97.5	97.5		0.0001	0	97.5
Total Cost of Machinery		2,151.5	240,000	0.008	0	2,151.5

- 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
Beef	Ton	909	860	781,740
Lamb meat	Ton	1,039	1,160	1,205,240
Total+ Other Items				2,026,280

3.3.3 Management and Human Resources

Table 13: 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	67.5	3,240
2	manpower (in Production sector)	-	-	12	56.87	8,190
Total				16		11,430

- Number of skilled personnel required: 12
- Number of non- skilled personnel required: 4
- Total number of personnel required: 16

4 Market Study and Competition

4.1 Examining Supply and Demand Trends

The amount of domestic supply or capacity of processing and packaging of red meat based on production licenses (according to the information of the ministry of industry, mine and trade) from 2015 to 2020 is as follows.

Table 14: The Amount of Domestic Supply of Aluminum sheets and coils

Year	Nominal Capacity (Tons)
2015	225,332
2016	251,355
2017	282,430
2018	320,460
2019	356,745
2020	570,565

The real production capacity of active units in 2015 up to 2020 is shown in Table 15.

Table 15: The Real Production Capacity of Active Units in 2015 up to 2020

Year	Nominal Capacity (Tons)
2015	92,043
2016	102,673
2017	115,366
2018	130,900
2019	145,722
2020	233,062

The following chart shows the prediction of production according to the Table 15 based on linear regression.

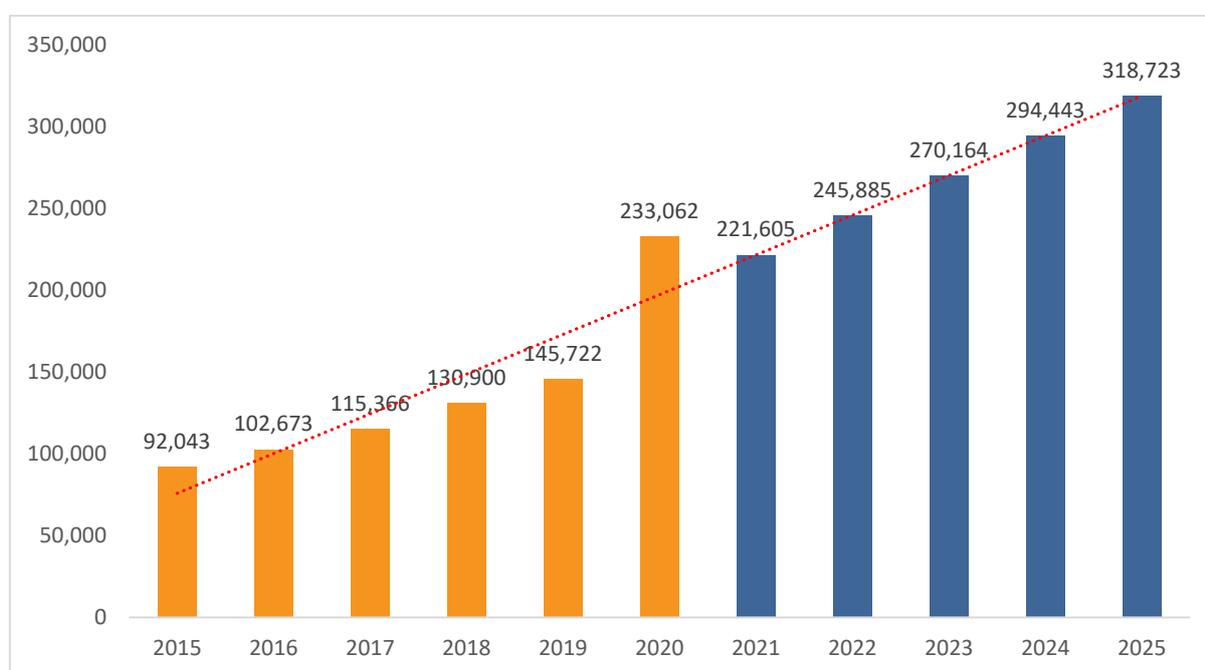


Figure 2: The Prediction of Production

As Figure 2 shows, the amount of processing and packaging of red meat production is increasing, so there is the capacity to create new factories.

Considering that processing and packaging of red meat is a service, it has no customs tariff, so import and export analysis is removed. In the Table 16, the information of the units that have obtained license is presented based on the amount of progress.

Table 16: The Information of The Units that have Obtained License

Progress Percent	Capacity (Tons)
0% - 25%	13,480
25% - 50%	43,942
50% - 75%	21,940
75% - 100%	16,100

5 Financial Projection

5.1 The Cost Estimate

Table 17: Total Investment (Million Rial)

No.	Subject	Cost
1	Fixed Capital	196,043
2	Working Capital	339,838
Total Investment		535,881

Table 18: Fixed Capital (Million Rial)

Subject	Paid Cost	Cost Required				Total Cost
		Local Cost	Foreign Exchange Cost		Needed Fund	
			Rate	(€)		
Land Purchase	0	6,557	240,000	0.02	0	6,557
Landscaping	0	51,500		0.21	0	51,500
Building	0	2,152		0.21	0	2,152
Equipment and Machinery	0	5,350		0.008	0	5,350
Laboratory and Workshop Supplies and Equipment	0	21,681		0.09	0	21,681
Facilities	0	3,200		0.01	0	3,200
Transportation	0	490		0.002	0	490
Office and Services Equipment	0	85,276		0.35	0	85,276

Subject	Paid Cost	Cost Required			Total Cost	
		Local Cost	Foreign Exchange Cost			Needed Fund
			Rate	(€)		
Pre-Operation Costs		17,621		0.07	0	17,621
Unforeseen (10% of the above Items)	0	6,557		0.02	0	6,557
Total Fixed Investment	0	196,043.42	240,000	0.81	0	196,043.42

Table 19: Working Capital (Million Rial)

Subject	Day	Total
Packaging material (2 months raw materials and packaging)	60	337,713
Salary (2months salary)	60	1,905
Imprest fund (15 days of water, electricity, fuel and repair costs)	15	220
Total		339,838

Table 20: Fixed and Variable Costs

No.	Production Cost	Fixed Cost		Variable Cost	
		%	Cost	%	Cost
1	Raw material	0	0	100	2,026,280
2	Energy & utility	20	128	80	512
3	Repair & Maintenance	20	928	80	3,711
4	Production salary	70	8,001	30	3,429
5	Depreciation	100	17,102	0	0
Total Production Costs			26,159		2,033,933

5.2 Break-Even Analysis

Table 21: Break-even Analysis

Period	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Break-even ratio (%)	26.14	21.85	18.54	17.51	16.52	15.39	14.65	13.97	13.36	12.80

5.3 Sensitivity analysis of IRR

Table 22: Sensitivity analysis of IRR

Variation (%)	Sales Revenue	Increase in Fixed Assets	Operating Costs
-20.00%	-76.45%	43.16%	188.50%
-16.00%	-76.45%	41.99%	157.28%
-12.00%	-76.45%	40.89%	126.47%
-8.00%	-35.60%	39.85%	96.17%
-4.00%	8.45%	38.88%	66.57%
0.00%	37.97%	37.97%	37.97%
4.00%	68.22%	37.10%	10.08%
8.00%	99.55%	36.28%	-29.80%
12.00%	131.62%	35.51%	-68.40%
16.00%	164.24%	34.77%	-68.40%
20.00%	197.30%	34.07%	-68.40%

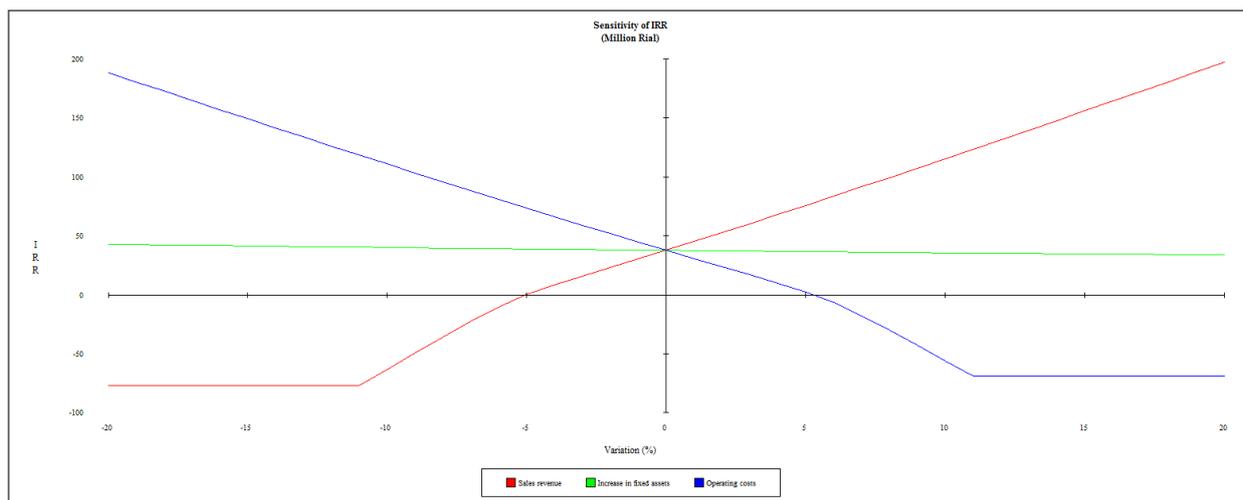


Figure 3: Sensitivity analysis of IRR

6 Duration of Project Operation

The time of doing early stages and completing its process is about 1 year.

Table 23: 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.