



Islamic Republic of Iran

Ministry of Economic Affairs and Finance

General Department of Economic Affairs and Finance of North Khorasan

Canned fruit, vegetables and pulses Bidak Bojnourd Industrial Park

Center of Investment Services of North Khorasan

2021 April

Summary of Technical-Economical Pre-Feasibility Study

The name: Canned fruit, vegetables and pulses

Sector: Agricultural

Subsector: Alterant Industries

ISIC code: 1513312391-1513412392-1513412396-1513412393

The owner of:

Organization of Economic Affairs and Finance (North Khorasan)



The ADDRESS:

Iran, North Khorasan, Bojnourd

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1 Abstract

1.1 Project Profile - Summary Sheet

Table 1: Summary Sheet

Project Introduction			
Project Title	Canned fruit, vegetables and pulses		
Sector	agricultural		
Sub Sector	Alterant industries		
Location	Iran, North khorasan, Bojnourd		
The County	Bojnourd		
Products / Services	Canned fruit, vegetables and pulses		
Annual Nominal Capacity	1,000		Tons
The Raw Material	All kinds of fruit, pluses, sugar and packaging equipment		
Employment	39		Person
Land Area	3,900		m^2
Floor Area	1,380		m^2
Energy and Water Consumption	Water Consumption	10,000	m^3 in year
	Electricity Consumption	100	KW
	Gas Consumption	400,000	m^3 in year
Fixed Capital	143,523		Million Rial
Working Capital (The First Year)	37,252		Million Rial
Payback Period	4.35		Year
Net Present Value (NPV)	101,946		Million Rial
Internal Rate of Return (IRR)	34		%
Modified Internal Rate of Return (MIRR)	24		%
Break Even Point	48		%
The Exchange Rate (Dolar)	240,000		Rial
Description	In this project, all the materials related to the study of the Canned fruit, vegetables and pulses 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	143,523	240,000	0.5980	0.5980	0.5980
Working Capital	37,257		0.1562	0.1562	0.1562
Total Investment	180,780		0.7542	0.7542	0.7542

- Value of Foreign Equipment / Machinery: Million Euro
 - Value of Local Equipment / Machinery: 0.17069 Million Euro
- Net Present Value (NPV): 0.4248 Million Euro in Years
- Internal Rate of Return (IRR): 34%
- Payback Period: 4.35 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: Bojnourd

Bojnourd is the capital city of North Khorasan Province, Iran. It is about 701 km from Tehran. Bojnourd is located in the plains enjoying a mild and mountainous weather.

There are several reason for investing in bojnourd, such as

2.2.1 Agriculture Section Advantages

- Suitable and diverse climatic conditions and having relatively suitable rainfall
- Having far more livestock per capita than the national average
- Having a considerable supply of diverse fruits
- The Possibility of establishing agricultural conversion industries in industrial parks

2.2.2 Tourism Section Advantages

- Having the presence of different ethnicities and producing handicrafts related to the culture of each ethnic group
- Being in a special geographical position and traveling 24 million passengers annually (ten percent of the total number of traveling passengers in the country) through North Khorasan

2.2.3 Mine and Industry Section Advantages

- Having large industries of alumina, steel, piping, petrochemical, cement and the availability of the development of industrial activities in downstream industries and creating a value chain.
- Conducting mineral exploration studies in Bojnourd, and valuable minerals for processing
- The existence of the Bojnord special economic zone has distinct advantages, including the shortest distance to the provincial capital among all special economic zones in the country, as well as its proximity to the Bidak industrial town.

2.2.4 Urban Development Section Advantages

- Appropriate and significant justification of urban and commercial projects and plans according to the characteristics and advantages of tourism, agriculture and industrial areas.
- The existence of transferable lands with suitable location.
- The need for commercial and tourism spaces in Bojnord due to the low per capita of these spaces.

This project will be construct in part 44 with coordinates (4147328,521800) in Bidak Bojnourd Industrial Park. Proposed location of project is shown in Figure 1.

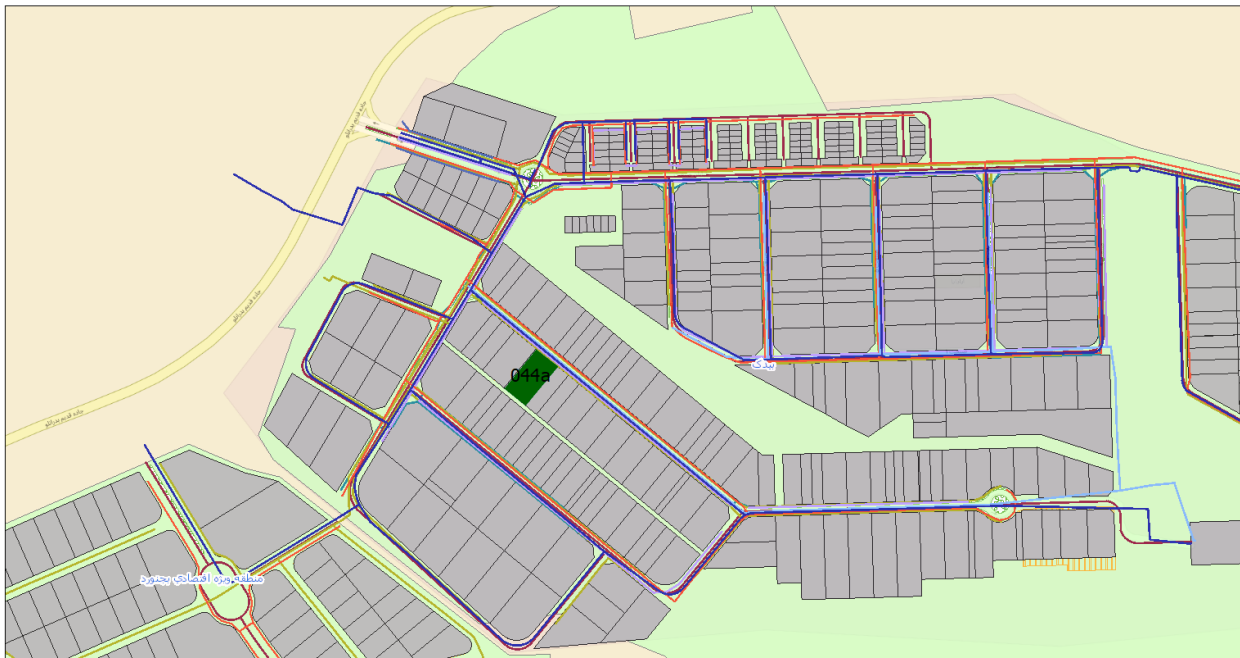


Figure 1: Location of Proposed Land in Bidak Bojnourd Industrial Park

2.3 The Project: Canned fruit, vegetables and pulses

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	8	is provided
8	Amirabad Port (Behshahr)	417	is provided
9	Bandar Abbas Port	1,493	is provided
10	Rail way station of Joveyn	170	is provided
11	Rail way station of Jajarm	192	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
Canned fruit,vegetables and pulses	1513312391	2008	3

In this project, all the materials related to the study of the canned fruit, vegetables and pulses market especially domestic and foreign supply and demand, are examined.

The necessity of implementing this plan can be examined from several aspects. The first aspect is the abundance of raw materials, ie fruits, vegetables and legumes in the project site and neighboring provinces (Razavi and South Khorasan). The high volume of fruit production in orchards, vegetables and legumes in agricultural fields of Khorasan province and their sale in bulk and the very low price of bulk buyers is a big challenge that in these circumstances has increased the need for packaging fruits and vegetables and legumes.

The second aspect is related to manpower. Although unemployment rates in North Khorasan Province are relatively favorable, but the presence of a large number of skilled workers can be a very valuable opportunity to set up a production line and packaging of canned fruits, vegetables and legumes that do 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.

According to studies, the production of canned fruits, vegetables and legumes is expected to increase between 2,021 and 2,025; which reassures new investors. So that the amount of production will increase by about 140,000 tons from 2,020 to 2,023, which considering the capacity of factories with progress (above 75%), the country's need to produce by 2,023 is about 100,000 tons. It should be noted that the capacity of this factory is 1,000 tons, so from the perspective of the country's needs, there is no need to worry about the construction of this factory. From the provincial point of view, considering that there is only one factory in Esfarayen city with a capacity of 450 tons and in other cities of the province, especially Bojnourd, there is no factory in this regard, while the raw materials of the project are abundant in the province. So the construction of this factory is one of the necessities of the province.

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 during operation, and in the last stage, quality control is related to the quality of packaging.

Product standards:

National Standard Organization of Iran for canned carrots - features and test methods with number 10496, canned green peas - features and test methods with number 118, canned green beans - features and test methods with number 119, compote and canned - energy consumption criteria in Production Processes No. 16747 defines the standard that the relevant standards must be observed for each aspect of the work.

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 Bojnourd	3,900	4.5	0	0	17,550

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

Description	Working Capacity	Unit	Unit Price	Paid Cost	Needed Fund	Total
Excavation	3,900	cm	0.3	0	1,170	1,170
Wall Construction and door	310	Sm	9	0	2,790	2,790
street construction (5% of the amount of land)	195	Sm	7	0	1,365	1,365
Green space and Lighting (1% of the amount of land)	39	No	8	0	312	312
Total				0	5,637	5,637

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

Description	Area (m^2)	Unit Price	Paid Cost	Needed Fund	Total
Canned fruit production hall	500	25	0	1,250	1,250
Canned beans & vegetables production hall	500	25	0	1,250	1,250
Raw material & Product warehouse	300	30	0	9,000	9,000
Office building	50	45	0	2,250	2,250
welfare and guardroom	30	45	0	1,350	1,350
Total			0	37,600	37,600

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	Kw	500,000	1,100	550
3	Gas consumption	m^3	400,000	1,200	480
4	petrol	l	7,000	30,000	210
Total					1,310

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)		
Machines related to production lines	-	40,965	240,000	0.17069	0	40,965
Total cost of machinery		40,965		0.17069	0	40,965

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 & Packaging	ton	-	-	32,483
Salary	$Rial$	-	-	4,530
Energy costs (fuel, electricity and water)	$L/KW/CM$	-	-	6,660
Repair and maintenance	$Rial$	-	-	4,619
Total				48,292

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)	-	-	5	71.25	4,320
2	manpower (in Production sector)	-	-	34	57.66	22,860
Total				39		27,180

- Number of skilled personnel required: 23
- Number of non- skilled personnel required: 16
- Total number of personnel required: 39

4 Market Study and Competition

4.1 Examining Supply And Demand Trends

The amount of domestic supply or production of canned fruit, vegetables and pluses based on license (according to the information of the Ministry of Industry, Mine and Trade) from 2015 up to 2020 is presented in Table 14.

Table 14: The Amount of Domestic Supply

Year	Nominal Capacity (Tons)
2015	76,645
2016	187,183
2017	206,955
2018	251,966
2019	290,278
2020	409,564

The real production capacity of active units in 2015 up to 2019 is shown in Table 15.

Table 15: The Real Production Capacity of Active Units in 2015 up to 2019

Year	Nominal Capacity (Tons)
2015	40,702
2016	99,402
2017	109,902
2018	133,805
2019	154,150
2020	217,496

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

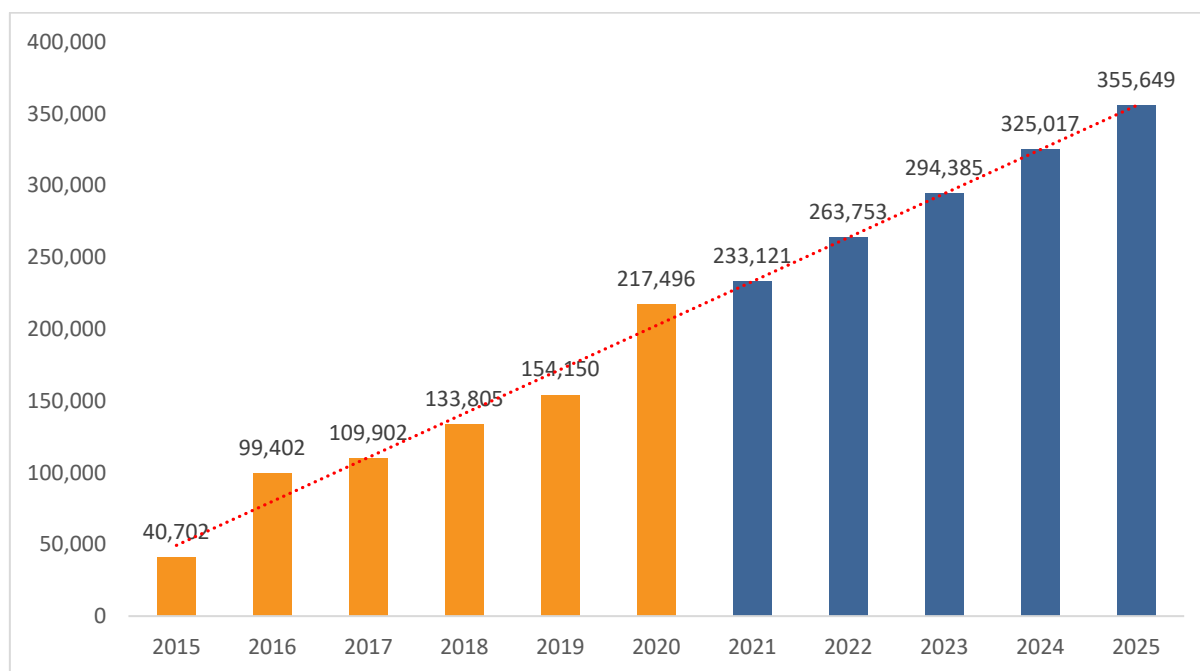


Figure 2: The Prediction of Production

As the Figure 2 shows, the amount of canned fruit, vegetables and pulses production is increasing, so there is capacity for building new factories.

The amount of imports to the country is based on the information of the Tehran Chamber of Commerce, Industries, Mine and Agriculture at <http://tccim.ir> is presented in Table 16.

Table 16: The Amount of Imports

Year	Weight (Tons)	Value (Million Rial)	Value (Million Dollar)	Number of Country	Major Countries
2015	343	6,989	0.25	5	Afghanistan 75%, Thailand 24%, UAE 1%
2016	465	8,689	0.28	3	Thailand 83%, Afghanistan 17%
2017	412	8,629	0.25	4	UAE 84%, Spain 11%, Italy 3%
2018	180	4,125	0.10	1	Thailand 100%
2020 (9 months)	47	2,426	0.06	1	Thailand 100%
Total	1,447	30,858	0.93	9	Thailand 48%, UAE 24%, Afghanistan 22%

The following chart shows the prediction of imports according to the Table 16 based on linear regression.

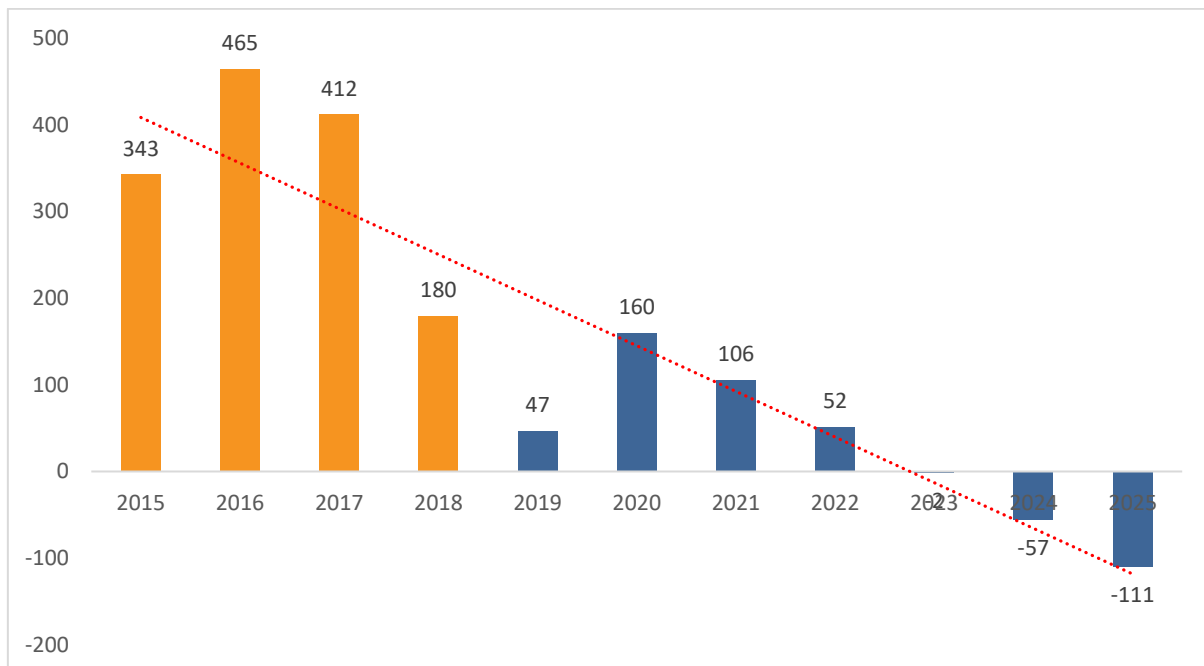


Figure 3: The Prediction of Imports

As the Figure 3 shows, the amount of imports is decreasing.

The amount of exports from the country is based on the information of the Tehran Chamber of Commerce, Industries, Mine and Agriculture at <http://tccim.ir> is presented in Table 17.

Table 17: The Amount of Exports

Year	Weight (Tons)	Value (Million Rial)	Value (Million Dollar)	Number of Country	Major Countries
2015	0	0	0	0	-
2016	7,184	409,445	13.06	33	Afghanistan 46%, Iraq 31%, Pakistan 7%
2017	5,544	282,32	8.42	43	Afghanistan 48%, Iraq 20%, Pakistan 11%
2018	8,312	816,143	14.75	30	Afghanistan 39%, Iraq 20%, Pakistan 23%
2020 (9 months)	6,647	1,489,595	9.89	21	Afghanistan 62%, Pakistan 19%, Iraq 14%
Total	27,688	2,997,484	46.12	49	Afghanistan 48%, Iraq 22%, Pakistan 16%

The following chart shows the prediction of exports according to the based on linear regression.

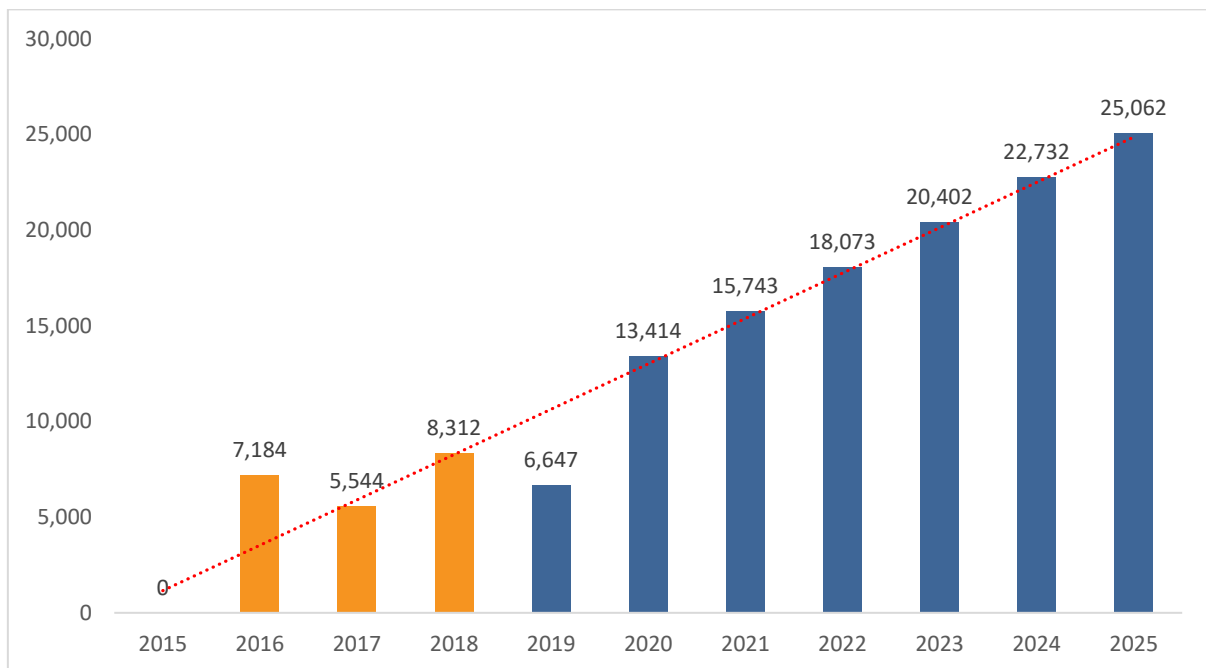


Figure 4: The Prediction of Exports

The amount of domestic demand, which is equal to the amount of domestic production plus the amount of imports minus the amount of exports, for the three products is given in the Table 18.

Table 18: The Amount of Domestic Demand

Year	The Amount of Domestic Demand of Canned Fruit, Vegetables and Pulses (Tons)
2015	41,045
2016	92,683
2017	104,770
2018	125,673

The following chart shows the prediction of domestic demand according to the Table 18 based on linear regression.

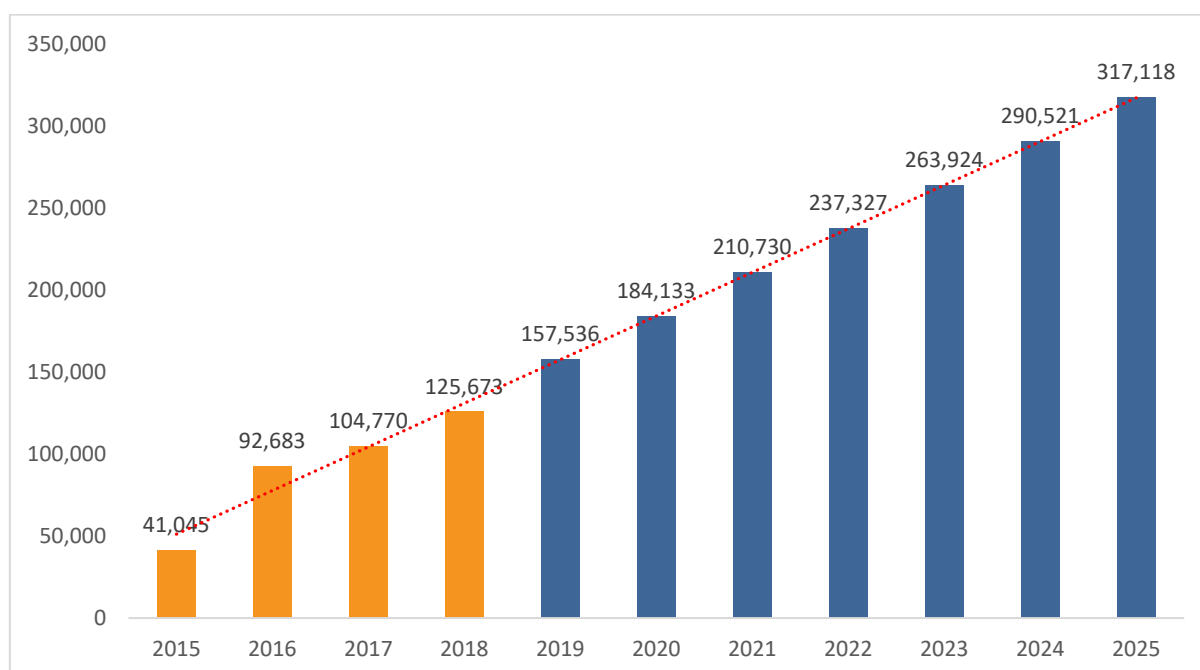


Figure 5: The Prediction of Domestic Demand

As the Figure 5 shows domestic demand of canned fruit, vegetables and pulses is increasing. So it can be claimed that the factory can be established without the concern of selling the product.

5 Financial Projection

5.1 The Cost Estimate

Table 19: Total Investment (Million Rial)

No	Subject	Cost
1	Fixed Capital	143,523
2	Working Capital	37,257
Total investment		180,780

Table 20: Fixed Capital (Million Rial)

Subject	Paid Cost	Cost Required				Total Cost
		Local Cost	Foreign Exchange Cost		Needed Fund	
			Rate	(€)		
land purchase	0	17,550	240,000	0.0731	17,550	17,550
Landscaping	0	5,637		0.02349	5,637	5,637
Building	0	37,600		0.1567	37,600	37,600
equipment and machinery	0	40,965		0.17069	40,965	40,965
Laboratory & workshop supplies & equipment	0	498		0.0021	498	498
Facilities	0	14,700		0.0613	14,700	14,700
Transportation	0	2,700		0.0113	2,700	2,700
Office and services equipment	0	560		0.0023	560	560
Pre-operation costs	0	10,265		0.0428	10,265	10,265
Unforeseen (10% of the above items)	0	13,048		0.0544	13,048	13,048
Total Fixed investment	0	143,523			0.5980	143,523

Table 21: Working Capital (Million Rial)

Subject	Day	Total
Packaging material (2 months raw materials and packaging)	60	32,483
Salary (2 months salary)	60	4,530
Imprest fund (15 days of water, electricity, fuel and repair costs)	15	244
Total		37,257

Table 22: Fixed and Variable Costs

No	Production Cost	Fixed Cost		Variable Cost	
		%	Cost	%	Cost
1	Raw material	0	0	100	194,900
2	Energy & utility	20	1,332	80	5,328
3	Repair & Maintenance	20	924	80	3,695
4	Production salary	70	19,026	30	8,154
5	Depreciation	100	10,591	0	0
Total production costs			31,873		212,077

5.2 Break-Even Analysis

Table 23: Break-even Analysis

Period	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Break-even ratio (%)	48.17	46.71	45.39	44.19	42.96	41.52	40.67	39.90	39.20	38.56

5.3 Sensitivity Analysis of IRR

Table 24: Sensitivity Analysis of IRR

Variation (%)	Sales Revenue	Increase in Fixed Assets	Operating Costs
-20.00%	-39.03%	40.71%	66.05%
-16.00%	-5.41%	39.14%	59.68%
-12.00%	8.11%	37.71%	53.31%
-8.00%	17.67%	36.38%	46.92%
-4.00%	26.08%	35.15%	40.50%
0.00%	34.01%	34.01%	34.01%
4.00%	41.74%	32.94%	27.38%
8.00%	49.38%	31.95%	20.46%
12.00%	56.99%	31.01%	12.95%
16.00%	64.58%	30.13%	4.15%
20.00%	72.18%	29.30%	-9.86%

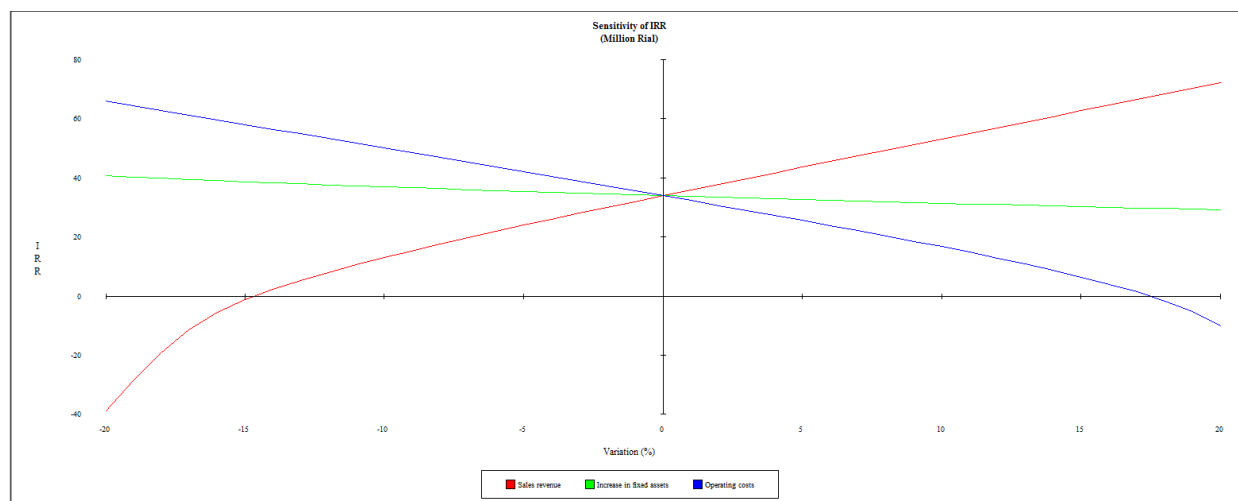


Figure 6: Sensitivity Analysis of IRR

6 Duration of Project Operation

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

Table 25: 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.