

**In the name of Allah**

## **Pre-feasibility studies**

**Project Name:**

**Meat Products  
(sausages, Lunch meat and burgers)**

**Project Owner:**

**Khorak Sazan Omid Company**

**Advisor of the project:**

**Zahra Badoei**

**Project address: Khuzestan, Izeh Industrial Estate**

**Date of P.F.S: February , 2021**

## Summary of pre-feasibility plan

General Specification	
Name of The Project	Meat products ( sausages, Lunch meat and burgers)
Project Capacity	2700 tons
Personnel Number	30 persons
Working Days	300 days
Product Usage	Fast food
Marketing	
Product Global Price	6.73 \$US/kg
Domestic Demand	505 thousand ton
Domestic Production	507 thousand ton
Import	-
Export	2235 ton
Technical Study	
Land Area	1405 m <sup>2</sup>
Building Area	5699.5 m <sup>2</sup>
Main Raw Materials	Red and White meats & authorised edible additives
Supplying Place of Raw Materials	Domestic & Foreign
Power Requirement	250 KW
Water Requirement	4000 m <sup>3</sup>
Fuel Requirement	600,000 m <sup>3</sup> gas
Economical & Financial Study	
Fixed Investment Cost	131,930.1 million Rails $\cong$ 0.511 million Euro
Working Capital	217,927.38 million Rail's $\cong$ 0.845 million Euro
Total Investment Cost	349,857.63 million Rail's $\cong$ 1.356 million Euro
Annual Sale	1,710,000.0 million Rail's $\cong$ 6.63 million Euro
Net Present Value(NPV)	449,476.66 million Rail's $\cong$ 1.74 million Euro
Break Even Point(BEP)	23.36%
Internal Rate of Return(IRR)	70%
Investment Return Period	3 years
<u>Investment Sources Ratio:</u>	
Equity:21.3%	74,030.3 million Rails $\cong$ 0.286 million Euro
Bank facilities: 10.5%	37,000.0 million Rails $\cong$ 0.144 million Euro
Finance: 68.2%	238,827.33 million Rails $\cong$ 0.926 million Euro

Index	Page No.
<b>Introduction:</b>	<b>4</b>
<b>1.Product introduction</b>	<b>6</b>
1.1. Product name and ISIC code	7
1.2. Customs tariff code	8
1.3. Import and export products conditions	8
1.4. Review and presentation of standard (national or international)	9
1.5. Review and provide information about domestic production prices and global price of the product	9
1.6. Explaining the usage and application of the product in the domestic and foreign markets	10
1.7. Evaluation of alternative products, competitors and analysis and its effects on consumption of the product	10
1.8. The strategic importance of the product in Iran and foreign markets	10
1.9. The major producing countries and product consumer	11
<b>2. Situation of supply and demand in Iran and foreign markets</b>	<b>11</b>
2.1. Study of utilization capacity and production process since the beginning of the Sixth Five Year Economic Development Plan of the Islamic Republic of Iran, unit location, the number and level of technology of available units, nominal capacity, practical capacity, lack of full capacity utilization reasons, the name of country and manufacturer of machinery used in production	11
2.2. Study of the status of new projects and under construction development projects (In terms of number, capacity, operation place, the physical progress rate and the level of their technology and investments by both foreign exchange and other required) and semi-finished projects	13
2.3. The trend of imports of the product in the last five years	14
2.4. The trend of consumption in the last five years	14
2.5. The trend of export product in the last five years and the possibility of its development	15
2.6. Reviewing of products needs based on export priority	16
<b>3- Overview of technology and production methods and product supply in the country and compare it with other countries</b>	<b>18</b>
<b>4. Determine the strengths and weaknesses of known technologies (in outline) in the production process</b>	<b>19</b>

<b>Index</b>	<b>Page No.</b>
<b>5. Determine the minimum economic capacity includes the estimated volume of fixed investment estimated volume with the separation of Rials and foreign exchange (Using information of available and under construction units, UNIDO, internet, the global data banks, technology selling companies and equipment, etc.)</b>	<b>20</b>
<b>6-The annual major required raw materials and annual and to supply outside or inside the country, domestic and foreign exchange and checking the major developments in the supply of essential required items in the past and future</b>	<b>32</b>
<b>7. The risk analysis of the project</b>	<b>35</b>
<b>8. Human resources and employment status</b>	<b>37</b>
<b>9.Determine the amount of water, electricity, gas, telecommunications and communication facilities (road - rail - Airport - Port ...) and how to provide them in the appropriate area to implementation</b>	<b>37</b>
<b>10. Economic and trade support for plan</b>	<b>38</b>
10.1. Supporting of Customs tariff (products and machines) with global tariff	38
10.2. financial support (existing units and projects) banks - investment firms	39
<b>11.Analyzes And providing summary and final offer</b>	<b>40</b>
<b>12. Summary of pre-feasibility plan</b>	<b>42</b>

## **Introduction:**

Regarding to changes in lifestyle and employment, the pattern of food consumption in the world has been changed too and the tendency to consume fast foods and fast foods has been increased. Sausage and lunch meat as the oldest and most consumed ready-made food have a special place in the food basket of consumers worldwide. In our country, the meat industry has been one of the most important branches of the food industry, especially in the last few years. Therefore, if the production of these foodstuffs is meticulous and the monitoring and controlling systems are well implemented, they can play an important role in the nutrition and food baskets of consumers.

Meat products such as sausages, lunch meats and hamburgers are among the food items in the Iranian household food basket, which are popular because of their good taste. In addition, their consumption is also increasing so that per capita consumption has increased from 5.5 to 8.5 kg per person in the last 5 years.

Khorak Sazan Omid Company located in Izeh Industrial Estate has been obtained the necessary licenses from the Ministry of Industry, Mine and Trade as well as the Food and Drug Administration of Ahvaz Jundishapur University of Medical Sciences during 2008-2013 with the brand "Taha" It has produced sausage, lunch meats and hamburger products. One of the most important target markets of this company is Khuzestan, Isfahan provinces and neighboring provinces which has been well received due to its high quality but the production has been stopped because of rising meat prices and lack of capital.

Therefore, considering the technical capability of the company managers and the available equipment and facilities, if the necessary liquidity is provided for working capital and partial purchase of equipment, it is anticipated that the manufactured products will be highly welcomed. As well as selling in domestic markets, exporting to Neighboring countries, especially Iraq and Afghanistan is also possible.

It should be noted that Izeh city is one of the main centers of livestock and poultry in Khuzestan province and it is possible to supply some of the necessary materials for production of Poultry products such as chickens.



## **1.Product introduction:**

As defined by the national standard of Iran, Sausages and lunch meat are a sustainable mixture of meat from slaughter animals such as cattle, calves, sheep, poultry, fats and water that, together with other substances within natural or artificial coatings under appropriate conditions. It is filled and prepared after the appropriate heat treatment and other processes necessary for human consumption.

These processes have a short shelf life and must be subjected to certain cooling conditions until use. The type of raw materials make the conditions for micro-organisms to grow and reproduce, and if the principles of hygiene are not met at all stages of production, from raw material supply to consumption, it can pose serious risks to consumers.

The Meat rate in sausages and lunch meat should be at least 50%, fat at maximum 20% and starch content at less than 2%. More than 50 types of sausages and lunch meats are produced in Iran. The difference between these products are being mostly due to the percentage of meat, type of meat, spices, amount and type of fat and water.

The ingredients of sausage and lunch meats contain the following nutrients:

- Meat: Includes healthy and hygienic meat of slaughter animals (red meat and poultry)
- Food grade authorized protein materials for human consumption: Includes caseinate and casein, gluten, soy protein varieties, milk powder and egg or powder of them.
- Edible Animal Fats, Butter and Edible Oils: Edible Oils, Butter and Margarine
- Wheat flour, edible starches from wheat, rice, corn and potatoes
- Salt and sugar
- Pistachio, spices, mushrooms, edible vegetables such as chili peppers, carrots
- Drinking water
- Only authorized edible additives include sodium nitrite, ascorbic acid, sodium polyphosphate and substances such as lactates and their derivatives

### **Sausage and lunch meat Features based on meat percentage**

Due to the importance of meat in sausages and lunch meats, these products are divided into four groups based on the percentages of meat in the following table:

1. Sausages and lunch meats 40-50% of meat such as German sausages, Martadella lunch meat and..
2. Sausages and lunch meats 51-60% of meat such as cocktail sausages, dried lunch meat and...
3. Sausages and lunch meats 80-61% of meat such as hot dogs, special dried lunch meat, etc.
4. Sausages and lunch meats 81-90% of meat like premium lunch meat



Chemical Properties of Sausages and lunch meats by Meat Percentage

<i>Factor group</i>	<i>At least 40-50% meat</i>	<i>meat 51-60%</i>	<i>meat 61-80%</i>	<i>Meat 81-90%</i>
<i>moisture%</i>	<i>55max</i>	<i>4p+10max</i>	<i>4p+10max</i>	<i>4p+10max</i>
<i>protein (P)%</i>	<i>9.5-11.5</i>	<i>12 min</i>	<i>14 min</i>	<i>15.5 min</i>
<i>total fat%</i>	<i>23max</i>	<i>22max</i>	<i>15max</i>	<i>10max</i>
<i>starch%</i>	<i>9 max</i>	<i>6 max</i>	<i>4.5 max</i>	<i>3 max</i>



### 1.1. Product name and ISIC code

ISIC is the most common classification and categorization of economic activities. ISIC classification is defined as: classification and categorization of the international standard industrial classification of all economic activities. This classification is allocated to one of the 2, 4, and 10 digit codes based on the type of industry and product. the ISIC codes related to sausage, lunch meat and hamburger are given in the table below.



<i>Product name</i>	<i>ISIC Code</i>	<i>Unit</i>
Types of sausages and lunch meat from Poultry and livestock	1511312393	ton
Types of poultry sausages and lunch meat	1511412394	ton
Types of sausages and lunch meat with the main formulation of poultry meat with no other ingredients	1511512395	ton
Types of poultry sausages and lunch meat with other ingredients as the main ingredients of the formulation	1511512396	ton
Sausages and lunch meat with red meat	1511412397	ton
Types of sausages and lunch meat with original red meat formulation, with no other ingredients	1511512398	ton
Varieties of sausages and sausages with red meat along with other ingredients as the main ingredients of the formulation	1511512399	ton
Burgers, kebabs and similar products of ground red meats	1511512403	ton

Source: organization of Industry, mine and trade

## 1.2. Customs tariff code

Based on the export and import regulation of Islamic republic of Iran the custom tariff for the Sausage and Burger is as follows:

<b>Heading subheading No.</b>	<b>Description</b>
1610000	Sausages and similar products, of meat, meat offal or blood; food preparations based on these products.

Source : export-import regulations (2020)

## 1.3. Import and export products conditions

Given the conditions for product import and export in Islamic republic of Iran, conditions and tariffs for import and export of the Sausage and Burger is as follows:

<b>Heading Subheading No.</b>	<b>Description</b>	<b>SUQ</b>	<b>Import duty</b>
1610000	Sausages and similar products, of meat, meat offal or blood; food preparations based on these products.	kg	40

Source : export-import regulations (2020)

Import terms:

-Import is prohibited.

#### 1.4. Review and presentation of standard (national or international)

##### - national Standard

<i>Number</i>	<i>Title</i>	<i>Country</i>
INSO2303 Amd. No. 2 2017	Sausages-Specifications and test methods (Amd. No. 2)	Iran
INSO2303: 2006	Sausages-specifications and test methods	Iran
INSO2304:2016	Raw frozen hamburger - Specifications and test methods	Iran

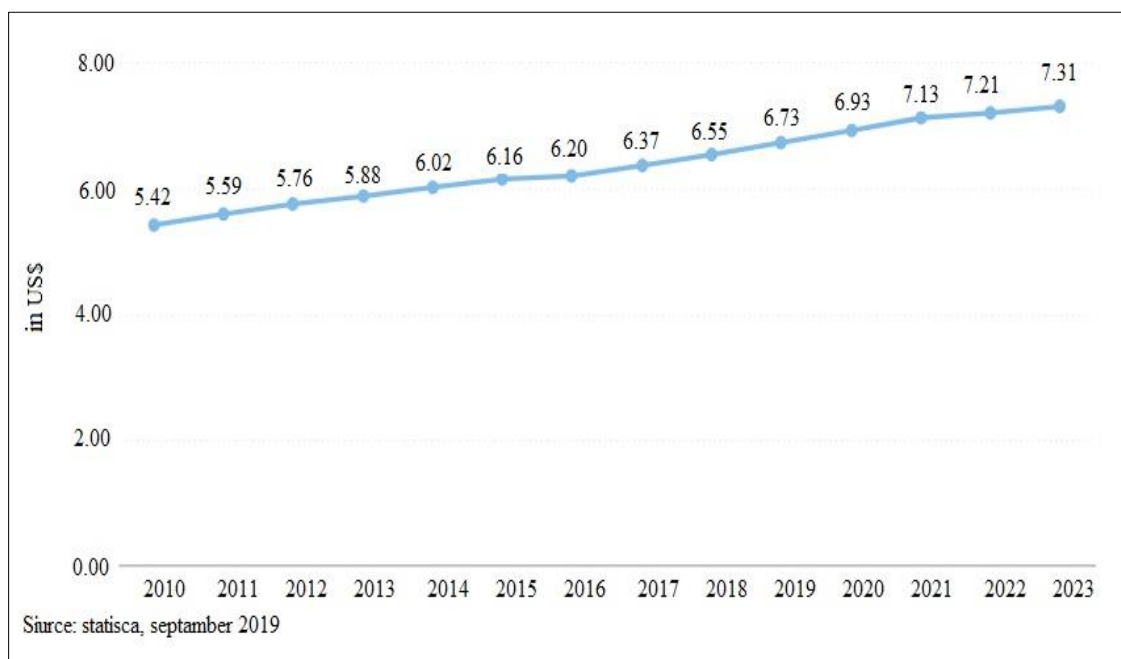
Source: Institute of Standards and Industrial Research of Iran

- Sausage products are subject to mandatory standard 2303.

#### 1.5. Review and provide information about domestic production prices and global price of the product

Domestic prices of sausages, lunch meat and hamburgers are vary depending on the percentage of meat and its ingredients. The following table lists the prices of different types of products. Its global price is about \$ 6.73 per kilogram.

Global Price Changes of Sausage and lunch meat in 2010-2023 (USD / kg)



### **Domestic prices of sausages, lunch meat and burgers**

<b>Type of meat product</b>	<b>Rials</b>	<b>Euro</b>
Pepperoni lunch meat 80%	1.150,000	4.45
Mushroom and chicken lunch meat 60%	550,000	2.13
Cocktail sausage 80%	1,050,000	4.0
Premium cocktail 70% meat and chicken	950,000	3.68
Chicken Ham 90%	580,000	2.24
meat hamburgers 60%	850,000	3.29
meat hamburgers 90%	1,200,000	4.65

### **1.6. Explaining the usage and application of the product in the domestic and foreign markets**

Considering the raw materials used in sausage and lunch meat production, these products have high nutrient value. It can be considered a high quality sausage and lunch meat are complete food as it contains almost all the essential nutrients including protein, fat, carbohydrates, vitamins and minerals.

Currently, per capita consumption of sausages, lunch meats and hamburgers in Europe is 64; the US is 60 and in Iran 8.5 kg per year. Due to the young population of the country, increasing the employment of women and the speed and ease of preparation of these products, their consumption in the Iranian table is increasing.

### **1.7. Evaluation of alternative products, competitors and analysis and its effects on consumption of the product**

Types of Animal, Poultry and Aquatic Proteins are the most important substitutes for meat products such as sausages and lunch meats and hamburgers. But sausages, lunch meats and burgers have a significant share of their protein intake due to their cheaper, faster and easier cooking and tasty taste, so they have an increasing consumption.

Due to the high price of red meat, meat products can be a good substitute especially for the low-income strata and are also one of the favorite foods of young people.

### **1.8. The strategic importance of the product in Iran and foreign markets**

Due to changing lifestyle and occupation, the pattern of food consumption in the world has been changed and the tendency to consume fast foods has been increased. Sausages and lunch meats as the oldest and most consumed ready-made foods have a special place in the food basket of consumers worldwide. In our country, meat industry is one of the most important branches of food industry, especially in recent years.

The remarkable progress made in the production of this food stuff has led to the presence of the industry in the prospect of the country's sixth economic development plan. The meat industry is expected to become one of the country's major non-oil export commodities in the coming decade.

In general, the production has grown substantially in recent years, but in terms of exports, we are still young. The Sixth Economic Development Plan of the country is projected to produce 1 million tonnes of meat products per year by 1400, and exports of meat products will increase to 20,000 tonnes per year.

### **1.9. The major producing countries and product consumer**

The United States was the world's largest producer of sausages and lunch meats, with revenues of about \$ 22,723 million in 2019. China, Germany, Russia and France are respectively behind the US.

The 5 top sausage producing countries in the world– Revenue (in million US\$)

United States	22,723m US\$
China	12,474m US\$
Germany	12,234m US\$
Russia	10,920m US\$
France	4,489m US\$

In 2019, it was Germany's largest exporter and Britain's largest importer.

Turkey, France, Brazil, Germany and Russia are Iran's most important export competitors.

## **2. Situation of supply and demand in Iran and foreign markets**

### **2.1. Study of utilization capacity and production process since the beginning of the Sixth Five Year Economic Development Plan, unit location, the number and level of technology of available units, nominal capacity, practical capacity, lack of full capacity utilization reasons, the name of country and manufacturer of machinery used in production**

According to the information obtained from the organization of Industry, Mine and Trade as well as the Association of Meat Producers of Iran, the number and production of sausage and lunch meat and hamburger production units are as follows:

According to statistics from the organization of Industry, Mine and Trade and the Iranian Meat Products Association, about 5,000 tons of meat products are produced annually. Currently per capita consumption of these products is about 8.5 kg per person.

At present, the quality of the country's products is like the same European quality because of the standard organization has set stricter standards for these products.

The reason for the lack of full capacity utilization has been the increase in meat prices and increased production costs.

Of licensed operation in the field of sausage and lunch meat and hamburger products

No.	Province	Number of units	Capacity (tons)	investment	
				Million Rials	Million EUR
1	Ardabil	5	4,500	210,931	0
2	Isfahan	15	49,160	1,598,172	0
3	Alborz	22	28,749	2,003,512	1
4	Ilam	2	1,200	10,957	0
5	East Azerbaijan	13	19,885	490,826	0
6	West Azerbaijan	5	10,560	104,970	0
7	Bushehr	5	6,500	116,226	0
8	Tehran	61	207,093	7,117,299	0.203
9	Chahar Mahaal and Bakhtiari	2	4,200	8,705	0
10	Khorasan, South	1	200	12,500	0
11	Khorasan, Razavi	13	15,470	475,155	0
12	Khuzestan	11	26,490	268,793	0
13	Zanjan	4	6,020	79,000	0
14	Semnan	3	900	66,063	0
15	Sistan and Baluchestan	5	4,960	152,919	0
16	Fars	35	151,135	2,589,923	0.0000
17	Qazvin	6	13,250	188,423	0
18	Qom	18	83,166	512,646	0
19	Kerman	4	6,195	22,434	0
20	Kermanshah	10	15,635	76,243	0
21	Kohgiluyeh and Boyer-Ahmad	2	10,400	140,595	0
22	Golestan	2	7,200	55,576	0
23	Gilan	12	112,725	1,009,420	11000
24	Mazandaran	21	77,847	1,044,176	2304
25	Markazi	7	18,330	1,113,798	700
26	Hamadan	4	19,070	295,000	0
27	Yazd	2	650	27,600	0
<i>nominal Total capacity</i>		290	901,490	173.6 Million EUR	
<i>Practical capacity (55%)</i>		159	507,411		

Source: organization of Industry, Mine and Trade

## 2.2. Study of the status of new projects and under construction development projects (In terms of number, capacity, operation place, the physical progress rate and the level of their technology and investments by both foreign exchange and other required) and semi-finished projects

Based on information from the organization of Industry, Mine and Trade, the sausage and lunch meats, hamburger units under construction and their production levels are presented in the table below. In Khuzestan province, there are 1 construction unit with a nominal capacity of 4000 tons.

Under Construction Units of sausage and lunch meat and hamburger products with 60-99% of physical progress

No.	Province	Number of units	Capacity (tons)	investment	
				Million Rials	Million EUR
1	Ardabil	1	50	2,499	0
2	Isfahan	2	800	9,180	0
3	Alborz	3	7600	378,601	0.417
4	East Azerbaijan	3	2550	112,700	0
5	Tehran	4	6785	1,334,244	0
6	Khorasan, Razavi	1	4500	216,939	0
7	Sistan and Baluchestan	2	1600	27,000	0
8	Fars	2	29000	430,000	0
9	Qom	2	3900	67,000	0
10	Kermanshah	1	500	16,300	0
11	Gilan	1	300	28,600	0
12	Mazandaran	1	24500	1,511,357	6.052
nominal Total capacity		23	82085	18.14 Million EUR	

Source: organization of Industry, Mine and Trade



Under Construction Units of sausage and lunch meat and hamburger products with 20-59% of physical progress

No.	Province	Number of units	Capacity (tons)	investment	
				Million Rials	Million EUR
1	Alborz	2	5,000	44,300	0
2	East Azerbaijan	2	3,000	55,000	0.132
3	Tehran	10	36,850	786,779	1.152
4	Chahar Mahaal and Bakhtiari	2	6,300	161,522	0
5	Khorasan, Razavi	1	3,600	119,775	0
6	Khuzestan	1	4,000	6,100	0
7	Fars	3	1,550	277,500	4.830
8	Qazvin	1	700	29,500	0
9	Kordestan	1	800	53,463	0
10	Gilan	2	1,000	60,968	0
11	Mazandaran	4	10,750	165,346	0
nominal Total capacity		29	73,550	20.19 Million EUR	

Source: organization of Industry, Mine and Trade

### 2.3. The trend of imports of the product in the last five years

According to the statistics published by the Customs Administration of the Islamic Republic of Iran, it was determined that the import of sausages, lunch meat and hamburgers was not carried out and that the production was in line with the country's current needs.

### 2.4. The trend of consumption in the last five years

One of the common methods of calculating the amount of internal consumption is to estimate the amount of apparent consumption, which is calculated in the following table.

The average consumption of sausages, lunch meats and hamburgers over the past five years has grown 1.55 times. In recent years, per capita consumption has grown from 5.5 kg per person to 8.5 kg at present.

Estimating apparent consumption of sausage and lunch meat and hamburger products in the country over the past 5 years (2014-2019)

	2014-2015	2015-2016	2016-2017	2014-2015	2015-2016	2019-2020
Domestic production (tons)	330,344	380,705	407,000	443,756	501,944	507,411
Imports (tons)	0.0	0.0	0.0	0.0	0.0	0.0
Export (tons)	4,646.5	4,109.9	3,940.9	2,409.8	2,234.9	2,234.9
The apparent consumption	325,698	376,595	403,059	441,346	499,709	505,176

## 2.5. The trend of export product in the last five years and the possibility of its development

By studying the customs statistics of the Islamic Republic of Iran on the export of sausages, lunch meats and hamburgers, it was found that exports decreased by half from 2014 to 2019 and has been reached from 4646 tons in 2014 to 2234 tons in 2019.

The major export markets for these products are Iraq and Afghanistan, with a share of about 67% and 30%, respectively. Iraq is the main trading partner and the main target market so that Khuzestan province is able to expand its exports due to its proximity to the border and access to land and sea routes. Exports of sausages and lunch meats to Iraq were about 1,500 tons worth \$ 2.3 million in the year 2019.

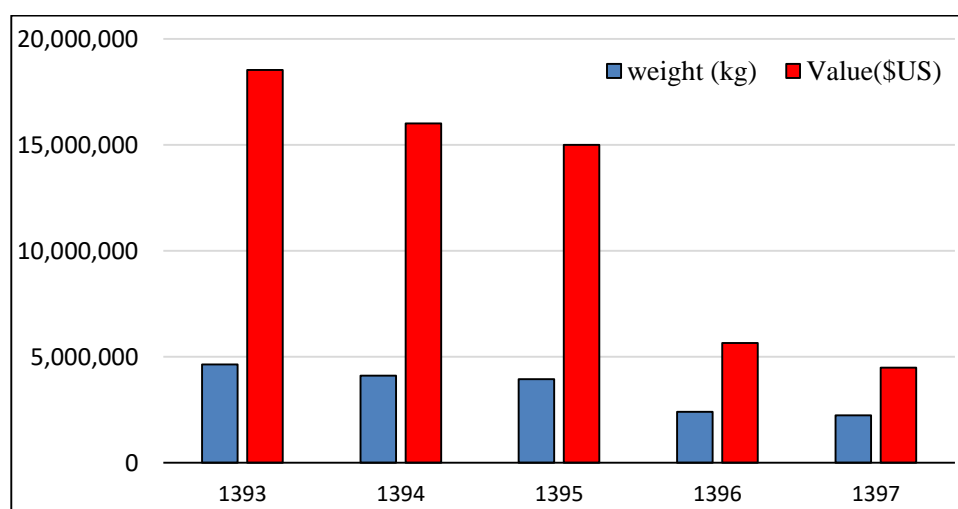
The Sixth Economic Development Plan foresees that domestic production will reach one million tonnes of meat products per year by 1400 and exports of meat products will increase to 20,000 tonnes per year.

Exports of sausage and lunch meat and hamburger products in the last 5 years

year	Weight (Kg)	Rail's value	Dollar value	Description
2018-19	2,234,872	297,896,935,169	4,491,035	67.2% Iraq- 30.94% Afghanistan
2017-18	2,409,846	192,787,525,721	5,646,326	71.43% Iraq- 24.93% Afghanistan
2016-17	3,940,960	468,461,833,812	15,001,764	
2015-16	4,109,909	470,368,037,473	16,002,076	
2014-15	4,646,514	493,320,752,307	18,535,672	

Source :The Islamic Republic of Iran Customs Administration (2020)

The chart of exported of sausage and lunch meat and hamburger products in the last 5 years



Exports of sausage and lunch meat and hamburger products divided by country in 2018-2019

counterparty country	Weight (KG)	Rail's value	Dollar value	Weight ratio (Wt%)
Afghanistan	691,370	142,224,490,448	1,997,996	30.94
United Arab Emirates	28,622	7,351,945,321	115,959	1.28
Bahrain	2,665	934,930,616	12,035	0.12
Iraq	1,501,754	144,441,391,596	2,319,484	67.20
Qatar	4,200	1,440,251,280	15,795	0.19
Lebanon	2,676	670,134,420	15,842	0.12
Malaysia	3,585	833,791,488	13,924	0.16
<b>Total</b>	<b>2,234,872</b>	<b>297,896,935,169</b>	<b>4,491,035</b>	<b>100</b>

Source: Islamic Republic of Iran Customs Administration (2020)

Exports of sausage and lunch meat and hamburger products divided by country in 2017-2018

counterparty country	Weight (kg)	Rail's value	Dollar value	Weight ratio (Wt%)
Afghanistan	600,707	66,975,550,932	1,967,036	24.93
United Arab Emirates	51,526	6,393,345,020	188,353	2.14
Syria	470	2,167,955	65	0.02
Iraq	1,721,431	114,895,240,223	3,358,495	71.43
Qatar	26,727	3,154,871,443	92,390	1.11
Kuwait	75	11,965,932	369	0.00
Lebanon	6,530	974,463,342	28,354	0.27
Malaysia	2,380	379,920,874	11,264	0.10
<b>total</b>	<b>2,409,846</b>	<b>192,787,525,721</b>	<b>5,646,326</b>	<b>100.00</b>

Source: Islamic Republic of Iran Customs Administration (2020)

## 1.6. Reviewing of products needs based on export priority

As mentioned in the previous sections, per capita consumption of meat products has increased from 5.5 to 8.5 kg per person over the last five years, and this trend is increasing. The main reasons for the increased consumption of meat products as follow as:

- Raising the price of red meat and poultry by two times and replacing it with meat products by low- and middle-income families
- Delicious flavors and widespread advertising of fast foods and the desire of young people and other segments of society to use these products
- Employment and lack of time

On the other hand, the Sixth Five-Year Economic Development Planning Law of the country aims to increase production to one million tons and increase exports to 20,000 tons by 1400.

To assess product demand in the future, domestic demand is calculated at 9.5 kg per person and exported and compared with domestic production capacity

Estimation of domestic consumption of sausages, lunch meats and burgers per capita over the next 5 years

Year	Population (person)	Consumption rate (Kg)
<b>2020-2021</b>	83,854,900	796,621,550
<b>2021-2022</b>	84,718,605	804,826,752
<b>2022-2023</b>	85,591,207	813,116,468
<b>2023-2024</b>	86,472,797	821,491,567
<b>2024-2025</b>	87,363,466	829,952,930

Estimates of product demand over the next 5 years

Production	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
The domestic consumption (tons)	796,621	804,826	813,116	821,491	829,952
Export (tons)	5,000	7,100	10,082	14,216	20,000
<b>Total demand (tons)</b>	<b>801,621</b>	<b>811,926</b>	<b>823,198</b>	<b>835,707</b>	<b>849,952</b>
Output of current units (tons)	540,894	585,969	631,043	676,118	676,118
Production of new operational units (tons)	22,821	78,508	90,959	103,410	115,861
<b>Total supply (tons)</b>	<b>791,979</b>	<b>664,477</b>	<b>722,002</b>	<b>779,528</b>	<b>791,979</b>
(Shortage) / surplus	(237,906)	(147,449)	(101,196)	(56,179)	(57,973)

As it can be seen in the 5 years we will be faced with a shortage of about 57973 tonnes, so we will have to be expanded or building new units or importing products to eliminate this shortage.

Khuzestan Province, with a population of 4.7 million (the fifth most populous in the country) and often young has not active meat products units like sausages, lunch meats and hamburgers despite having great capabilities in accessing domestic and foreign raw materials and domestic and foreign target markets. Therefore, it is necessary to activate stagnant units under construction.

It should be noted that Khuzestan province, due to its common land and water border with the Persian Gulf countries, as well as religious and cultural affiliations, especially with Iraq and the importance of Islamic slaughter of livestock for the preparation of halal meat products for these Islamic countries, It is in a very favorable position for exporting this product.

### **3- Overview of technology and production methods and product supply in the country and compare it with other countries**

The most advanced sausage and lunch meat production lines are European and belong to Germany and Italy. The domestic production machinery also complies with the German machine standards which is no different from the foreign one in terms of quality production.

#### **Hamburger Production Line:**

The hamburger ingredients are meat, soy, peppers, oil, onions, spices and salt. These materials are thrown together in a mixing machine which mixes the materials first and then spins.

After grinding, the material is transferred to the molding machine. Each machine forms four rows of five hamburgers every time. The workers then put the hamburger wrap on it and put the hamburgers on the pallet and transferred them to the fridge for 24 hours at -24 ° C to freeze.

They then pack the hamburgers. They then put some hamburger packs into the carton and wrap it around plastic. This plastic both prevents the cartons from getting wet and tightens the boxes. These hamburger boxes are kept in the fridge until unloaded. Hamburgers are divided into three categories: regular, special, and premium based on formulation and meat percentage.

- Normal hamburgers containing 30% meat
- Special Hamburger 60% Meat
- Premium burgers with more than 70% meat

#### **Sausage & lunch meat Production Line:**

Raw materials such as meat, poultry, garlic, onions and dry matter such as flour, starch, sodium phosphate, milk powder, spices are used in sausage and lunch meats production. These materials are measured by formulation and poured into the cutting machine. Temperature is very important in sausage and lunch meats production and should be controlled at every step. At the beginning of production, after the material has been poured into the cutting machine due to the machine working and shaken the material, the temperature rises and the dough loosens and reduces the quality of the product. To overcome this problem, they add pieces of ice to the formulation along with the materials they bring into the machine. This will lower the temperature and tighten the dough. Required ice is provided by a cylinder in which cold air flows. This means that water enters the system from above and freezes inside the cylinder due to exposure to cold air.

Sodium nitrite is used in sausage and lunch meat production. In addition to coloring the product, it also prevents the growth of bacteria. But it is carcinogenic and can turn into nitrosamines in the body. For reducing agent, Ascorbic acid is used to prevent this chemical conversion. These chemicals are added to the product as specified by the standard office.

After all the required material has been poured into the cutting machine, the machine turns it into a uniform dough over several stages. For example, at first the wet material and ice are entering to the machine, The machine cuts and mixes them and then dry materials and again with ice added to the machine, the machine mixes and produces a uniform dough.

After the dough is prepared, they are inserted into the filling machine. This machine puts the produced dough into sausage and lunch meat plastics and gives it a special shape. They are then hung on special containers and put into the baking room.

The temperature in the baking room is 80 degrees. Products should stay in the baking room for a long time depending on their diameter. The sausage lasts less in the baking room (about an hour and a half) because of its smaller diameter than the lunch meat and the lunch meat takes longer (3 to 5 hours).

After baking time, they are cooled to ambient temperature and after insertion date and expiry date transferred to the refrigerator above zero. At this stage, various physical, chemical and microbial tests are performed on the product to verify the health of the product.

Hamburgers are less microbial tests because they are raw and cooked when consumed. But sausages and lunch meats have more microbial tests on them because they may be used raw.

#### **4. Determine the strengths and weaknesses of known technologies (in outline) in the production process**

##### **Advantages:**

1. High quality of products due to the necessity of strict standards
2. Digital control of devices
3. Low power consumption
4. The amount of sodium nitrite used in the country's manufacturing industries is much lower than the world standard. The level of nitrite use in Europe is 200 ppm and in our country is about 100 to 120 ppm, Nutritive sausage and lunch meats levels are half of European countries or even Turkey. Adding nitrate to sausages and lunch meats is a carcinogenic processed meat that can be dangerous if used indefinitely because it turns into "nitrosamide" in the stomach.

##### **Disadvantages:**

1. Prohibition of the use of chicken dough in production
2. When separating poultry and chicken thighs, 10% of the meat typically adheres to the skeleton, which The developed countries have been able to completely separate the bone from meat using separator devices.



**5. Determine the minimum economic capacity includes the estimated volume of fixed investment estimated volume with the separation of Rials and foreign exchange (Using information of available and under construction units, UNIDO, internet, the global data banks, technology selling companies and equipment, etc.)**

Considering the need of the domestic market especially Khuzestan province and taking into annual Nominal capacity exports of project is:

- Sausages: 1500 tons
- lunch meat: 1500 tons
- Hamburgers: 1500 tons

The practical capacity of the project is estimated to be around 60% of the nominal capacity, given the need for high liquidity to supply meat and other factors.

- Sausages: 900 tons
- lunch meat: 900 tons
- Hamburgers: 900 tons

The estimated time required to supply equipment and raw materials is 4 months. The product is expected to be produced in 300 working days and one shift per day.

**Plan production and sales over the next 4 years**

Years of operation		first year	second year	third year	forth year
Percentage of capacity		70	80	90	100
lunch meat 80%		93.0	160.0	180.0	200.0
chicken lunch meat 70%		327.0	560.0	630.0	700.0
sausage 40%		420.0	720.0	810.0	900.0
meat hamburgers 60%		420.0	720.0	810.0	900.0
<b>Total production</b>		<b>1,260.0</b>	<b>2,160.0</b>	<b>2,430.0</b>	<b>2,700.0</b>
<b>The outcome of selling</b>					
lunch meat 80%		93,000.0	160,000.0	180,000.0	200,000.0
chicken lunch meat 70%		120,990.0	207,200.0	233,100.0	259,000.0
sausage 40%		247,800.0	424,800.0	477,900.0	531,000.0
meat hamburgers 60%		336,000.0	576,000.0	648,000.0	720,000.0
<b>Total sales</b>	<b>million Rials</b>	<b>797,790.0</b>	<b>1,368,000.0</b>	<b>1,539,000.0</b>	<b>1,710,000.0</b>
	<b>Million Euro</b>	<b>3.09</b>	<b>5.30</b>	<b>5.97</b>	<b>6.63</b>

**Table of Project Investment**

Description	incurred Costs (million Rails)	required Costs				Total	
		The Foreign currency		Local Currency	Total (Million Rails)	Million Rails	Equivalent in Million Euro
		Million Euro	Equivalent Rails (Million Rails)	Million Rails			
land	8,549.3	0	0	0.00	0.00	8,549.3	0.033
landscaping	5,320.0	0	0	0.00	0.00	5,320.0	0.021
Construction	40,650.0	0	0	0.00	0.00	40,650.0	0.158
utilities	13,470.0	0	0	0.00	0.00	13,470.0	0.043
Equipment& Machinery	39,741.0	0	0	19,000.00	19,000.00	58,741.00	0.228
laboratory equipment	1,000.0	0	0	0.00	0.00	1,000.00	0.004
transportation	0.0	0	0	0.00	0.00	0.00	0
Office Equipment & Supplies	800.0	0	0	0.00	0.00	800.00	0.003
Other and unpredicted	0.0	0	0	1,900.00	1,900.00	1,900.00	0.007
<b>total</b>	<b>109,530.3</b>	<b>0</b>	<b>0</b>	<b>20,900.00</b>	<b>20,900.00</b>	<b>130,430.3</b>	<b>0.506</b>
<b>Pre-Production expenditures</b>	<b>500.0</b>	<b>0</b>	<b>0</b>	<b>1,000.00</b>	<b>1,000.00</b>	<b>1,500.00</b>	<b>0.006</b>
<b>Total of fixed Capital</b>	<b>110,030.3</b>	<b>0</b>	<b>0</b>	<b>21,900.00</b>	<b>21,900.00</b>	<b>131,930.3</b>	<b>0.511</b>
<b>Working capital</b>	<b>0.0</b>	<b>0</b>	<b>0</b>	<b>217,927.38</b>	<b>217,927.38</b>	<b>217,927.38</b>	<b>0.845</b>
<b>Total Investment</b>	<b>110,030.3</b>	<b>0</b>	<b>0</b>	<b>239,727.38</b>	<b>239,727.38</b>	<b>349,857.63</b>	<b>1.356</b>

Exchange rate:

1 Euro  $\cong$  258,000 Rails

1 US\$  $\cong$  217,000 Rails

land specification of project as follows as:

Description	Area(m <sup>2</sup> )		Cost (million Rails)			Equivalent in Euro
	done	required	done	required	Total	
land	5699.5	0.0	8549.25	0.0	8549.25	33,136.6

landscaping price as follows as:

Description	Area(m <sup>2</sup> )		Cost (million Rails)			Equivalent in Euro
	done	required	done	required	Total	
Excavation and leveling	5000 m <sup>3</sup>	0.0	1000.0	0.0	1000.0	3,876.0
Wall of bricks (2.5 meters high)	300 m	0.0	3,600.0	0.0	3,600.0	13,953.5
Green space and lighting	600 m <sup>2</sup>	0.0	720.0	0.0	720.0	2,790.7
<b>total</b>			5,320.0	0.0	5,320.0	20,620.2

### Construction items Information:

Description	Building Type	Square meters area		Total cost (million Rails)			Equivalent in Euro
		Done	Required	Done	Required	Total	
Sausage and lunch meat salon - with refrigerator	Industrial shed - Tiling up to the ceiling - Ceramic floor - Dimensions 30 * 15 m	450	, , ,	13,500	, , ,	13,500	3,483.0
Hamburger Production salon- Freezing under zero and above zero as well as freezing tunnel	Industrial shed - Tiling up to the ceiling - Ceramic floor - Dimensions 25 * 30 m	325	, , ,	9,750	, , ,	9,750	2,515.5
Warehouse for dry materials	Half floor upstairs of shed	20	, , ,	600	, , ,	600	154.8
Administrative buildings and welfare building	Exterior design of stone, two floors	500	, , ,	14,000	, , ,	14,000	3,612.0
Lab	Half floor upstairs of shed	60	, , ,	1,800	, , ,	1,800	464.4
electronic room	Made of bricks	20	, , ,	400	, , ,	400	103.2
Gate guard	Made of bricks,	30	, , ,	600	, , ,	600	154.8
<b>Total infrastructure and costs</b>		<b>1405</b>	<b>, , ,</b>	<b>40,650.0</b>	<b>, , ,</b>	<b>40,650.0</b>	<b>10,487.7</b>

**the view of the factory**







**Administrative buildings**





**Utilities:**

Description	Technical Specifications	Required costs (million Rail's)			Equivalent in Euro
		Done	Required	Total	
Electrification	Electric supply and power 250 KW	5,000.0	0.0	5,000.0	19,379.84
Water	Split 1 "and water supply	600.0	0.0	600.0	2,325.58
Gas	Split and piping	600.0	0.0	600.0	2,325.58
Telecommunications	5 line	50.0	0.0	50.0	193.80
Freezing under zero	180m <sup>3</sup>	1,500.0	0.0	1,500.0	5,813.95
Freezing above zero	100m <sup>3</sup>	1,200.0	0.0	1,200.0	4,651.16
freezing tunnel	Motor: bitzer , codensor: 30hp 60hp evaporator	4,000.0	0.0	4,000.0	15,503.88
Heating & Cooling	Air conditioning unit and Water Cooler 5 unit	250.0	0.0	250.0	968.99
Fire Extinguishing capsules	6 unit	100.0	0.0	100.0	387.60
Water tank	5000 lit	70.0	0.0	70.0	271.32
Fuel tank	20000 lit	100.0	0.0	100.0	387.60
<b>Total</b>		<b>13,470.0</b>	<b>0.0</b>	<b>13,470.0</b>	<b>52,209.30</b>

### Equipment& Machinery product line:

Description	Qty		The foreign currency (EUR)		Equivalent Rails (million Rails)	Local Currency (million Rails)		Total costs (million Rails)	Equivalent in Euro
	Done	Required	Done	Required		Done	Required		
325-liter cutting machine with capacity of 1200 kg / h with full automatic panel	1	1	0	0	0	7,410.0	10,000.0	17,410.0	67,480.62
Full steel Vacuum Filler Capacity 1000 kg / h Sausage and 2000 kg /h lunch meat	1	1	0	0	0	3,250.0	9,000.0	12,250.0	47,480.62
Hamburger mold press capacity of 2000 kg per hour	1	0	0	0	0	2,600.0	0	2,600.0	10,077.52
Full steel sausage macker with capacity of 300 pcs	1	0	0	0	0	1,170.0	0	1,170.0	4,534.88
Meat grinder 50hp with full steel knives with capacity of 2000 to 4500 kg / h	1	0	0	0	0	4,550.0	0	4,550.0	17,635.66
Meat Grinder	1	0	0	0	0	910.0	0	910.0	3,527.13
ice maker	1	0	0	0	0	1950.0	0	1950.0	7,558.14
mixer	1		0	0	0	1,170.0	0	1,170.0	4,534.88
weighing scale 500kg	6	0	0	0	0	325.0	0	325.0	1,259.69
Trolley	10		0	0	0	780.0	0	780.0	3,023.26
Product shipping wheel	10	0	0	0	0	130.0	0	130.0	503.88
Wheels and trays for carrying hamburgers	10		0	0	0	156.0	0	156.0	604.65
Hamburger Packing Machine	1	0	0	0	0	1,300.0	0	1,300.0	5,038.76
Lima France ( Meat bone separator of chickens)	1		0	0	0	2,080.0	0	2,080.0	8,062.02
Steam boiler 4400lb	1	0	0	0	0	4,550.0	0	4,550.0	17,635.66
Full-steel double-walled three-wheel cooking chamber with pneumatic valves and automatic control	3	0	0	0	0	5,850.0	0	5,850.0	22,674.42
Date machine	2	0	0	0	0	1,560.0	0	1,560.00	6,046.51
Total	52	0	0	0	0	39,741.0	19,000.0	58,741.0	227,678.29





## laboratory equipment

Description	Qty		The foreign currency (EUR)		Equivalent Rails (million Rails)	Local Currency (million Rails)		Total costs (million Rails)	Equivalent in Euro
	Done	Required	Done	Required		Done	Required		
Incubators, furnaces, scales and other equipment	1	0	0	0	0	1000	0.0	1000.0	3876.0
Total	1	0	0	0	0	1000	0.0	1000.0	3876.0





## Transportation

Description	Qty		The foreign currency (EUR)		Equivalent Rails (million Rails)	Local Currency (million Rails)		Total costs (million Rails)	Equivalent in Euro
	Done	Required	Done	Required		Done	Required		
-	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## Office Equipment & Supplies and Services:

Description	Qty		The foreign currency (EUR)		Equivalent Rails (million Rails)	Local Currency (million Rails)		Total costs (million Rails)	Equivalent in Euro
	Done	Required	Done	Required		Done	Required		
Office Equipment	1	0	0	0	0	800.0	0.0	800.0	3,100.0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>800.0</b>	<b>0.0</b>	<b>800.0</b>	<b>3,100.0</b>

## Working capital:

Description	duration	The foreign currency		Local Currency	Total (Million Rails)	Equivalent in Million Euro
		Million Euro	Equivalent Rails (Million Rails)	Million Rails		
Supplementary Raw Material and Packaging	1 Month	0	0	100,847.00	100,847.00	0.391
Cash in hand	1 Month	0	0	7,220.03	7,220.03	0.028
Account receivable	1 Month	0	0	109,860.35	109,860.35	0.426
<b>total</b>		<b>0</b>	<b>0</b>	<b>217,927.38</b>	<b>217,927.38</b>	<b>0.845</b>



**Production costs:**

Description	Amount ( Million Rials)	Equivalent in (Million Euro)
Costs of materials	1,210,164.00	4.691
Cost of production personnel salary	15,170.00	0.059
Cost of utilities (fuel and electricity, water ...)	4,419.80	0.017
Cost of repair and maintenance	4,849.95	0.019
cost of unforeseen production(5%)	61,730.00	0.239
Depreciation expense	9,464.00	0.037
Administrative personnel salary	4,280.40	0.017
Costs of administrative and sales	17,100.00	0.066
Factory insurance	610.00	0.002
<b>Total sum</b>	<b>1,327,788.15</b>	<b>5.164</b>

**6-The annual major required raw materials and annual and to supply outside or inside the country, domestic and foreign exchange and checking the major developments in the supply of essential required items in the past and future**

- Meat: Meat makes up a large percentage of this product. Due to the great variety of sausages and lunch meats, different red and white meats are used to produce these products. The meat is manufactured under the supervision of the Veterinary Production Network and used by meat establishments in accordance with hygiene standards.
- Fat and oil: In addition to the fat in the meat texture, also vegetable oils is using to improve the taste, create crispness, improve cutting ability and not dry the texture of the product.
- Carbohydrates: These include soy flour, starch and wheat flour which are added to improve texture, increase volume and uniformity of sausages and lunch meats.
- Sweeteners: Sweeteners used in some sausages and lunch meats are sucrose or sugar which is added to modify the flavor and increase the sweetness and softness of the product.
- .Vitamin C (Ascorbic Acid): It is added to stabilizing color, increasing shelf life and reducing the production process time. In addition, it acts as an antioxidant to prevent chemical changes in the product.
- Sodium nitrite: This substance is used to stabilize the color of meat and preserve it to prevent the growth of bacteria, thus stabilize the taste of sausages and lunch meats.
- Spices: According to the formula of sausage and lunch meats, various spices are used to create the desired flavor.
- Water: The water is added in order to provide crispy products, Maintaining product moisture as well as good smelling. Coatings: Coatings for sausage and lunch meats packaging come in two types of natural and artificial. Natural coatings are made from cow's and sheep's intestines and synthetic coatings are made of cellulose, plastic and collagen.

Much of the meat needed for the sausage and lunch meats producers comes from Brazil and India and the rest comes from domestic slaughterhouses. The price of meat has been increased 100% over the past five years.

### Required Raw materials:

NO.	Description	Consumption per product unit	Unit Consumption	The amount required for all capacity	Price of unit million ) (Rails	Currency prices		Cost (million Rails)	Supplying Place	Total cost (million Rail's)	Equivalent in Million Euro
						The currency (million dollar)	Equivalent Rails million ) (Rails				
lunch meat 80%: 200 ton											
1	Red meat with 20% fat	0.8	ton	160	820.0	0	0	131,200.0	Domestic foreign	131,200.0	0.509
2	vegetable oils	0.03	ton	6	110.0	0	0	660.0	Domestic	660.0	0.003
3	gluten	0.02	ton	4	140.0	0	0	560.0	Domestic	560.0	0.002
4	milk powder	0.02	ton	4	320.0	0	0	1,280.0	Domestic	1,280.0	0.005
5	starch	0.02	ton	4	39.0	0	0	156.0	Domestic	156.0	0.001
6	Spices:	0.02	ton	4	560.0	0	0	2,240.0	Domestic	2,240.0	0.009
7	casein	0.015	ton	3	1,400.0	0	0	4,200.0	Domestic	4,200.0	0.016
8	Garlic	0.01	ton	2	40.0	0	0	80.0	Domestic	80.0	0.00031
9	Salt	0.01	ton	2	10.0	0	0	20.0	Domestic	20.0	0.00008
10	sodium polyphosphate	4	kg	800	0.26	0	0	208.0	Domestic	208.0	0.001
11	ascorbic Acid	0.2	kg	40	2	0	0	80.0	Domestic	80.0	0.00031
12	Sodium nitrite	0.1	kg	20	0.45	0	0	9.0	Domestic	9.0	0.00003
13	plastic coatings	0.125	kilometer	25	60.0	0	0	1500.0	Domestic	1500.0	0.006
14	Carton	40	pcs	8000	0.12	0	0	960.0	Domestic	960.0	0.004
sum								143,153.0		143,153.0	0.555
chicken lunch meat 70%: 700 ton											
1	Industrial poultry meat	0.8	ton	560.00	199	0	0	111,440	Domestic	111,440	0.432
2	casein	0.02	ton	14.00	1400	0	0	19,600	Domestic	19,600	0.076
3	gluten	0.03	ton	21.00	140	0	0	2,940	Domestic	2,940	0.011
4	milk powder	0.02	ton	14.00	320	0	0	4,480	Domestic	4,480	0.017
5	starch	0.03	ton	21.00	39	0	0	819	Domestic	819	0.003
6	Spices	0.02	ton	14.00	560	0	0	7,840	Domestic	7,840	0.030
7	vegetable oils	0.01	ton	7.00	110	0	0	770	Domestic	770	0.003
8	Garlic	0.01	ton	7.00	40	0	0	280	Domestic	280	0.001
9	Salt	0.01	ton	7.00	10	0	0	70	Domestic	70	0.0003
10	sodium polyphosphate	4	kg	2800.00	0.26	0	0	728	Domestic	728	0.003
11	ascorbic Acid	0.2	kg	140.00	2	0	0	280	Domestic	280	0.001
12	Sodium nitrite	0.1	kg	70.00	0.45	0	0	31.5	Domestic	31.5	0.00021
13	plastic coatings	0.125	kilometer	87.50	60	0	0	5,250.0	Domestic	5,250.0	0.020
14	Carton	40	pcs	28000.00	0.12	0	0	3,360	Domestic	3,360	0.013
sum						0	0	157,888.5		157,888.5	0.612

NO.	Description	Consumption per product unit	Unit Consumption	The amount required for all capacity	Price of unit million ) (Rails	Currency prices		Cost (million Rails)	Supplying Place	Total cost (million Rail's)	Equivalent in Million Euro
						The currency (million dollar)	Equivalent Rails million ) (Rails				
sausage 40%: 900 ton											
1	Red meat &Industrial poultry meat	0.4	ton	360	820	0	0	295,200	Domestic foreign	295,200	1.144
2	vegetable oils	0.14	ton	126	110	0	0	13,860	Domestic	13,860	0.054
3	wheat flour	0.06	ton	54	660	0	0	3,564	Domestic	3,564	0.014
4	soy flour	0.04	ton	36	120	0	0	4,320	Domestic	4,320	0.017
5	Spices:	0.02	ton	18	560	0	0	10,080	Domestic	10,080	0.039
6	starch	0.03	ton	27	39	0	0	1,053	Domestic	1,053	0.004
7	gluten	0.03	ton	27	140	0	0	3,780	Domestic	3,780	0.015
8	Salt	0.01	ton	9	10	0	0	90	Domestic	90	0.00035
9	Garlic	0.01	ton	9	40	0	0	360	Domestic	360	0.001
10	sodium polyphosphate	4	kg	3,600	0.26	0	0	936	Domestic	936	0.004
11	ascorbic acid	0.2	kg	180	2	0	0	360	Domestic	360	0.001
12	Sodium nitrite	0.1	kg	90	0.45	0	0	40.5	Domestic	40.5	0.00016
13	plastic coatings	0.8	kilometer	720	60	0	0	43,200	Domestic	43,200	0.167
14	Carton	84	pcs	75,600	0.12	0	0	9,072	Domestic	9,072	0.035
sum						0	0	385,915.5		385,915.5	1.496
meat hamburgers 60% :900 ton											
1	Red meat with 20% fat	0.6	ton	540	820	0	0	442,800	Domestic foreign	442,800	1.716
2	onion	0.29	ton	261	15	0	0	3,915	Domestic	3,915	0.015
3	Toasted flour	0.08	ton	72	120	0	0	8,640	Domestic	8,640	0.033
4	Spices	0.015	ton	14	560	0	0	7,840	Domestic	7,840	0.030
5	Salt	0.015	ton	14	10	0	0	140	Domestic	140	0.001
6	cellophane	0.001	ton	1	400	0	0	400	Domestic	400	0.002
7	Cardboard box	2	Thousand pcs	1,800	28	0	0	50,400	Domestic	50,400	0.195
8	Carton	84	pcs	75,600	0.12	0	0	9,072	Domestic	9,072	0.035
Sum						0	0	523,207		523,207	2.028
Total sum						0	0	1,210,164		1,210,164	4.691

## **7. The risk analysis of the project**

### **Strengths:**

- Using up-to-date technology
- The possibility of mass production
- High internal rate of return
- High quality and variety of products
- easy accessibility to raw materials with high quality food grade

### **Weakness:**

- Lack of liquidity to supply machinery
- The high price of raw materials and the need for working capital liquidity

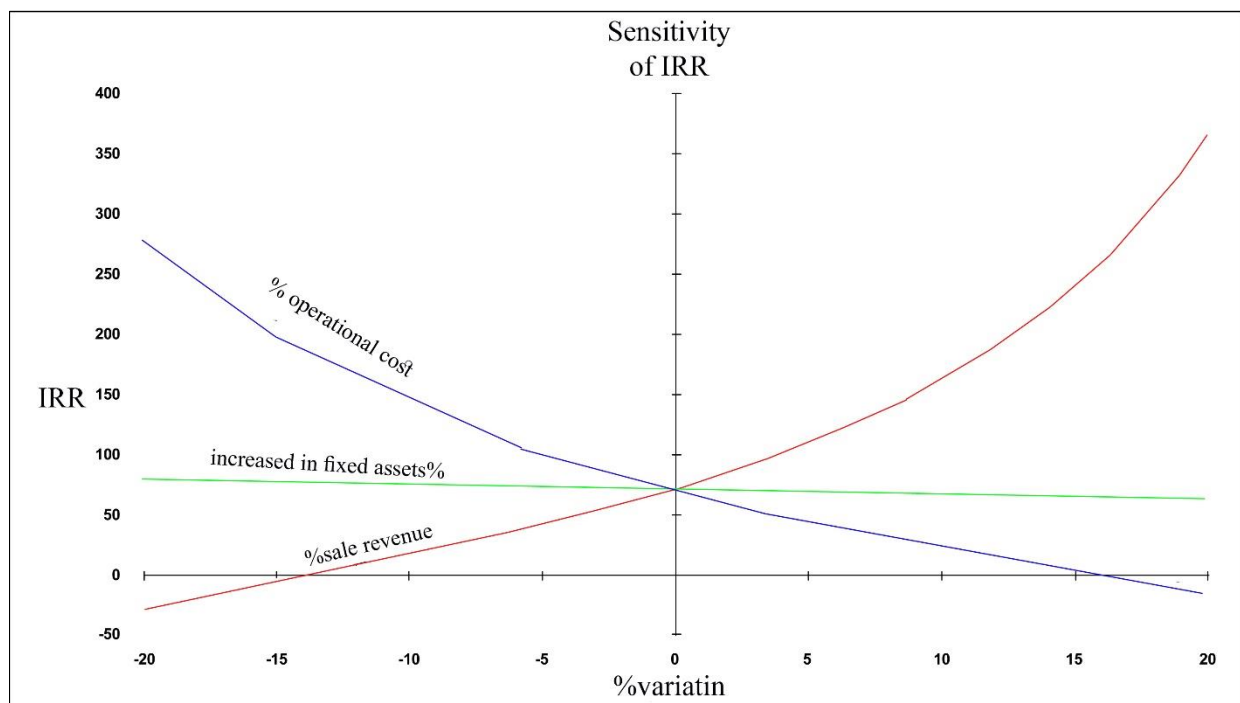
### **Opportunities:**

- Existence of a very large consumption market within the project area and province (located in Khuzestan province with 4.7 million population and high consumption of fast food)
- Lack of serious competitors in the province and where the project is being implemented
- Support the attraction of foreign investors
- Access to basic communications and infrastructure such as land, south-north rail, access to open water for export especially Iraq

### **Threats:**

- Lack of cash and financial backing
- Political and regional changes in the Middle East
- Increasing inflation and rising production prices

Sensitivity analysis of IRR based on the changes in sale revenue, increased in fixed assets and operational cost



## 8. Human resources and employment status

The project Employment rate is 30 people, 26 of these rate will be in production and 4 persons in office. Due to the existence of universities and Valid technical and professional centers in Khuzestan province and Izeh province, access to specialist human resources is provided.

Job Title	Sex		Required			Monthly salaries per person (million Rails)	Monthly salaries (million Rails)	Annual salaries (million Rails)	Equivalent in Euro
	F	M	Qty	Shift	Sum				
CEO		✓	1	1	1	60	60	984	3,814.0
Finance director, sales, administrative	✓	✓	1	1	1	50	50	820	3,178.3
Financial personnel, sales office	✓	✓	1	1	1	40	40	656	2,542.6
warehouse keeper		✓	1	1	1	37	37	606.8	2,351.9
Processes engineer	✓	✓	1	1	1	45	45	738	2,860.5
Line Supervisor	✓	✓	1	1	1	42	42	688.8	2,669.8
Skilled worker		✓	8	1	8	40	320	5,248	20,341.1
Worker	✓	✓	13	1	13	37	481	7,888.4	30,575.2
Guard		✓	1	3	3	37	111	1,820.4	7,055.8
<b>Total</b>			28		30		1,186	19,450.4	75,389.1

## 9. Determine the amount of water, electricity, gas, telecommunications and communication facilities (road - rail - Airport - Port ...) and how to provide them in the appropriate area to implementation

Izeh Industrial City has basic infrastructure such as water, electricity, gas and telecommunication facilities. It is 280 kilometers from Izeh to Ahvaz (the capital of the province), providing access to all airport, rail and transit facilities, these possibilities is facilitating trade.

Description	unit	Annual consumption	Price per unit (Rails)	Total price (million Rails)	Equivalent in Euro
Electricity	KW	600,000	1,400	1,340	5,193
water	m <sup>3</sup>	4,000	20,000	180	698
Gas	m <sup>3</sup>	600,000	1,400	2,800	10,853
Other				100	388
<b>total</b>				4,420.0	17,131.0

## 10. Economic and trade support for plan

To stimulate the industrial section and related to the resistance to economy, several projects are implemented and the following are mentioned

- In order to study, exchange of views and coordination to resolve the problems and obstacles faced by manufacturing units, "the Working Group of facilitate and remove of production obstacles " is formed in all provinces and with membership of the governor (chairman), head of the provincial Ministry of Industry, Mine and Trade ( Secretary), management and planning organization chairman, President of the Chamber of commerce, Industries, mines and Agriculture of province and chairman of the house of industry, mine and trade. The main tasks of this working group can be mentioned as follows:
  - Helping to expedite the completion and commissioning of the production of semi-finished projects and develop
  - Support and contribute to the export development of provincial products.
  - Investigating slowdown causes or production units suspension and problem solving coordination.
- **Working Group on Economy of Resistance (boom):** Regarding to the economy resistive of Ministry of Industries and Business in Act 12868 dated 2016.21.4, the funding are considered in order to completing industrial plans with a physical progress more than 60% and also improving the competitiveness of small and medium production units to increase exports.
- **Investment Guarantee Fund of Small Industries:** The credit guarantees issuance is guaranteed to facilitate financing was through small business facilities and securitized principal and interest and credit facilities granted by banks and financial institutions to small firms. This credit guaranties have been issued for applicants after expert review and validation, obtaining fees with the required securities and warranty credit.

### 10.1. Supporting of Customs tariff (products and machines) with global tariff

In order to support domestic production and ease of technology supply, the machines' input rights to the project are relatively low at around 10%.

## **10.2. financial support (existing units and projects) banks - investment firms**

The most important sources of financial credit from banks, can be cited as follows.

1. **Foreign exchange reserves:** The surplus proceeds from the sale of crude oil facility will be provided support and finance of part of the foreign exchange needs of producers and exporters of private and cooperative sectors. In the framework of contracts and Islamic banking laws and regulations enacted by the opening credits are awarded based on the provisions of the import and export of goods and services.

2. **Economy of Resistance Committee (boom):** Now, funding is considered for the completion of a physical progress with 60% and industrial production units as well as enhance the competitiveness of small and medium enterprises to increase exports.

### **3. Foreign Investment Promotion and support Act:**

Since 1955, the legal framework for foreign investment in Iran has been the Attraction and support of Foreign Investments law. In line with reforms in the economic structure of the country, the Iranian parliament has offered the foreign investment plan as a Foreign Investment Promotion and Support Act which legislated finally in 1381. This will lead to the development of the legal framework and operational environment for foreign investors in Iran. Some of the new developments in the field of foreign investments include:

- Islamic Republic of Iran is welcome of foreign investments by foreign persons, whether natural or legal persons in all areas of economic activity.

- Recognition of new investment methods in addition to foreign direct investment
- Short and quick process and approval application and foreign investment approval.
- Creating an unique organization called the Center for Foreign Investment Service Organization for Investment, Economic and Technical Assistance of Iran in order to focused and effective support of the activities of foreign investors in Iran
- Further liberalization of foreign exchange mechanisms for more use by foreign investors

In case of absorbing foreign investor, the government considers some bonus, such as:

1. Tax exemption for the products of foreign investing companies
2. Presenting insurance coverage for the investors
3. Presenting customs exemptions for importing equipment required by foreign investing companies
4. Granting subsidy for training local manpower
5. Preparing free zones for investment
6. Granting infrastructure facilities and less expensive public services such as water and power
7. Guaranteeing return on profit and the main capital and prevention from their confiscation and nationalization



## **11.Analyzes And providing summary and final offer**

Due to changing lifestyle and occupation, the pattern of food consumption in the world has changed and the tendency to consume fast food has been increased. In our country, meat industry is one of the most important branches of food industry especially in the recent years. These products are very popular because of their good taste and their consumption is growing so that per capita consumption has increased from 5.5 to 8.5 kg per person in the last 5 years. However, per capita consumption is 64 kg in the US and 60 kg per person per year in Europe.

The Sixth Economic Development Plan Act provides to produce 1 million tonnes of meat products per year in 2022 and exports of meat products to increase to 20,000 tonnes per year. At present, the production of the country is about 500,000 tons and we will be faced with a shortage of about 58,000 tons in the next five years.

Khuzestan Province with a population of 4.7 million (the fifth largest province in the country) and often young Despite of having great capabilities in accessing domestic and foreign raw materials and domestic and foreign target markets, it lacks active units in ready-made meat products such as sausages and lunch meats and hamburgers, Therefore it is necessary to activate stagnant units under construction. One of these stagnant units is khorak Sazan Omid Company which due to the technical capability and experience of the company managers and the available equipment and facilities of the factory, it is anticipated that if the necessary liquidity for working capital and partial purchase of equipment is provided, the products will be manufactured. Manufactured products are very welcomed and can be exported to neighboring countries, especially Iraq as well as selling in domestic markets.

It should be noted that Khuzestan due to its common land and water border with the Persian Gulf countries, as well as religious and cultural affiliations especially with Iraq, and the importance of Islamic slaughter of livestock for the preparation of halal meat products for these Islamic countries, It is in a very favorable position for exporting these products.

<b>Cost of (ton)</b>	lunch meat 80%(kg): 827,800 Rails $\cong$ 3.2 Euro
	chicken lunch meat 70%(kg): 278,180 Rails $\cong$ 1.08 Euro
	sausage 40%(kg): 494,000 Rails $\cong$ 1.9 Euro
	meat hamburgers 60%(kg): 665000 Rails $\cong$ 2.58 Euro
<b>Sale price of (ton)</b>	lunch meat 80%(kg): 1,000,000 Rails $\cong$ 3.87 Euro
	chicken lunch meat 70%(kg): 370,000 Rails $\cong$ 1.43 Euro
	sausage 40%(kg): 590,000 Rails $\cong$ 2.28 Euro
	meat hamburgers 60%(kg): 800,000 Rails $\cong$ 2.81 Euro
<b>total Sales (in 100%capacity)</b>	1,710,000.0 million Rails $\cong$ 6.63 million Euro
<b>Present sales in break-even point</b>	23.36%
<b>Profit (in 100%capacity)</b>	178,328.73 million Rails $\cong$ 0.69 million Euro
<b>Gross value added</b>	490,566.3 million Rails $\cong$ 1.90 million Euro
<b>Net value added (million Rail's)</b>	481,102.3 million Rails $\cong$ 1.86 million Euro
<b>The Gross value added to total Sales</b>	28.69%
<b>The Net value added to total Sales</b>	28.13%
<b>The Gross value added to Investment</b>	140%
<b>Investment Return Period</b>	3 years

Exchange rate:

1 Euro  $\cong$  258,000 Rails      1 US\$  $\cong$  217,000 Rails

## 12- Summary of pre-feasibility plan

General Specification	
Name of The Project	Meat products ( sausages, Lunch meat and burgers)
Project Capacity	2700 tons
Personnel Number	30 persons
Working Days	300 days
Product Usage	Fast food
Marketing	
Product Global Price	6.73 \$US/kg
Domestic Demand	505 thousand ton
Domestic Production	507 thousand ton
Import	-
Export	2235 ton
Technical Study	
Land Area	1405 m <sup>2</sup>
Building Area	5699.5 m <sup>2</sup>
Main Raw Materials	Red and White meats & authorised edible additives
Supplying Place of Raw Materials	Domestic & Foreign
Power Requirement	250 KW
Water Requirement	4000 m <sup>3</sup>
Fuel Requirement	600,000 m <sup>3</sup> gas
Economical & Financial Study	
Fixed Investment Cost	131,930.3 million Rails $\cong$ 0.511 million Euro
Working Capital	217,297.38 million Rail's $\cong$ 0.845 million Euro
Total Investment Cost	349,857.63 million Rail's $\cong$ 1.356 million Euro
Annual Sale	1,710,000.0 million Rail's $\cong$ 6.63 million Euro
Net Present Value(NPV)	449,476.66 million Rail's $\cong$ 1.74 million Euro
Break Even Point(BEP)	23.36%
Internal Rate of Return(IRR)	70%
Investment Return Period	3 years
<u>Investment Sources Ratio:</u>	
Equity:21.3%	74,030.3 million Rails $\cong$ 0.286 million Euro
Bank facilities: 10.5%	37,000.0 million Rails $\cong$ 0.144 million Euro
Finance: 68.2%	238,827.33 million Rails $\cong$ 0.926 million Euro