

# Pre-Feasibility Study

## CANNED FOOD



### Small and Medium Enterprises Development Authority

### Ministry of Industries & Production

### Government of Pakistan

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## 1 PURPOSE OF THE DOCUMENT

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs in project identification for investment. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document/study covers various aspects of project concept development, start-up, production, marketing, finance and business management. The document also provides sectoral information, brief on government policies and international scenario, which have some bearing on the project itself.

This particular pre-feasibility is regarding *Canned Food* which comes under *Food Sector*. Before studying the whole document one must consider following critical aspects, which forms the basis of any investment decision.

## 2 CRUCIAL FACTORS & STEPS IN DECISION MAKING FOR INVESTMENT

Before making any investment decision, it is advisable to evaluate the associated risk factors by taking into consideration certain key elements. These may include availability of resources, academic knowledge, past experience and specific managerial and technical skill set. At times evaluation and analysis of strengths, weaknesses, opportunities and threats (SWOT) for a particular project serves the purpose of a basic tool in investment decision making. Pre-feasibility study should capture all the important factors that can play an instrumental role in the success of a project.

## 3 PROJECT PROFILE

### 3.1 Opportunity Rationale

Agriculture plays a central and vital role in the development and growth of economy of Pakistan. Livestock is an important sector of Pakistan, which accounts nearly 49.10 percent of agriculture value added and about 11.4 percent of GDP.\*

Unfortunately the vegetable & meat processing industry of Pakistan could not reap the benefit of export business due to lack of proper facilities available.

The potential of the vegetable in rural economy may be realized from the fact that 30- 35 million rural population is engaged in agricultural rising. The average heard size per household is 2 acres per family.<sup>1</sup>

As a large producer of vegetables and meat etc there are many opportunities exist for Pakistan to move into high end market in the canned food industry. There is very small local market for canned food. Pakistan Army is the major buyer with an approximate annual demand of 1,200 Tons.

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<sup>1</sup> *Economic Survey 2003-04*

### 3.2 Project Brief

This feasibility study provides information and guide line about the investment opportunity in a unit of processing & canning of vegetables and meat in Pakistan.

Currently Pakistan Army is purchasing the tinned food from different suppliers. M/s **Shezan** is the major supplier with 80% share.

This project has the capability of diversifying the product mix and enlarging the product length by producing other related products with the same infrastructural facility. The project is labour intensive and semi mechanized.

### 3.3 Market Entry Timing

Various products and services have high dependence on their commercialization timing and delivery to the customers. The suitable timings for starting production of Canned Food would be the month of March/April (almost all types of vegetables are available in this season) but the product should be delivered to army before September.

### 3.4 Proposed Business Legal Status

An enterprise can be a proprietorship or a partnership and even it can be registered under company law with corporate law authority. Selection totally depends upon the choice of the entrepreneur. This section will provide appropriate business structure (proprietorship/partnership/company) and will give rationale for its selection.

### 3.5 Project Capacity and Rationale

The capacity of proposed unit of processing & canning of vegetables & meat is to fulfill production requirements of 649,020 cans (552 tones) annually. Because industry is semi mechanized and labor intensive, the capacity utilization varies depending on the staff efficiency and availability of material and working hours. Which means capacity may be increased with the increase in production hours with the same infrastructure when and while it is required to increase.

### 3.6 Project Investment

In the beginning of the project the following is the layout of the project cost:

	<b>Rs.</b>
Fixed cost	8,112,500
Working capital requirement	12,905,111
Preliminary expenses	35,000
<b>Total</b>	<b>21,052,615</b>

### 3.7 Proposed Product Mix

#### Vegetables with brining

Spinach
---------

	Peas green
	Carrots
	Turnips
	Cauliflower
	Ladyfinger
	Kaddu
	Tinda
	Tomato
Red Beans	
Potatoes	
<b>Beef with vegetable</b>	
	Beef and potatoes
	Beef and peas
	Beef and spinach
	Beef and kabli chana
<b>Chicken</b>	
	Chicken curry
	Chicken masala

### 3.8 Recommended Project Parameters

Capacity	Human Resource	Technology/Machinery	Location	
Installed Capacity	No. of employees	Local/Foreign	Suitable Locations	
552 Ton	96	Local	Lahore	
Financial Summary				
Project Cost	IRR	NPV	Payback Period	Cost of Capital(Wacc)
21.05 million	32.63%	6.80 m	4.08	25%

### 3.9 Proposed Location

Selection of district or a particular city for a project has imperial effects on fixed costs, operation costs and procedures. The sub-urbs of Karachi, Lahore and Rawalpindi are good locations for this project because of easy availability and low cost of land (growing industrial clusters in these areas are due to this reason). Necessary infrastructure is also available.

### 3.10 Key Success Factors

#### 3.11 Strengths

Canned food being a resource based industry; the large production of vegetables and meat etc. in Pakistan is strength for this industry. Following are a few strengths of the project:

- Large export oriented industry
- Quality raw material at cheaper rates is available all over the country
- Self financed based industry, medium investment required
- Competitive advantage due to indigenous raw material and skilled labour at cheap rates.
- Wide availability of manpower with available skills and personalized knowledge of raw material and prices.

#### 3.12 Threats/Weaknesses

The level of technology being used is very low. This not only reduces the production capacity of the smaller manufacturers, but also affects the quality of their product, thereby affecting their competitive edge in the international markets. If canning is done by untrained staff could cause bugling and thereby fungus attacks which could damage the production even at 100 % spoilage rate.

Following are some of the threats that a new investor might face.

- Monopolistic competition of major market players like Shezan International.
- Small local demand.
- Sometimes high wastage due to improper storage
- Lack of modern technology and skilled workers
- Short storage life of raw material and inadequate post harvest facilities.
- Hard to assess regular consistent supply of quality raw material

## 4 SECTOR & INDUSTRY ANALYSIS

### 4.1 Major market players

**Shezan International Limited**

Ahmed Foods (Pvt) Limited

Mitchell's Fruits

Dittu's & Sons

Tasty Food Products, Peshawar



KK and Limited Peshawar

Frontier canning company Peshawar

Iqbal Business center Karachi

Hunza valley and Hattar industry, Hattar

The clusters of these industries are mostly concentrated in Karachi, Lahore, Quetta and Peshawar. These industries are mostly export oriented especially of canned food products. Pakistan has a very small market for canned food except Pakistan Army which is the major buyer of canned food.

## **5 MARKET INFORMATION**

### **5.1 Market Potential**

As said earlier, the size of canned food for local market is very small due to the common habit of buying fresh produce on a daily basis, rather than buying weekly and storing at home for later use.

World is changing rapidly and so are its tastes. As a consumer society emerges, so new products are appearing with increasing regularity. Canned foods are among them. Rising average annual incomes, greater ownership of better home cooking facilities, increased exposure to western and international cuisines and a greater array of goods in the supermarket are all combining to increase sales of canned foods in World. The arrival of the fast-food chains, western-style supermarkets, greater awareness of canned foods and the emergence of a generation both willing and able to try new products has meant that the market for chilled foods has made great strides in World. The increasingly busy lifestyle of urban population in particular, has led to an increased demand for convenience foods, such as canned ready meals. Also, and increasing number of people are finding it difficult to go shopping for food each day, and so more people are now buying foods for use another day, leading to an increased acceptance of canned food use.

### **5.2 Target Customers**

Our target market in this feasibility will be Pakistan Army as they have substantial current demand of approx 1,200 tons annually. However, Arab countries specifically Middle East States and Afghanistan can be potential foreign markets for Pakistani canned vegetable, poultry and beef products. Surplus can be exported through proper grading, processing, packaging and transportation. A small segment of market also exists in the form of tourists of Northern Areas and mountain hikers.

### 5.3 Trade Statistics

#### 5.3.1 Global

Total global trade for processed products is more than Four Billion US Dollars. Detail of product wise export is as under:

<b>PRODUCT</b>	<b>VALUE US \$ (000)</b>
Processed Vegetables	382,202
Processed fruits	1,030,730
Processed meat, poultry etc	2,825,297
<b>Total</b>	<b>4,238,229</b>

(Trade Analysis System 2002)

The above table shows the global market for processed vegetable, fruit and meat etc. which includes processed products by other methods of preservation like Drying or Dehydration, Freezing, Freeze drying, Fermentation or Pickling, Irradiation etc.

#### 5.3.2 Major world exporters

Major world exporters of preserved food are China, Brazil, Thailand, Germany, France, USA, Thailand, Ireland, Belgium, Argentina etc. Detailed list of top ten exporters along with their share of product wise export are given in Appendix.

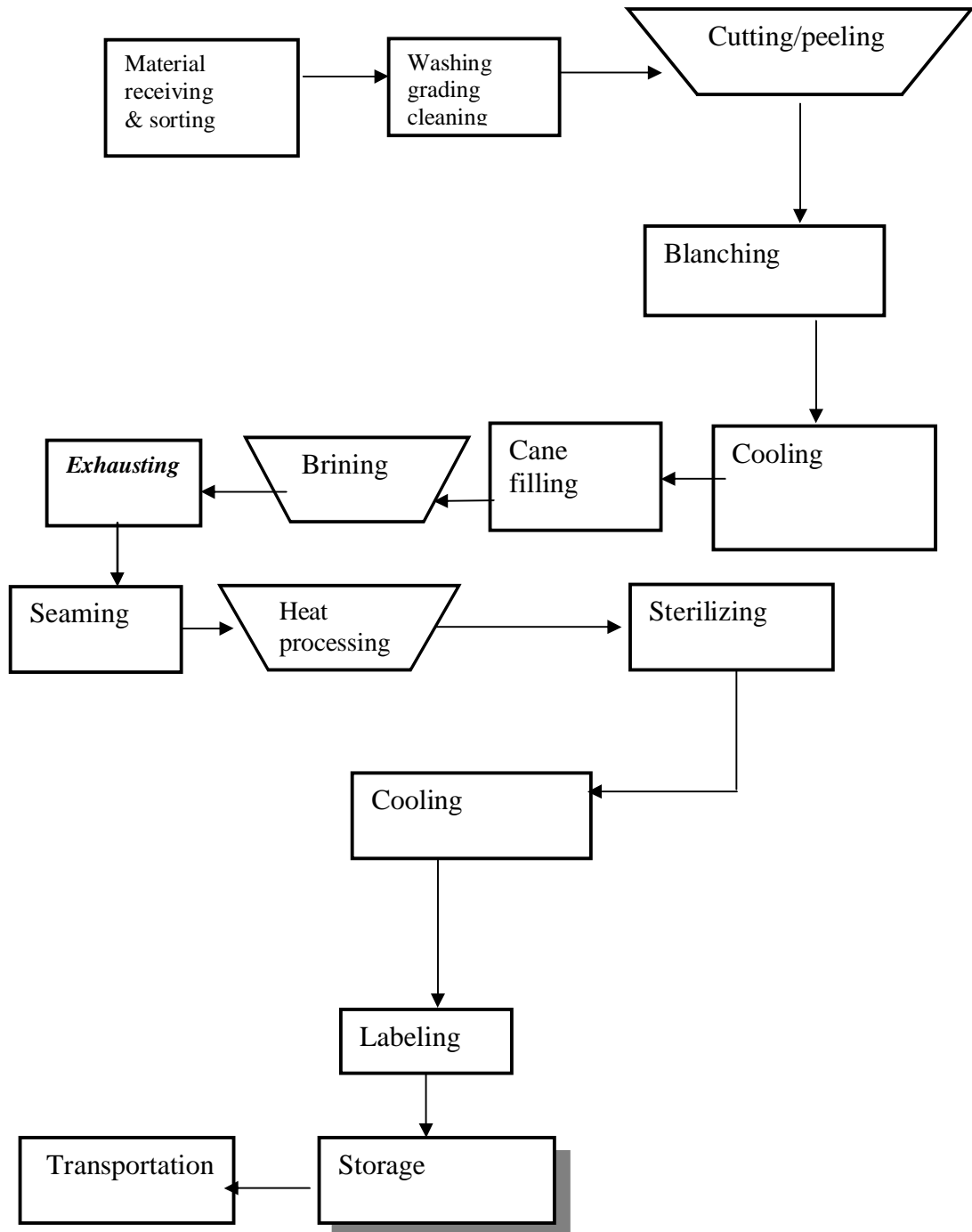
#### 5.3.3 Major world importers

Major world importers of preserved food are Japan, U.K, Germany, USA, France, Belgium, Ireland, Netherlands and Australia etc. Detailed list of top ten importers along with their share of product wise export are given in Appendix.

## 6 PRODUCTION PROCESS

### 6.1 Flow Sheet

The technological flow-sheet covers steps that are applied partly or completely for processing are seen as follows:



### **Sorting**

It is appreciated that some varieties of fruit and vegetables are not suitable for canning, either because they are uneconomical to prepare or because the color, flavor or texture are poor.

Suitable varieties like Tinda, Spanish, Turniph, etc. must be available to the canner in quantities sufficient to meet his requirements and in sound conditions for canning. The flow to the cannery should be regulated in order that perishable materials are not left for a long time before being handled, since any delay will cause deterioration.

Apart from the main ingredients, be it fruit or vegetables, minor ingredients also require careful selection. Sugar, salt, water and spices for instance may all be contaminated with spoilage organisms, so constant testing of all raw materials is essential.

### **Washing**

Thorough washing of vegetable is necessary to remove spores of heat resistant bacteria which are present in large numbers in the soil.

### **Grading**

After washing, the vegetables are separated into different sizes.

### **Cleaning**

All equipment must be scrupulously clean and preparation should be completed quickly and carefully in order to keep the bacterial load as low as possible.

### **Cutting**

This cutting operation is done in two parts namely:

- a. Size reduction.
- b. Skin Removal/peeling

### **Blanching**

Blanching in steam or hot water is of no avail against the heat resistant (thermophilic) spores because of the comparatively low temperatures involved.

Reasons for blanching are:

- the removal of gas from the tissues of the raw material;
- the shrinkage of this material;

- The inhibition of enzymic reactions, which, if not checked, will adversely affect the colour and nutritive value of the food.

### **Cooling**

Cooling of vegetables after water blanching or steaming is performed in order to avoid excessive softening of the tissues and has to follow immediately after these operations; one exception is the case of vegetables for drying which can be transferred directly to drying equipment without cooling.

Natural cooling is not recommended because it's too long and generates significant losses in vitamin C content. Cooling in pre-cooled air (from special installations) is sometimes used for vegetables that will be frozen

Cooling in water can be achieved by sprays or by immersion; in any case the vegetables have to reach a temperature value under 37° C as soon as possible. Too long a cooling time generates supplementary losses in valuable hydro-soluble substances; in order to avoid this, the temperature of the cooling water has to be as low as possible.

### **Can filling**

Can filling is carried out by leaving an empty space of 5-15% of the total volume, depending on filling temperature and the product type. Filling, be it mechanical or by hand, requires careful attention.

The cans must be clean and the correct weight of foodstuffs must be added. Under-filled cans will be underweight and the headspace will be too large, resulting in too much air being left in the can. Overfilling may lead to seams being strained during processing and to ends becoming distorted and bulged.

If the product forms hydrogen on storage as is the case with colored fruits, swelling of the can due to hydrogen pressure will occur more quickly in an overfilled can than in one which has been correctly filled. Overfilling also affects heat penetration in the can and may lead to spoilage outbreaks.

### **Brining/Syruping**

After the cans are filled, brine is added according to specification. Brine is made up with 11 Kg of salt per hundred gallons of water. Colour is sometimes used and gives a good appearance if it is not overdone. Be sure that solution is well dissolved before drawing off for each batch.

### **Pre-heating/Exhausting**

Pre-heating (exhausting) of filled canes aims at the removal of air from the tissues and the increase of the initial temperature of the contents. On modern production lines,

exhausting is eliminated and replaced by the increase of the filling liquid temperature and hermetic receptacle closing under vacuum.

When exhausting is applied, with steam or with hot water, the pre-heated cans must be immediately closed in order to avoid the contraction of liquid phase and thus air introduction. Exhausting is performed in special, continuous equipment; product temperature is between 80 and 95° C, during 2-10 min.

### ***Air removal***

Before the can is seamed, air must be removed from the contents and the headspace. Normally, this is carried out by passing the cans through a steam box until the temperature at the centre of the can is at least 160° F. This operation, termed exhausting, is necessary for the following reasons:

- i. to minimise strains on the seams due to expansion of air during the processing period;
- ii. to remove oxygen which accelerates corrosion in the can and also causes oxidation of the food with possible serious effects on colour and flavour;
- iii. to reduce the destruction of vitamin C;
- iv. To enable a vacuum to be formed when the can is cooled.

This ensures that the ends remain concave, even when storage temperatures are a little higher than usual, and also acts as a reservoir for hydrogen which may be formed by reactions between the can and its contents. Thus a high vacuum makes for a long shelf life. Large cans, however, should not reach such a high exhaust temperature before seaming as smaller cans because of the danger of the can body collapsing on cooling, a condition known as "paneling".

### ***Seaming***

The can should be seamed as soon as the correct centre temperature has been attained. Any delay between exhausting and seaming will lead to loss of vacuum and may lead to bacterial spoilage. The quality of the double seam must, of course, be frequently checked.

### ***Heat Processing***

After seaming, the cans are heated for a definite time at a definite temperature to kill or inhibit organisms which may cause spoilage. This operation is termed "heat processing".

The times and temperatures required for "heat processing" of various packs have been determined experimentally to ensure that spores of the most heat resistant food poisoning organisms known, *Clostridium botulinum*, are destroyed.

There are other organisms, however, whose spores are more heat resistant than those of *Clostridium botulinum* and which although will not cause food poisoning, may cause spoilage and for this reason the minimum heat processing time is often exceeded by recommendations made by laboratories.

At the same time there is a limit to the amount of heating which a canned food may be given without spoiling its flavour, texture and colour and this also has to be taken into consideration when process recommendations are made.

Bacterial spores have a greater resistance to heat when the growth-medium is neutral or near neutral, and neutrality is normally required for bacterial growth to commence. Because of this, canned foods have been broadly divided into two groups:

- a) "Acid" foods having a pH of 4.5 or lower and
- b) "Non-acid" foods having a pH of more than 4.5.

"Non-acid" foods (vegetables) must, therefore be "heat processed" at high temperatures using steam under pressure, whereas "acid" foods (fruit) may be processed at the (lower) temperature of boiling water, since this will kill moulds and yeasts and if any bacterial spores survive the combination of acid and heat, they will be inhibited from growth by the acid environment.

The rate of destruction by heat follows a definite pattern, the same proportion of the surviving bacteria being destroyed in successive units of time. The more bacteria there are in a pack, the more time will be need to reduce their numbers. For this reason, it is essential that the initial number of bacteria be kept low, and this may be achieved by ensuring fast and hygienic handling at all stages in the cannery.

Pressure gauges and retort temperature control equipment must be checked frequently for accuracy. Processing times and temperatures must be strictly adhered to, and complete removal of air from the retort during processing must be achieved by adequate venting. Failure to remove the air completely will result in their being a cold spot in the retort and intermittent spoilage is likely.

### ***Sterilizing***

The sterilization of vegetables in a pressure cooker fitted with an accurate gauge must be carefully done, or there may be a danger of leaking the cans and losing most of the material from the cans.

### ***Cooling***

As soon as the heat processing time is completed, the cans are cooled in chlorinated water as rapidly as possible without damaging them. Cans processed in steam develop high internal pressure because of the expansion of the foodstuff, the expansion of air in the can and the increase in the vapour pressure of the water in the can.

During the heat process, these pressures are counter-balanced to some extent by the pressure of the steam in the retort, but on releasing this steam pressure at the commencement of the cooling period, the pressure in the can may be sufficient to strain the seams seriously and may even distort the ends.

Cans of A 2 1/2 size or larger, when processed at temperatures of 240° F or more, are liable to undergo permanent distortion, such as peaking. This may be avoided by pressure cooling, which involves replacing steam pressure by air pressure before introducing water to the retort, and maintaining this until the pressure inside the can has fallen to a safe level.

This presents difficulties, since if the air pressure is maintained after the can has developed a vacuum, the can body is liable to collapse. Where pressure-cooling is not carried out, the retort pressure is allowed to drop slowly to atmospheric pressure and the cans are then cooled with water.

### ***Labeling***

Labels for cans should be long enough to encircle the can., with about one inch overlap; otherwise they are easily unstuck during storage. In your own interest, write on the label the kinds of fruits & vegetables and the date of canning.

### ***Storage***

After cooling, the cans should be stored in cool, dry conditions. The maintenance of a constant temperature is desirable, since a rise in temperature may lead to condensation of moisture on the can, with possible rusting. Cool conditions are required because storage at higher temperatures not only causes chemical and physical changes in the product and the container but also introduces a risk of thermophilic spoilage.

Other known causes of container spoilage in storage are the use of labels and cardboard cases which have too high a chloride content, and the use of unseasoned wood in the manufacture of packing cases, all of which tend to cause rust formation on the cans.

### ***Canning of meat (beef and chicken)***

Canning preserves the sensory attributes such as appearance, flavor and texture of the meat products to a large extent. Besides, canned meat products have a shelf life of at least two years at ambient temperature. Conventional canning is done in the same way as for vegetable (explained earlier). The difference is that for meat canning, meat and gravy is prepared and cooked using oil, condiments, tomatoes, dry spices and salt etc. before filling process. Filling in cans may be done manually or mechanically leaving proper headspace as per specification. Half of the gravy is filled first followed by meat chunks and finally the rest of the gravy. For the purpose of this feasibility it is assumed that the catering is outsourced on contract basis.



## 6.2 Product Mix Offered

Vegetables with brining		
	Spinach	
	Peas green	
	Carrots	
	Turnips	
	Cauliflower	
	Ladyfinger	
	Kaddu	
	Tinda	
	Tomato	
Red Beans		
Potatoes		
Beef with vegetable		
	Beef and potatoes	
	Beef and peas	
	Beef and spinach	
	Beef and kabli chana	
Chicken		
	Chicken curry	
	Chicken masala	

## 6.3 Raw Material Requirement

Raw material like fresh vegetables and beef etc are easily available every where in Pakistan. Almost every city/town has its SABZI MANDI AND SLAUGHTER HOUSE from where the fresh raw material can be purchased on economical prices. It is recommended to purchase seasonal vegetables because it is more suitable for canning and also it is more economical than non seasonal vegetables.

### List of Raw and Processing Material

Description	Price (Rs.)/Kgs	Availability
Spinach	4	Local
Peas Green	26	Local
Carrots	12	Local
Turnips	3	Local

Cauliflower	6	Local
Lady finger	12	Local
Kaddu	6	Local
Tinda	20	Local
Tomato	14	Local
Potatoes	14	Local
Red beans	30	Local
Beef	100	Local
Chicken	100	Local

\* Rates are taken from the DAILY NARAKHNAMA of Market Committee, Badami Bagh Lahore dated May 24, 2004

#### 6.4 Machinery Requirement

Processing Machinery	Qty	Price (Rs.)	Availability
Cooking Pans	4	300,000	Imported but Locally available
Boiler (OLD)	1	250,000	Locally available
Pasteurizer unit	2	700,000	Imported but Locally available
Exhaust box	2	350,000	Imported but Locally available
Cane reformer	1	35,000	Imported but Locally available
Seamers	2	110,000	Imported but Locally available
Water Tester	1	25,000	Imported but Locally available
Auto Clave	3	375,000	Imported but Locally available
Metal stand /container	8	200,000	Locally available
Top Chain conveyor	1	20,000	Locally available
Embossing Printing machine	1	250,000	Locally available
Steam water and gas pipeline		400,000	Locally available

Supplier of Machinery:

- Two-Star Engineering Services (Pvt.) Ltd.  
239-S Industrial Estate Kot Lakhpat Lahore  
Tel: 042-512 1136, 512 2336
- Supplier of Can  
Local Manufacturer:  
Hashimi Can Company Limited  
B/24, S.I.T.E., Textile Avenue, Karachi  
Voice:2570680-89

Fax: 2563581  
E-mail: hashimican@cyber.net.pk

Imported:

- The Chase Manhattan, Inc.  
Taipei Office, Room 905 Taichi Bldg. 10 Chung King S. Rd. Sec. 1 Taipei, Taiwan

## 6.5 Machine Maintenance

Cost for machine maintenance, needs for lubricating oils, spare parts, electrical accessories etc. will be 1% of revenue.

## 7 LAND & BUILDING REQUIREMENT

### 7.1 Land Requirement

For Cane Food manufacturing unit with installation of above said machines approximately 9,000/ sq. ft. area is required which includes space for admin office, Processing area and stores.

### 7.2 Covered Area Requirement

			Sq.ft.
Reception, Weighing & Grading			160
Washing and Disinfecting			160
Cutting and Peeling Area			537
Processing, Filling & Boiler Area			3,500
Storing Area			1,125
Labour Area:			338
Dressing Rooms			
Lockers			
Bath Rooms			
Administration Block			1,250
Loading Area / Ground			2,250
<b>Total Area</b>	2.0	Kanals	<b>9,000</b>

### 7.3 Construction Cost

			PKR		
			Sqft.	Construction Rate per Sqft.	Amount
Reception, Weighing & Grading			160	200	32,000
Washing and Disinfecting			160	200	32,000
Cutting and Peeling Area			537	300	161,100
Processing, Filling & Boiler Area			3,500	300	1,050,000
Storing Area			1,125	300	337,500
Labour Area:			338	300	101,400
Dressing Rooms					
Lockers					
Bath Rooms					
Administration Block			1,250	550	687,500
Loading Area / Ground			2,250	100	225,000
<b>Total Area</b>			9,000		2,562,500

### 7.4 Utilities Requirement

<b>Power Load Working ( at 100% capacity )</b>				
Items	No.	Load / Item watts	Total Load watts	Total KW
Air Conditioner	2	2250	4500	4.50
Tube Lights	360	40	14400	14.40
Ceiling Fans	30	100	3000	3.00
Machines			4500	4.50
Tubewell	1	3500	3500	3.50
<b>Total Kilo Watts</b>				<b>29.90</b>
Working hours / Day				10
Working hours / Year				3,000
Kilo Watts Hours				<b>89,700</b>
Cost of Electricity @ Rs.		4.70	(avg)	<b>407,490</b>

( Tariff B-I )

The average working days are assumed to be	300
--------------------------------------------	-----

**Gas Load Working ( at 100% capacity )**

Items	No.	hm3	total hm3
Boiler (0.3 Tons)	1	0.5	0.50
			<b>0.50</b>
Working hours / Day			10
Working hours / Year			3000
hm3 total			<b>1,500</b>
Cost of Gas @ Rs.	600.00	(avg)	<b>900,000</b>
The average working days are assumed to be	300		

**7.5 Suitable Location**

The suitable location for this project is Raiwind Road or Sheikhpura Road, Lahore.

**8 HUMAN RESOURCE REQUIREMENT**

Positions	Number	Salary/month (Rs.)	Annual salary
<b>PRODUCTION STAFF</b>			
Supervisor/Food Technologist	1	15,000	180,000
Assistant Supervisor	1	10,000	120,000
Procurement officers	2	10,000	240,000
Grading/Washing/Cutting and Peeling workers	60	3,000	2,160,000
Processing and filling	15	3,000	540,000
Helper	5	2,000	120,000
Cleaning	3	1,500	54,000
Store Keeper	1	4,000	48,000
Technician/Electrician	1	3,500	42,000
<b>ADMINISTRATIVE STAFF:</b>			
Account officer	1	7,500	90,000
Personal and Admin officer	1	6,000	72,000
Peon	2	3,000	72,000
Security Guards	2	3,000	72,000
Gardner	1	2,000	24,000
<b>Grand Total:</b>			<b>3,834,000</b>

## 9 FINANCIAL ANALYSIS

### 9.1 Initial Project Cost

Following is the breakdown of the initial project cost for the proposed Canned Food Project. It is suggested that the land for the Canned Food is purchased and a custom designed building is constructed.

<b>Estimated Project Cost and Financing</b>									
									<b>PKR</b>
<b>Land</b>	2.0	Kanals	@	Rs.	1,000,000	per	Kanals		<b>2,000,000</b>
<b>Building</b>									<b>2,562,500</b>
<b>Furniture &amp; Fixture</b>									<b>260,000</b>
<b>Plant &amp; Machinery:</b>									
							<b>No.</b>		
Cooking Pans							4		300,000
Boiler							1		250,000
Pasturizer Unit							2		700,000
Exhaust Box							2		350,000
Cane Reformer							1		35,000
Seamers							2		110,000
Water Tester							1		25,000
Auto Clave							3		375,000
Mattel Stand / Container							8		200,000
Top Chain Conveyer							1		20,000
Embozing / Printing Machine									250,000
Steam, Water & Gas Pipe Line									400,000
									<b>3,015,000</b>
<b>Electric Fittings</b>									
Air Conditioner									25,000
Fans & Tube Lights									50,000
Tube well									75,000
									<b>150,000</b>
<b>Other Tools &amp; Equipments</b>									<b>50,000</b>
<b>Overhead Water Tank</b>							@	Rs.15	<b>75,000</b>
									(Having capacity of 1,000 gallons of water)
									<b>8,112,500</b>

<b>Preliminary Expenses</b>									<b>35,000</b>
Working Capital									12,900,137
									<b>21,047,637</b>
<b>Financed By:</b>									
Sponsors Equity					50%				10,523,819
Bank Finance					50%				10,523,819
									<b>21,047,637</b>

**9.2 Estimated Time for Project Completion**

- One month for completion of initial formalities i.e. formation, registration of the company etc.
- One year for purchase of land and construction of building.



### 9.3 Projected Income Statement

This statement provides entity's forecasted yearly profit and loss for the future. It shows whether the company made any profit in a year, what the expenses were and where the profits were used.

#### 45. Projected Profit & Loss Statement

	PKR (ooo)									
	Year - I	Year - II	Year - III	Year - IV	Year - V	Year - VI	Year - VII	Year - VIII	Year - IX	Year - X
Revenue	44,026	48,539	53,514	58,999	65,046	71,714	79,064	87,168	96,103	105,954
Cost of production	33,950	37,081	40,529	44,533	48,722	53,323	58,394	63,972	70,109	76,860
<b>Gross Profit</b>	10,076	11,458	12,985	14,466	16,325	18,390	20,670	23,196	25,994	29,093
Administrative Expenses	630	677	727	781	840	904	974	1,049	1,131	1,219
Selling & Distribution Cost	2,000	2,200	2,420	2,662	2,928	3,221	3,543	3,897	4,287	4,716
<b>Operating Profit</b>	7,446	10,781	12,258	13,684	15,484	17,486	19,697	22,147	24,863	27,874
Financial Charges	1,000	789	579	368	158	-	-	-	-	-
<b>EBT</b>	6,446	9,992	11,679	13,316	15,327	17,486	19,697	22,147	24,863	27,874
Provision for Taxation	2,514	3,697	4,088	4,661	5,364	6,120	6,894	7,752	8,702	9,756
<b>EAT</b>	3,932	6,295	7,591	8,655	9,962	11,366	12,803	14,396	16,161	18,118
Acc. Profit / (Loss) b/f	-	3,932	10,227	17,818	26,473	36,436	47,801	60,604	75,000	91,161
<b>Accumulated Profit / (Loss) c/f</b>	<b>3,932</b>	<b>10,227</b>	<b>17,818</b>	<b>26,473</b>	<b>36,436</b>	<b>47,801</b>	<b>60,604</b>	<b>75,000</b>	<b>91,161</b>	<b>109,279</b>

\* Ignoring sales tax,



## 9.4 Projected Balance Sheet

Projected balance sheet is a snapshot of a company's capital/asset position at an instant in future time. It details everything it owns and every thing it owes at year end.

### 10.3 Projected Balance Sheet

	PKR (ooo)										
	Year - 0	Year - I	Year - II	Year - III	Year - IV	Year - V	Year - VI	Year - VII	Year - VIII	Year - IX	Year - X
<b>Tangible Fixed Assets</b>	8,113	7,626	7,183	6,779	6,411	6,075	5,768	5,487	5,229	4,993	4,776
<b>Preliminary Expenses</b>	35	28	21	14	7	-	-	-	-	-	-
<b>Current Assets:</b>											
Inventory	4,881	4,881	5,382	5,933	6,542	7,212	7,951	8,766	9,665	10,656	11,748
Accounts Receivable	8,805	8,805	9,708	10,703	11,800	6,505	7,171	7,906	8,717	9,610	10,595
Cash in Hand / Bank	-	4,834	9,311	14,114	19,992	33,594	44,697	57,092	70,988	86,554	103,977
	<b>21,834</b>	<b>26,175</b>	<b>31,605</b>	<b>37,544</b>	<b>44,751</b>	<b>53,386</b>	<b>65,588</b>	<b>79,251</b>	<b>94,599</b>	<b>111,813</b>	<b>131,096</b>
<b>Owners Equity:</b>											
Capital	10,526	10,526	10,526	10,526	10,526	10,526	10,526	10,526	10,526	10,526	10,526
Accumulated Profit	-	3,932	10,227	17,818	26,473	36,436	47,801	60,604	75,000	91,161	109,279
<b>LONG TERM LOAN</b>	10,526	6,316	4,211	2,105							
<b>Current Liabilities:</b>											
Current Portion of Long Term Loan prov for tax	-	2,105	2,105	2,105	2,105	-	-	-	-	-	-
Accounts Payable	782	782	839	901	986	1,060	1,140	1,227	1,321	1,424	1,535
	782	5,401	6,641	7,094	7,752	6,424	7,260	8,121	9,073	10,126	11,291
	<b>21,834</b>	<b>26,175</b>	<b>31,605</b>	<b>37,544</b>	<b>44,751</b>	<b>53,386</b>	<b>65,588</b>	<b>79,251</b>	<b>94,599</b>	<b>111,813</b>	<b>131,096</b>

## 9.5 Projected Cash Flow Statement

The projected cash flow statement details the amount of money that flows in and out of a company in a given period of time. Other than these financial statements, report should provide analysis of these financial statements.

### 10.5 Projected Cash Flow

	PKR (ooo)										
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
EBIT	0	7,446	10,781	12,258	13,684	15,484	17,486	19,697	22,147	24,863	27,874
Amortization	0	7	7	7	7	7	0	0	0	0	0
Depreciation	-	487	443	403	368	336	307	281	258	236	217
	0	7,940	11,231	12,668	14,059	15,827	17,793	19,978	22,405	25,100	28,091
Working Capital Change	0	0	(1,345)	(1,484)	(1,620)	4,699	(1,326)	(1,463)	(1,615)	(1,782)	(1,966)
<b><u>Cash form other Sources</u></b>											
Owners	10,526	-	-	-	-	-	-	-	-	-	-
Financing	10,526	-	-	-	-	-	-	-	-	-	-
Total Sources	21,053	7,940	9,886	11,184	12,439	20,526	16,467	18,515	20,790	23,318	26,125
<b><u>Applications:</u></b>											
Fixed Assets	8,113	-	-	-	-	-	-	-	-	-	-
Pre-liminary expenses	35	-	-	-	-	-	-	-	-	-	-
Working Capital	12,905	-	-	-	-	-	-	-	-	-	-
Re payment of Loan	-	3,105	2,895	2,684	2,474	2,263	-	-	-	-	-
Tax	-	-	2,514	3,697	4,088	4,661	5,364	6,120	6,894	7,752	8,702
Cash Increase/(Decrease)	0	4,834	4,477	4,803	5,878	13,602	11,103	12,395	13,896	15,566	17,422
Opening Balance	-	-	4,834	9,311	14,114	19,992	33,594	44,697	57,092	70,988	86,554
Closing Balance	0	4,834	9,311	14,114	19,992	33,594	44,697	57,092	70,988	86,554	103,977

### 9.6 Capital Budgeting

Capital budgeting is the process by which an entrepreneur decides which long-term investments to make. The decision to accept or reject a project depends on an analysis of the cash flows generated by the project and its cost. IRR, NPV and payback period are general parameters to evaluate any project’s feasibility. This section will provide these calculated parameters and will also give proper rationale and analysis behind these calculations.

#### Pay back period (Total Project Cost prospective)

**PKR**  
**(ooo)**

year	Initial investment	investment at the beginning	cash flows	investment at the end
0	21,053			
1		21,053	4,834	16,218
2		16,218	4,477	11,741
3		11,741	4,803	6,938
4		6,938	5,878	1,061
5		1,061	13,602	(12,541)
6		(12,541)	11,103	(23,645)
7		(23,645)	12,395	(36,039)
8		(36,039)	13,896	(49,935)
9		(49,935)	15,566	(65,502)
				<b>4.08 years</b>



**Net Present Value (Total Project Cost Prospective)**

year	cash flows	PVFI at 25%	Present value
0	(21,053)	1.0000	(21,053)
1	4,834	0.8000	3,867
2	4,477	0.6400	2,865
3	4,803	0.5120	2,459
4	5,878	0.4096	2,407
5	13,602	0.3277	4,457
6	11,103	0.2621	2,911
7	12,395	0.2097	2,599
8	13,896	0.1678	2,331
9	15,566	0.1342	2,089
10	17,422	0.1074	1,871
<b>Net present value</b>			<b>6,805</b>

**Internal Rate of Return ( IRR )**

year	cash flows	PVFI at 30%	PVFI at 35%	Present value	Present value
				30%	35%
0	(21,053)	1.0000	1.0000	(21,053)	(21,053)
1	4,834	0.7692	0.7407	3,719	3,581
2	4,477	0.5917	0.5487	2,649	2,456
3	4,803	0.4552	0.4064	2,186	1,952
4	5,878	0.3501	0.3011	2,058	1,770
5	13,602	0.2693	0.2230	3,663	3,033
6	11,103	0.2072	0.1652	2,300	1,834
7	12,395	0.1594	0.1224	1,975	1,517
8	13,896	0.1226	0.0906	1,704	1,260
9	15,566	0.0943	0.0671	1,468	1,045
10	17,422	0.0725	0.0497	1,264	867
<b>Net present value</b>				<b>1,933</b>	<b>(1,738)</b>
<b>IRR</b>		<b>32.63%</b>			





**10 KEY ASSUMPTIONS**

Hours operational per day	10 hours
Days operational per month	25 days
Day operational per year	300 days
Machine maintenance growth rate	5%
Electricity cost growth rate	5%
Inflation rate	5%
Material purchase price growth rate	5%
Can weight Net	850gms
Depreciation charge	On WDV
Taxation Income tax	39%
Sales tax	Ignored
Cost of cans growth rate	5%
Filled Can wastage	2%
Addition of brine salt solution with vegetables	50% by weight
Bones in meat	Not more than 15 % by weight
Product and Gravy (Indirect Material) proportion Chicken Curry	1:1 (Gravy 50% of net weight)
Product and Gravy (Indirect Material) proportion Chicken Masala	2:1 (Gravy 33% of net weight)
Product and Gravy (Indirect Material) proportion Beef with vegetable	2:1 (Gravy 33% of net weight)
Indirect material cost	25% of Direct material cost

**10.1 10.2 Cutting and peeling wastage**

Spinach	50%
Green peas	50%
Carrots	15%
Turnip	15%
Cauliflower	15%
Lady finger	15%
Kaddu	10%
Tinda	10%

Tomatoes	10%
Red beans	Ignorable
Potatoes	5%
Beef	10%
Chicken	10%
Production capacity growth rate	5%
Product market price growth rate per annum	5%





## 11 APPENDIX

### 11.1 TOP TEN IMPORTERS

PRESERVED VEGETABLES						
(VALUE IN THOUSANDS US DOLLARS)						
COUNTRY		1998	1999	2000	2001	2002
	QTY UNIT	V	V	V	V	V
		Q	Q	Q	Q	Q
JAPAN		148,878	163,119	138,821	131,722	120,666
	Tons	199,526	213,272	186,248	191,571	173,135
ITALY		45,797	41,871	45,798	52,959	52,690
	Tons	23,739	21,806	23,706	26,039	28,266
BRAZIL		55,152	45,111	50,706	39,936	37,221
	Tons	38,720	38,408	41,879	40,200	44,978
GERMANY		36,614	31,737	29,247	25,204	26,411
	Tons	29,612	26,374	23,713	22,671	21,795
USA,PR,USVI		17,387	31,957	26,690	24,820	17,386
	Tons	27,845	42,181	39,834	30,280	20,791
FRANCE		17,456	14,648	19,019	24,855	21,216
	Tons	14,340	13,683	17,137	22,672	22,894
SPAIN		16,101	15,636	18,909	23,671	20,600
	Tons	18,561	15,651	19,631	22,932	21,017
NETHERLANDS		13,541	14,263	25,035	13,104	14,607
	Tons	14,750	21,578	36,309	15,541	16,149
CANADA		13,393	17,400	14,475	12,911	12,578
	Tons	13,645	15,386	13,348	12,105	12,924
AUSTRALIA		11,831	12,431	11,595	10,246	17,844
	Tons	7,772	8,380	9,792	9,430	11,087
	V	<b>376,150</b>	<b>388,173</b>	<b>380,295</b>	<b>359,608</b>	<b>341,219</b>
	Q	<b>388,510</b>	<b>416,719</b>	<b>411,597</b>	<b>393,441</b>	<b>373,036</b>
Trade Analysis System						

## 11.2 TOP TEN IMPORTERS

<b>PRESERVED POULTRY</b>						
(VALUE IN THOUSAND US DOLLARS)						
COUNTRY		1998	1999	2000	2001	2002
	QTY UNIT	V	V	V	V	V
		Q	Q	Q	Q	Q
JAPAN		325,816	407,845	516,583	615,262	702,365
	Tons	94,055	115,791	153,786	189,034	222,264
U. K		234,423	272,904	292,343	315,927	366,535
	Tons	55,710	67,394	85,379	90,043	111,802
GERMANY		263,350	250,805	242,276	312,411	259,882
	Tons	77,972	74,970	76,669	101,905	89,932
NETHERLANDS		98,513	96,282	129,770	152,096	162,105
	Tons	26,031	28,636	42,013	50,899	54,924
CANADA		82,012	75,130	91,948	102,931	101,046
	Tons	19,869	19,786	23,858	27,243	27,193
IRELAND		46,092	56,378	41,708	55,607	59,725
	Tons	10,112	12,050	10,434	14,190	15,777
FRANCE		50,011	50,814	51,063	50,209	53,022
	Tons	11,969	14,252	14,790	14,753	14,874
BELGIUM			51,956	49,843	59,036	65,138
	Tons		13,884	15,962	19,762	22,596
USA,PR,USVI		9,585	17,548	26,928	39,721	42,752
	Tons	2,375	4,963	7,062	10,028	10,527
SPAIN		27,777	28,442	15,496	27,367	29,306
	Tons	9,059	8,922	5,029	9,158	9,957
	<b>V</b>	<b>1,137,579</b>	<b>1,308,104</b>	<b>1,457,958</b>	<b>1,730,567</b>	<b>1,841,876</b>
	<b>Q</b>	<b>307,152</b>	<b>360,648</b>	<b>434,982</b>	<b>527,015</b>	<b>579,846</b>
Trade Analysis System						

### 11.3 TOP TEN EXPORTERS

<b>PRESERVED VEGETABLES</b>						
AMOUNT IN THOUSANDS US DOLLARS						
COUNTRY		1998	1999	2000	2001	2002
	QTY UNIT	V	V	V	V	V
		Q	Q	Q	Q	Q
CHINA		147,684	154,195	167,463	164,362	149,109
	Tons	196,104	232,700	262,070	263,016	233,355
SPAIN		18,991	19,952	24,447	26,147	29,573
	Tons	20,088	21,277	34,135	34,976	40,049
INDIA		24,037	19,526	20,133	18,746	24,942
	Tons	36,358	32,599	33,331	37,867	48,383
NETHERLANDS		16,550	17,406	23,056	21,125	16,358
	Tons	19,816	20,481	21,389	27,279	17,358
MOROCCO		15,696	19,685	18,924	19,443	19,394
	Tons	9,137	13,358	11,900	9,055	8,799
POLAND		16,274	15,863	16,227	15,807	14,886
	Tons	11,031	12,247	12,970	11,663	10,308
TURKEY		14,078	10,436	11,879	12,266	11,916
	Tons	11,296	9,757	11,250	10,265	11,008
MEXICO		10,192	11,907	8,468	11,558	6,904
	Tons	23,873	33,877	81,826	82,893	84,528
USA,PR,USVI		6,337	6,109	5,948	9,867	5,417
	Tons	8,084	5,527	4,630	6,141	3,975
BELGIUM			5,581	6,429	11,431	8,192
	Tons		6,081	6,579	11,890	7,730
	<b>V</b>	<b>269,755</b>	<b>280,660</b>	<b>302,974</b>	<b>310,752</b>	<b>286,691</b>
	<b>Q</b>	<b>335,781</b>	<b>387,904</b>	<b>480,080</b>	<b>495,045</b>	<b>465,493</b>
Trade Analysis System						

**11.4 TOP TEN EXPORTERS**

<b>PRESERVED POULTRY</b>						
VALUE IN THOUSAND US DOLLARS						
COUNTRY		1998	1999	2000	2001	2002
	QTY UNIT	V	V	V	V	V
		Q	Q	Q	Q	Q
CHINA		129,245	182,196	294,736	388,606	465,490
	Tons	44,735	63,146	99,251	128,728	160,065
THILAND		209,711	258,576	322,929	380,065	
	Tons	62,338	75,442	100,615	125,107	
NETHERLANDS		179,303	211,057	198,902	238,970	226,717
	Tons	45,785	55,431	61,269	74,847	68,354
USA,PR,USVI		189,690	161,852	175,752	222,194	185,782
	Tons	78,139	57,022	65,391	108,474	89,774
FRANCE		170,895	204,134	179,651	175,097	170,115
	Tons	51,290	63,989	55,276	57,101	49,346
GERMANY		89,054	92,819	86,981	132,035	150,993
	Tons	22,100	23,991	25,286	37,913	45,863
IRELAND		66,929	75,361	82,030	112,994	153,029
	Tons	15,466	17,502	22,675	36,101	44,586
BELGIUM			104,263	89,368	101,978	111,940
	Tons		23,091	22,933	24,796	26,223
U.K		76,432	74,789	66,710	79,349	89,230
	Tons	17,569	23,597	17,000	17,049	20,749
DENMARK		52,429	33,345	30,323	48,838	55,290
	Tons	10,595	7,708	12,373	15,520	16,126
	<b>V</b>	<b>1,163,688</b>	<b>1,398,392</b>	<b>1,537,382</b>	<b>1,880,126</b>	<b>1,608,586</b>
	<b>Q</b>	<b>348,017</b>	<b>410,919</b>	<b>482,069</b>	<b>625,636</b>	<b>521,086</b>
Trade Analysis System						