PROJECT REPORT

Of

DEHYDRATED VEGETABLES

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Dehydrated Vegetables**

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

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PROJECT REPORT

ON

DEHYDTRATED VEGETABLES

Dehydrated vegetables

INTRODUCTION

Vegetables are available during specific seasons and they are perishable. Hence, majority of them are not available during off-season. To overcome this problem, dehydration technique has been developed by which vegetables in dehydrated form are preserved for a longer period and are made available during off-season. With this technology, certain high value and popular vegetables can be profitably sold.

PRODUCTS

1. Applications

Dehydration technology is well established and proven. Certain products like green peas, cauliflower, carrots, spinach etc. command good prices during lean and off-season. Onion and garlic powder also has good demand round the year but these products are generally available throughout the year and powder is somehow not favored by the Indians. Hence, this note does not include onion and garlic powder.

2. Availability of know-how, Quality Standards and Compliance

CFTRI, Mysore, has successfully developed the technical know-how. BIS has specified quality standards for different vegetables and depending upon the exact product mix, the promoters may like to adhere to them. Compliance with PFA Act is mandatory.

3. Legal issues regarding industry

As per guideline of Food safety and standard Authority of India , the unit is required to register and obtain the License under the provisions of CENTRAL LICENSING [Food Safety & Standards (Licensing & Registration of Food Businesses) Regulations 2011; Schedule I, Regulation 2.1.2(3)]

4. Proposed Location

Unit may be located in suburban area of the city or nearer to Krishi Utpadan Mandi to have easy access to the sellers of Raw material at economic rates.

MARKET POTENTIAL

1 Demand and Supply

Food habits of Indians are such that most of the households prepare vegetables every day. Due to climatic conditions and types of soil, many vegetables are cultivated throughout the year. The major limitation of bulk of the green vegetables is they are grown only during predetermined season which lasts for 3-4 months and thus their availability during rest of the months is a major problem. Hence, if they are made available during this period, then they command premium. Green house method enables cultivation of any vegetable during any season but calls for huge investment which affects the economic viability. Dehydration technique is, therefore, preferred.

2.Marketing Strategy

With growing incomes, changing lifestyles and hectic daily schedule, market for dehydrated vegetables is growing especially in urban areas. Proper placement of products in the departmental stores, super markets, shopping malls etc. backed-up by publicity is the key to success. It is also possible to have tie-up with exclusive restaurants, star hotels, renowned caterers etc. for regular supplies

MANUFACTURING PROCESS

This note primarily considers dehydration of cabbage, cauliflower, spinach and carrots. Other suitable vegetables can also be thought of. In case of cauliflowers; they are chopped to make small pieces and washed. Then they are blanched and dried in cold air. Spinach leaves are separated from the stalk, washed and dried in the drier. As regards carrots, they are washed, scrapped and cubed after washing. Cubes are then blanched and dried. These dehydrated vegetables are then packed and stored carefully. Packing is very critical as any fungal growth would damage the product. Process and weight loss varies from vegetable to vegetable but on an average it is 25% as the vegetables are dehydrated. In other words, the input-output ratio is 4:1.

CAPITAL INPUTS

1.Land and Building

The plot of about 500 sq.mtrs. is required as the built-up area requirement will be 220 sq.mtrs. Storage of vegetables would require area of 35 sq.mtrs, whereas packing room and finished goods' godown will occupy about 60 sq.mtrs. Vegetable washing tanks could be constructed adjacent to the raw material godown with asbestos sheets. Main production hall will be of around 100 sq.mtrs. and balance 25 sq.mtrs. could be allotted for office and laboratory. The entire area has to be neat and clean and completely hygienic.The building has to be of superior quality to maintain hygienic standards.

Initially it is recommended to start the activity in rented premises instead of owned premises to avoid huge investment.

2. Plant and Machinery

Easy and regular availability of fresh vegetables during each season and nearby urban markets are the critical aspects for arriving at the installed production capacity. For the purpose of this note and with a view to minimising initial capital investment, the rated capacity is taken at 150 tonnes with 1 shift working and 300 working days. For this following machines shall be required.

Miscellaneous Assets

Other assets like storage racks and bins, aluminium top working tables, exhaust fans, furniture and fixtures, electrical, plastic trays/jars/tubs, office equipments etc. shall be required

Utilities

Power requirement shall be HP whereas water required for washing of vegetables and for potable and sanitary purposes will be 2000 ltrs. per day.

Raw Material

The all-important raw material will obviously be fresh vegetables. Hence, the location of the project has to be nearer to vegetable growing areas. Depending upon the availability of vegetables during different seasons, the product-mix may change. Likewise, the prices of raw materials would also change depending upon the exact product mix and crop pattern. Even at 100% capacity utilization, the monthly requirement of different vegetables, considering an average process and weight loss of 50% ,will be about 25 tonnes. This is not a very large quantity. Prices of vegetables vary and the product-mix may also change according to quantum of crop and consumer preferences. Hence, it is not feasible to arrive at variety-wise vegetables required every month and their individual prices. Therefore, average price of each vegetable is taken at Rs.15,000/- per ton. The all-important packing materials will be plastic bags made from suitable grade plastic, corrugated boxes, box strapping, labels etc

PROJECT AT A GLANCE

1	Name of the Entreprenuer		XXXXXXX		
2	Constitution (legal Status)		XXXXXXX		
3	Father's/Spouce's Name		XXXXXXXX		
4	Unit Address		XXXXXXXX		
			Taluk/Block:		
			District :	XXXXX	
			Pin:	XXXXX	State:
			E-Mail	XXXXX	
			Mobile	XXXXX	
5	Product and By Product	:	**Dehydrated Vegetables**		
6	Name of the project / business activity proposed		**Dehydrated Vegetables**		
7	Cost of Project	:	Rs25.00lac		
8	Means of Finance				
	Term Loan		Rs.17.84 Lacs		
	KVIC Margin Money	-	As per Project Eligibility		
	Own Capital		Rs.2.5 Lacs		
	Working Capital		Rs.4.66 Lacs		
9	Debt Service Coverage Ratio	:	3.98		
10	Pay Back Period	:	5	Years	
11	Project Implementation Period	:	8	Months	
12	Break Even Point	:	28%		
13	Employment	:	10	Persons	
14	Power Requirement	:	50.00	HP	
15	Major Raw materials	:	Fresh cabbage, cauliflower, spinach and carrots etc		
16	Estimated Annual Sales Turnover	:	81.00	Lacs	
16	Detailed Cost of Project & Means of Finance				

COST OF PROJECT

(Rs. In Lacs)

Particulars	Amount
Land 500 Sqmt	Leased
Building /shed (200Sqmt) Rented	-
Plant & Machinery	18.80
Furniture & Fixtures	0.50
Pre-operative Expenses	0.52
Working Capital Requirement	5.18
Total	**25.00**

MEANS OF FINANCE

Particulars	Amount
Own Contribution @10%	2.50
Term Loan	17.84
Workign Capital Finance	4.66
Total	**25.00**

	General	**Special**
Beneficiary's Margin Money (% of Project Cost)	10%	5%

PLANT & MACHINERY

PARTICULARS	QTY.	RATE	AMOUNT IN RS.
Washing tanks with sets of cubers, slicers, etc.	1	150,000.00	150,000.00
Blanching tank with thermostat control	1	350,000.00	350,000.00
Stacking trays for vegetables	--	30,000.00	30,000.00
Pre-cooling facility for vegetables	--	225,000.00	225,000.00
Vibratory shakers	1	75,000.00	75,000.00
Fluidized bed dryer to dehydrate vegetables complete withall attachments and electricals	1	500,000.00	500,000.00
Hot-water boiler with attachments	1	200,000.00	200,000.00
Automatic form, fill and seal machines complete with attachments	2	200,000.00	200,000.00
Testing equipments	--	75,000.00	75,000.00
Electrification	--	75,000.00	75,000.00
			1,880,000.00

PROJECTED BALANCE SHEET

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
SOURCES OF FUND					
Capital Account	2.50	2.50	2.50	2.50	2.50
Retained Profit	13.59	26.47	41.16	58.97	79.77
Term Loan	17.84	13.38	8.92	4.46	1.13
Cash Credit	4.66	4.66	4.66	4.66	4.66
Sundry Creditors	3.16	3.69	4.21	4.74	5.27
Provisions & Other Liab	0.36	0.40	0.44	0.48	0.53
TOTAL :	**42.11**	**51.09**	**61.89**	**75.82**	**93.86**
APPLICATION OF FUND					
Fixed Assets (Gross)	19.30	19.30	19.30	19.30	19.30
Gross Dep.	2.85	5.29	7.37	9.14	10.65
Net Fixed Assets	16.46	14.01	11.93	10.16	8.65
Current Assets					
Sundry Debtors	4.05	4.69	5.37	6.04	6.72
Stock in Hand	4.29	9.05	10.34	11.63	12.93
Cash and Bank	14.81	20.59	31.23	44.66	61.90
Deposits & Advances	2.50	2.75	3.03	3.33	3.66
TOTAL :	**42.11**	**51.09**	**61.89**	**75.82**	**93.86**
	-	-	-	-	-

PROJECTED PROFITABILITY STATEMENT

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
A) SALES					
Gross Sale	81.00	93.83	107.33	120.83	134.33
Total (A)	**81.00**	**93.83**	**107.33**	**120.83**	**134.33**
B) COST OF SALES					
Raw Mateiral Consumed	45.15	52.68	60.20	67.73	75.25
Elecricity Expenses	4.30	5.01	5.73	6.45	7.16
Repair & Maintenance	-	0.94	1.07	1.21	1.34
Labour & Wages	5.28	5.81	6.39	7.03	7.73
Depriciation	2.85	2.44	2.08	1.77	1.51
Consumables,packaging and Other Expenses	4.05	4.69	5.37	6.04	6.72
Cost of Production	61.62	71.57	80.84	90.22	99.71
Add: Opening Stock /WIP	-	3.24	3.78	4.32	4.86
Less: Closing Stock /WIP	3.24	3.78	4.32	4.86	5.40
Cost of Sales (B)	58.38	71.03	80.30	89.68	99.17
C) GROSS PROFIT (A-B)	22.62	22.79	27.03	31.15	35.16
	28%	**24%**	**25%**	**26%**	**26%**
D) Bank Interest (Term Loan)	1.54	1.86	1.35	0.83	0.34
Bank Interest (C.C. Limit)	0.54	0.54	0.54	0.54	0.54
E) Salary to Staff	3.83	4.21	4.63	5.10	5.60
F) Selling & Adm Expenses Exp.	1.62	1.88	2.15	2.42	2.69
TOTAL (D+E)	**7.52**	**8.48**	**8.66**	**8.88**	**9.16**
H) NET PROFIT	15.10	14.31	18.37	22.27	25.99
I) Taxation	1.51	1.43	3.67	4.45	5.20
J) PROFIT (After Tax)	13.59	12.88	14.69	17.81	20.79

PROJECTED CASH FLOW STATEMENT

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
SOURCES OF FUND					
Share Capital	2.50	-			
Reserve & Surplus	15.10	14.31	18.37	22.27	25.99
Depriciation & Exp. W/off	2.85	2.44	2.08	1.77	1.51
Increase in Cash Credit	4.66	-	-	-	-
Increase In Term Loan	17.84	-	-	-	-
Increase in Creditors	3.16	0.53	0.53	0.53	0.53
Increase in Provisions	0.36	0.04	0.04	0.04	0.05
TOTAL :	**46.46**	**17.32**	**21.01**	**24.61**	**28.07**
APPLICATION OF FUND					
Increase in Fixed Assets	19.30	-	-	-	-
Increase in Stock	4.29	4.75	1.29	1.29	1.29
Increase in Debtors	4.05	0.64	0.68	0.68	0.68
Increase in Deposits & Adv	2.50	0.25	0.28	0.30	0.33
Repayment of Term Loan	-	4.46	4.46	4.46	3.33
Taxation	1.51	1.43	3.67	4.45	5.20
TOTAL :	**31.65**	**11.54**	**10.38**	**11.18**	**10.83**
Opening Cash & Bank Balance	-	14.81	20.59	31.23	44.66
Add : Surplus	14.81	5.78	10.64	13.42	17.25
Closing Cash & Bank Balance	**14.81**	**20.59**	**31.23**	**44.66**	**61.90**

COMPUTATION OF MANUFACTURING OF DEHYDRATED VEGETABLES

Items to be Manufactured **Dehydrated Vegetables**

Manufacturing Capacity per day	-	0.50	MT
	-		
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		150.00	MT
Year		Capacity	MT
		Utilisation	
IST YEAR		60%	90
IIND YEAR		70%	105
IIIRD YEAR		80%	120
IVTH YEAR		90%	135
VTH YEAR		100%	150

COMPUTATION OF RAW MATERIAL

Item Name		Quantity of	Recovery	Unit Rate of	Total Cost
		Raw Material		/MT	Per Annum (100%)
	100%	MT			
Fresh cabbage, cauliflower, spinach and carrots etc		200.00	100.00%	35,000.00	7,000,000.00
					525,000.00
		-		-	-
				Total (Rounded off in lacs)	7,525,000.00

Annual Consumption cost (In Lacs) 75.25

Raw Material Consumed	Capacity Utilisation	Amount (Rs.)
IST YEAR	60%	45.15
IIND YEAR	70%	52.68
IIIRD YEAR	80%	60.20
IVTH YEAR	90%	67.73
VTH YEAR	100%	75.25

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
Finished Goods					
(7Days requirement)	3.24	3.78	4.32	4.86	5.40
Raw Material					
(30 Days requirement)	1.05	5.27	6.02	6.77	7.53
Closing Stock	**4.29**	**9.05**	**10.34**	**11.63**	**12.93**

COMPUTATION OF WORKING CAPITAL REQUIREMENT

Particulars			Total
			Amount
Stock in Hand			4.29
Sundry Debtors			4.05
		Total	8.34
Sundry Creditors			3.16
Working Capital Requirement			**5.18**
Margin			0.52
Working Capital Finance			**4.66**

BREAK UP OF LABOUR

Particulars		Wages Per Month	No of Employees	Total Salary
Supervisor		12,000.00	1	12,000.00
Skilled Worker		8,000.00	2	16,000.00
Unskilled Worker		6,000.00	4	24,000.00
				40,000.00
Add: 10% Fringe Benefit				4,000.00
Total Labour Cost Per Month				44,000.00
Total Labour Cost for the year (In Rs. Lakhs)			7	5.28

BREAK UP OF SALARY

Particulars		Salary Per Month	No of Employees	Total Salary
Accountant		9,000.00	1	9,000.00
Sales		10,000.00	2	20,000.00
Total Salary Per Month				29,000.00
Add: 10% Fringe Benefit				2,900.00
Total Salary for the month				31,900.00
Total Salary for the year (In Rs. Lakhs)			3	3.83

COMPUTATION OF DEPRECIATION

Description	Land	Building/shed	Plant & Machinery	Furniture	**TOTAL**
Rate of Depreciation		**10.00%**	**15.00%**	**10.00%**	
Opening Balance	Leased	-	-	-	-
Addition	-	-	18.80	0.50	19.30
	-	-	18.80	0.50	19.30
Less : Depreciation	-	-	2.82	0.03	2.85
WDV at end of Ist year	-	-	15.98	0.48	16.46
Additions During The Year	-	-	-	-	-
	-	-	15.98	0.48	16.46
Less : Depreciation	-	-	2.40	0.05	2.44
WDV at end of IInd Year	-	-	13.58	0.43	14.01
Additions During The Year	-	-	-	-	-
	-	-	13.58	0.43	14.01
Less : Depreciation	-	-	2.04	0.04	2.08
WDV at end of IIIrd year	-	-	11.55	0.38	11.93
Additions During The Year	-	-	-	-	-
	-	-	11.55	0.38	11.93
Less : Depreciation	-	-	1.73	0.04	1.77
WDV at end of IV year	-	-	9.81	0.35	10.16
Additions During The Year	-	-	-	-	-
	-	-	9.81	0.35	10.16
Less : Depreciation	-	-	1.47	0.03	1.51
WDV at end of Vth year	-	-	8.34	0.31	8.65

REPAYMENT SCHEDULE OF TERM LOAN 11.5%

Year	Particulars	Amount	Addition	Total	Interest	Repayment	Cl Balance
IST YEAR	Opening Balance						
	Ist Quarter	-	17.84	17.84	-	-	17.84
	Iind Quarter	17.84	-	17.84	0.51	-	17.84
	IIIrd Quarter	17.84	-	17.84	0.51	-	17.84
	Ivth Quarter	17.84	-	17.84	0.51	-	17.84
					1.54	-	
IIND YEAR	Opening Balance						
	Ist Quarter	17.84	-	17.84	0.51	1.11	16.72
	Iind Quarter	16.72	-	16.72	0.48	1.11	15.61
	IIIrd Quarter	15.61	-	15.61	0.45	1.11	14.49
	Ivth Quarter	14.49		14.49	0.42	1.11	13.38
					1.86	4.46	
IIIRD YEAR	Opening Balance						
	Ist Quarter	13.38	-	13.38	0.38	1.11	12.26
	Iind Quarter	12.26	-	12.26	0.35	1.11	11.15
	IIIrd Quarter	11.15	-	11.15	0.32	1.11	10.03
	Ivth Quarter	10.03		10.03	0.29	1.11	8.92
					1.35	4.46	
IVTH YEAR	Opening Balance						
	Ist Quarter	8.92	-	8.92	0.26	1.11	7.80
	Iind Quarter	7.80	-	7.80	0.22	1.11	6.69
	IIIrd Quarter	6.69	-	6.69	0.19	1.11	5.57
	Ivth Quarter	5.57		5.57	0.16	1.11	4.46
					0.83	4.46	
VTH YEAR	Opening Balance						
	Ist Quarter	4.46	-	4.46	0.13	1.11	3.34
	Iind Quarter	3.34	-	3.34	0.10	1.11	2.23
	IIIrd Quarter	2.23	-	2.23	0.06	0.55	1.68
	Ivth Quarter	1.68		1.68	0.05	0.55	1.13
					0.34	3.33	

CALCULATION OF D.S.C.R

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
CASH ACCRUALS	16.43	15.33	16.77	19.58	22.30
Interest on Term Loan	1.54	1.86	1.35	0.83	0.34
Total	17.97	17.18	18.12	20.42	22.64
REPAYMENT					
Instalment of Term Loan	4.46	4.46	4.46	3.33	3.33
Interest on Term Loan	1.54	1.86	1.35	0.83	0.34
Total	6.00	6.32	5.81	4.16	3.67
DEBT SERVICE COVERAGE RAT	**3.00**	**2.72**	**3.12**	**4.90**	**6.17**
AVERAGE D.S.C.R.			**3.98**		

COMPUTATION OF SALE

Particulars	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
Op Stock	-	4.50	5.25	6.00	6.75
Production	90.00	105.00	120.00	135.00	150.00
	90.00	109.50	125.25	141.00	156.75
Less : Closing Stock	4.50	5.25	6.00	6.75	7.50
Net Sale	90.00	104.25	119.25	134.25	149.25
Sale Price per MT (Average)	90,000.00	90,000.00	90,000.00	90,000.00	90,000.00
Sale (in Lacs)	**81.00**	**93.83**	**107.33**	**120.83**	**134.33**

COMPUTATION OF ELECTRICITY

(A) POWER CONNECTION				
Total Working Hour per day		Hours	8	
Electric Load Required		HP	50	
Load Factor			0.7460	
Electricity Charges		per unit	8.00	
Total Working Days			300	
Electricity Charges (8 Hrs Per day)				716,160.00
Add : Minimim Charges (@ 10%)				
(B) DG set				
No. of Working Days			300	days
No of Working Hours			-	Hour per day
Total no of Hour			-	
Diesel Consumption per Hour			8	
Total Consumption of Diesel			-	
Cost of Diesel			65.00	Rs. /Ltr
Total cost of Diesel			-	
Add : Lube Cost @15%			-	
Total			-	
Total cost of Power & Fuel at 100%				7.16
Year		**Capacity**		**Amount**
				(in Lacs)
IST YEAR		60%		4.30
IIND YEAR		70%		5.01
IIIRD YEAR		80%		5.73
IVTH YEAR		90%		6.45
VTH YEAR		100%		7.16

BREAK EVEN POINT ANALYSIS

Year	I	II	III	IV	V
Net Sales & Other Income	81.00	93.83	107.33	120.83	134.33
Less : Op. WIP Goods	-	3.24	3.78	4.32	4.86
Add : Cl. WIP Goods	3.24	3.78	4.32	4.86	5.40
Total Sales	**84.24**	**94.37**	**107.87**	**121.37**	**134.87**
Variable & Semi Variable Exp.					
Raw Material & Tax	45.15	52.68	60.20	67.73	75.25
Electricity Exp/Coal Consumption at 85%	3.65	4.26	4.87	5.48	6.09
Manufacturing Expenses 80%	3.24	4.50	5.15	5.80	6.45
Wages & Salary at 60%	5.46	6.01	6.61	7.27	8.00
Selling & adminstrative Expenses 80%	1.30	1.50	1.72	1.93	2.15
Intt. On Working Capital Loan	0.54	0.54	0.54	0.54	0.54
Total Variable & Semi Variable Exp	**59.34**	**69.49**	**79.09**	**88.75**	**98.47**
Contribution	**24.90**	**24.88**	**28.78**	**32.62**	**36.39**
Fixed & Semi Fixed Expenses					
Manufacturing Expenses 20%	0.81	1.13	1.29	1.45	1.61
Electricity Exp/Coal Consumption at 15%	0.64	0.75	0.86	0.97	1.07
Wages & Salary at 40%	3.64	4.01	4.41	4.85	5.33
Interest on Term Loan	1.54	1.86	1.35	0.83	0.34
Depreciation	2.85	2.44	2.08	1.77	1.51
Selling & adminstrative Expenses 20%	0.32	0.38	0.43	0.48	0.54
Total Fixed Expenses	**9.81**	**10.56**	**10.41**	**10.35**	**10.40**
Capacity Utilization	**60%**	**70%**	**80%**	**90%**	**100%**
OPERATING PROFIT	**15.10**	**14.31**	**18.37**	**22.27**	**25.99**
BREAK EVEN POINT	**24%**	**30%**	**29%**	**29%**	**29%**
BREAK EVEN SALES	**33.17**	**40.07**	**39.02**	**38.52**	**38.54**

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