

Black Garlic Processing & Packaging

[NPCS/5242/23749]

Financial Analysis

Overview on financial analysis

The total cost of the project is estimated at Nu. 9,618,108 excluding 20% of the total cost to be borne by the entrepreneur. During first year only 55% capacity will be utilized, second year 63.25%, third year 75.9% and from fourth year onwards 94.8% of total capacity will be utilized. At 55 % capacity utilization around 2.3 T of corn flakes per year will be produced. It is projected after 10 years of operation of the unit; the cost of the initial investment is recovered.

A statement of cash flow which is concerned with the flow of cash in and out of the business is prepared taking cash inflow parameters including equity, loan from bank and the cash accruals from the sale. Cash outflow is calculated under the applications like increase in fixed assets, for repayment of term loan, preoperative expenses and payment of taxes.

Some assumptions considered under the financial analysis are:

1. The production unit is assumed to work for 8 hours a day for 300 days per annum.
2. The wages for unskilled workers are taken as per prevailing rates in this type of industry.
3. Interest rate for term loan is 7% per annum as per National Cottage and Small Industry Development Bank under the Small Industry Financing of project fund size from Nu. 5 M to Nu. 10 M for 10 years.
4. Costs of machinery and equipment are based on average prices of machinery manufacturers in India.
5. Power cost is calculated at Nu. 1.5 per unit for industrial purposes and that for the fuel is Nu.65 per litre. The cost of water is considered as Nu. 2.95 per unit.
6. Repair and maintenance cost of machines and utilities are taken under as miscellaneous.
7. None of the ETP chemical and lab procedures is required in processing and packaging the product, therefore the cost is nil.
8. Consumable goods not considered
9. Fuel expenses not considered

Prepared by “Niir Project Consultancy Services”

Black Garlic Processing & Packaging

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ANNEXURE: 1 COST OF PROJECT AND MEANS OF FINANCE

All Amounts are in Ngultrum (Nu.)

Particulars	Estimated Amount
Capital Items	3,457,491
Working Capital	
HR Costs	768,000
Administration Costs	177,232
Marketing Cost	156,000
Inventory Cost	969,600
Preliminary expenses	2,426,870
Total Cost	7,955,193
Equity (20%)	1,591,039
Total Project Cost (Nu.)	6,364,154

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Sources of finance

Financing	
Owner's Funding	Estimated Amount
	1,579,039
Total Owners Funding	1,579,039
Loans	
CSI Loan	6,316,154
Total Loans	6,316,154
Total Funding (Nu.)	7,895,193

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ANNEXURE: 2 PROFITABILITY AND NET CASH ACCRUALS

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Total Revenue (A)	3,900,000	4,095,000	4,504,500	5,180,175	6,216,210
Less: Working Capital (B)					
HR Costs	768,000	768,000	768,000	768,000	768,000
Administration Costs	177,232	178,838	180,461	182,099	183,754
Inventory Cost	969,600	1,017,600	1,070,400	1,177,440	1,295,184
Marketing Cost	156,000	156,000	156,000	156,000	156,000
Total (B)	2,070,832	2,120,438	2,174,861	2,283,539	2,402,938

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Less: Depreciation (C)	488,324	488,324	488,324	488,324	488,324
Less: Interest Cost (D)	445,491	413,247	378,747	341,831	302,331
Total (B+C+D)	3,004,646	3,022,009	3,041,931	3,113,694	3,193,593
Gross: A-(B+C+D)	895,354	1,072,991	1,462,569	2,066,481	3,022,617
Less: Tax (25% on gross)	223,838	268,248	365,642	516,620	755,654
Net Profit After Tax (Nu.)	671,515	804,743	1,096,927	1,549,861	2,266,962

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ANNEXURE: 3 ASSESSMENT OF WORKING CAPITAL

Particulars	Year 1	Year 2	Year 3	year 4	Year 5
HR Costs	768,000	768,000	768,000	768,000	768,000
Administration Costs	177,232	178,838	180,461	182,099	183,754
Marketing Cost	969,600	1,017,600	1,070,400	1,177,440	1,295,184
Inventory Cost	156,000	156,000	156,000	156,000	156,000
Total (Nu.)	2,070,832	2,120,438	2,174,861	2,283,539	2,402,938

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ANNEXURE: 4 **SOURCES AND DISPOSITION OF FUNDS**

Disposition of funds

Particulars	Estimated Amount
Capital Items	3,457,491
Working Capital	
HR Costs	768,000
Administration Costs	177,232
Marketing Cost	96,000
Inventory Cost	969,600
Preliminary expenses	2,426,870
Total Cost	7,895,193
Equity (20%)	1,579,039
Total Project Cost(Nu.)	6,316,154

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Sources of finance

Financing	
Owner's Funding	Estimated Amount
	1,579,039
Total Owners Funding	1,579,039
Loans	
CSI LOAN	6,316,154
Total Loans	6,316,154
Total Funding (Nu.)	7,895,193

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ANNEXURE: 5 PROJECTED BALANCE SHEET

Assets	Year 1	Year 2	Year 3	Year 4	Year 5
Capital Items	3,457,491	2,969,167	2,480,844	1,992,520	1,504,196
less: Depreciation	488,324	488,324	488,324	488,324	488,324
total capital items	2,969,167	2,480,844	1,992,520	1,504,196	1,015,873
Cash in hand	51,96,919	59,97,121	70,55,005	85,28,909	106,80,414
Total Assets	8,166,087	8,477,964	9,047,525	10,033,105	11,696,286
Liabilities					
Loans (outstanding)	5,903,533	5,410,668	4,883,302	4,319,021	3,715,240
Profits Transferred from P&L a/c	671,515	804,743	10,96,927	15,49,861	22,66,962

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Owner's Equity	15,91,038.6	22,62,554	30,67,297	41,64,223	57,14,084
Total Liabilities(Nu.)	8,166,087	8,477,964	9,047,525	10,033,105	11,696,286

ROI (Average Fixed Assets)

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Net Profit After Tax	671,515.15	804,743.05	1,096,926.68	1,549,860.67	2,266,962.44
Opening Fixed Assets (Net Block)	-	3,457,491	2,969,167	2,480,844	1,992,520
Closing Fixed Assets (Net Block)	3,457,491	2,969,167	2,480,844	1,992,520	1,504,196
Total (Nu.)	1,728,746	4,942,075	4,209,589	3,477,104	2,744,618
ROI (Average Fixed Assets)	0.39	0.16	0.26	0.45	0.83

ROI (Average Total Assets)

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Net Profit After Tax	671,515.15	804,743.05	1,096,926.68	1,549,860.67	2,266,962.44
Opening total Assets (Net Block)	-	8,166,087	8,477,964	9,047,525	10,033,105
Closing total Assets (Net Block)	8,166,087	8,477,964	9,047,525	10,033,105	11,696,286
	4,083,043	12,405,069	13,001,727	14,064,078	15,881,248
ROI (Average Total Assets)	0.16	0.06	0.08	0.11	0.14

RONW (Average of Investment)

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Net Profit After Tax	671515.15	804743.05	1096926.68	154986 0.67	2266962.4 4
Opening Investment (Net Block)	-	7,955,193	7,955,193	7,955,1 93	7,955,193
Closing investment (Net Block)	7,955,193	7,955,193	7,955,193	7,955,1 93	7,955,193
Total	3,977,597	11,932,790	11,932,790	11,932, 790	11,932,79 0
ROI (Average Fixed Assets)	0.17	0.07	0.09	0.13	0.19

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ANNEXURE: 6 PROFITABILITY RATIOS

Debt Service Coverage Ratio (DSCR)

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Profit Before Tax	895,353.5 4	1,072,990 .73	1,462,568 .91	2,066,480 .90	3,022,616 .59
Debts (Term Loans)	5,903,532. 80	5,410,667 .68	4,883,302 .01	4,319,020 .74	3,715,239 .78
Debt Service Coverage Ratio	0.15	0.20	0.30	0.48	0.81

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Debt Equity Ratio (DER)

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Debt (Term Loans)	5,903,532.80	5,410,667.68	4,883,302.01	4,319,020.74	3,715,239.78
Shareholder's equity	1,579,038.60	1,579,038.60	1,579,038.60	1,579,038.60	1,579,038.60
Debt Equity Ratio	3.74	3.43	3.09	2.74	2.35

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ANNEXURE: 7 BREAK-EVEN ANALYSIS

Break Even Point

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Fixed expenses					
Admin expenses & Marketing expenses	190,232.00	334,838.32	336,460.70	338,099.31	339,754.30
Depreciation	2,767,167.35	2,278,843.70	1,790,520.05	1,302,196.40	813,872.75
Total fixed cost (A)	2,957,399.35	2,613,682.02	2,126,980.75	1,640,295.71	1,153,627.05
Number of units sold	2,100.00	2,205.00	2,425.50	2,789.33	3,347.19
Total sales value	3,900,000.00	4,095,000.00	4,504,500.00	5,180,175.00	6,216,210.00
Total cost of production	2,070,832.00	2,120,438.32	2,174,860.70	2,283,539.31	2,402,938.30
Total contribution	1,829,168.00	1,974,561.68	2,329,639.30	2,896,635.69	3,813,271.70
Contribution per sold(B)	871.03	895.49	960.48	1,038.47	1,139.25
Break Even Point in units(A/B)	3,395.28	2,918.71	2,214.50	1,579.53	1,012.62

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Profit Volume Ratio	Year 1	Year 2	Year 3	Year 4	Year 5
Sale value	3,900,000	4,095,000	4,504,500	5,180,175	6,216,210
Cost of production	2,070,832	2,120,438	2,174,861	2,283,539	2,402,938
Contribution	1,829,168	1,974,562	2,329,639	2,896,636	3,813,272
Break Even Point	46.90%	48.20%	51.70%	55.90%	61.30%

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ANNEXURE: 9 SHAREHOLDING PATTERN AND STAKE STATUS

Total Cost	7,955,193
Equity (20%)	1,591,039
Total Project Cost	6,364,154

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ANNEXURE: 10 QUANTITATIVE DETAILS-OUTPUT/SALES/STOCKS

Achievable Efficiency Yield % of Product

Output	Production in kg					
	Monthly	1 st year	2 nd year	3 rd year	4 th year	5 th year
Actual Yield	163	1,950	2,145	2,467	2,960	3,700
Theoretical Yield	350	4,200	4,200	4,200	4,200	4,200
Yield percentage (%)		46.4	51.1	58.7	70.5	88.1

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Expected Sales /Revenue/ Income of Product

Products	Unit price	Qty	Demand Forecast					
			Monthly	Year 1	Year 2	Year 3	Year 4	Year 5
Black Garlic (250 gms)	1,250	200	250,000	3,000,000	3,150,000	3,307,500	3,472,875	3,646,518.75
Black Garlic (500 gms)	2,500	200	500,000	6,000,000	6,300,000	6,615,000	6,945,750	7,293,037.50
Total (Nu.)			750,000	9,000,000	9,450,000	9,922,500	10,418,625	10,939,556.25

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ANNEXURE: 11

PRODUCT WISE DOMESTIC SALES REALIZATION

Product	Production qty	Unit price	Estimated sales				
			Monthly	Year 1	Year 2	Year 3	Year 4
250g black garlic	200	1,250	250,000	3,000,000	3,090,000	3,244,500	3,406,725
500g black garlic	200	2,500	500,000	6,000,000	6,180,000	6,489,000	6,813,450
Total sales			750,000	9,000,000	9,270,000	9,733,500	10,220,175
Domestic Sale							
250g black garlic	100	1,250	125,000	1,500,000	1,545,000	1,622,250	1,703,363
500g black garlic	100	2,500	250,000	3,000,000	3,090,000	3,244,500	3,406,725
Total domestic sale (Nu.)				4,500,000	4,635,000	4,866,750	5,110,088

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ANNEXURE: 12 TOTAL RAW

Material cost

Items	Units	Qty	Price	Cost					
				Monthly	Year 1	Year 2	Year 3	Year 4	Year 5
Garlic	kg	200	200	40,000	480,000	528,000	580,800	638,880	702,768
cans	pieces	600	60	36,000	432,000	432,000	432,000	475,200	522,720
stickers	pieces	600	8	4,800	57,600	57,600	57,600	63,360	69,696
Total (Nu.)				969,600	1,017,600	1,070,400	1,177,440	1,295,184	

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ANNEXURE: 13 RAW MATERIAL COST PER UNIT

Total	Units	Qty	Price
Garlic	kg	200	200
cans	pieces	600	60
Stickers	pieces	600	8
Total (Nu.)			268

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ANNEXURE: 14 PACKING MATERIAL COST

Sl.no	Particulars	Units	Price
1	cans	pieces	60
2	Stickers	pieces	8
Total (Nu.)			68

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ANNEXURE: 15 PACKING MATERIAL COST PER UNIT

Sl.no	Particulars	Units	Qty	Price
1	cans	pieces	1	60
2	Stickers	pieces	1	8

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ANNEXURE: 16 EMPLOYEE EXPENSES

Positions	Estimated Salary					
	Monthly	Year 1	Year 2	Year 3	Year 4	Year 5
Operator	11,000	132,000	132,000	132,000	132,000	132,000
Factory Workers	10,000	120,000	120,000	120,000	120,000	120,000
Manager	20,000	240,000	240,000	240,000	240,000	240,000
Driver	10,000	120,000	120,000	120,000	120,000	120,000
Accountant	13,000	156,000	156,000	156,000	156,000	156,000
Total (Nu.)		768,000	768,000	768,000	768,000	768,000

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ANNEXURE: 17

POWER/ ELECTRICITY EXPENSES

Particulars	Estimated cost					
	Monthly	Year 1	Year 2	Year 3	Year 4	Year 5
Telephone bill	500	6,000	6,060	6,121	6,182	6,244
Internet charges	300	3,600	3,636	3,672	3,709	3,746
Electricity bill	8,586	103,032	104,062	105,103	106,154	107,216
Total (Nu.)		112,632	113,758	114,896	116,045	117,205

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ANNEXURE: 18 ROYALTIES & OTHER CHARGES

Particulars	Estimated cost					
	Monthly	Year 1	Year 2	Year 3	Year 4	Year 5
Miscellaneous expenses	3,000	36,000	36,360	36,723.6	37,090.83	37,461.74
Total cost	3,000	36,000	36,360	36,723.60	37,090.83	37,461.74

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ANNEXURE: 19 REPAIRS AND MAINTENANCE EXPENSES

Sl. No	Description	Estimated Cost				
		Year 1	Year 2	Year 3	Year 4	Year 5
1	Expenses on painting, repair and maintenance	300,000	330,000	363,000	399,300	439,230
2	Computer and peripherals repairs	5,000	5,500	6,050	6,655	7,321
3	Equipment Repairs	5,000	5,500	6,050	6,655	7,321
4	Others	1,000	1,100	1,210	1,331	1,464
Total expenses (Nu.)		311,000	342,100	376,310	413,941	455,335

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ANNEXURE: 20 ADMINISTRATIVE EXPENSES

Particulars	Estimated cost					
	Monthly	Year 1	Year 2	Year 3	Year 4	Year5
Telephone bill	500	6,000	6,060	6,121	6,182	6,244
Internet charges	300	3,600	3,636	3,672	3,709	3,746
Office stationaries	1,000	12,000	12,120	12,241	12,364	12,487
Miscellaneous expenses	3,000	36,000	36,360	36,724	37,091	37,462
Water bill	300	3,600	3,600	3,600	3,600	3,600
Storing boxes	13,000	13,000	13,000	13,000	13,000	13,000
Electricity bill	8,586	103,032	104,062	105,103	106,154	107,216
Total (Nu.)		177,232	178,838	180,461	182,099	183,754

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ANNEXURE: 21 SELLING EXPENSES

Particulars	Estimated Cost					
	Monthly	Year 1	Year 2	Year 3	Year 4	Year 5
Advertisement						
Television	5,000	60,000	60,000	60,000	60,000	60,000
Newspapers	3,000	36,000	36,000	36,000	36,000	36,000
Social Media						
Facebook	-	-	-	-	-	-
Instagram	-	-	-	-	-	-
Transportation expenses	5,000	60,000	60,000	60,000	60,000	60,000

Total (Nu.)	13,000	156,000	156,000	156,000	156,000	156,000
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ANNEXURE: 22 DEPRECIATION CHARGES (TOTAL)

Capital items	Cost	Depreciation Amount	End Value				
			Year 1	Year 2	Year 3	Year 4	Year 5
Building	2,339,382	350,907	1,988,475	1,637,567	1,286,660	935,753	584,846
Can seamer machine	58,266	8,740	49,526	40,786	32,046	23,306	14,567
Fermenting machine	723,843	108,576	615,267	506,690	398,114	289,537	180,961
Table	3,000	450	2,550	2,100	1,650	1,200	750
Chairs	1,000	150	850	700	550	400	250
Computer	30,000	4,500	25,500	21,000	16,500	12,000	7,500
Marketing van	100,000	15,000	85,000	70,000	55,000	40,000	25,000
Total Fixed Assets (Nu.)	3,255,491	488,324	2,767,167	2,278,844	1,790,520	1,302,196	813,873

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ANNEXURE: 23 DEPRECIATION CHARGES

Capital items	Cost	Depreciation Amount	End Value				
			Year 1	Year 2	Year 3	Year 4	Year 5
Building	2,339,382	350907.3	1,988,475	1,637,567	1,286,660	935,753	584,846
Can seamer machine	58,266	8739.9	49,526	40,786	32,046	23,306	14,567
Fermenting machine	723,843	108,576.45	615,267	506,690	398,114	289,537	180,961
Computer	30,000	4,500	25,500	21,000	16,500	12,000	7,500
Marketing van	100,000	15,000	85,000	70,000	55,000	40,000	25,000
Total Fixed Assets (Nu.)	3,251,491	487,724	2,763,767	2,276,044	1,788,320	1,300,596	812,873

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ANNEXURE: 24

INTEREST AND REPAYMENTS- TERMS OF THE LOANS

Year	Payment due	Interest	Principal	Balance
0				6,364,154
1	906,112	445,491	460,622	5,903,533
2	906,112	413,247	492,865	5,410,668
3	906,112	378,747	527,366	4,883,302
4	906,112	341,831	564,281	4,319,021
5	906,112	302,331	603,781	3,715,240
6	906,112	260,067	646,046	3,069,194
7	906,112	214,844	691,269	2,377,925
8	906,112	166,455	739,658	1,638,268
9	906,112	114,679	791,434	846,834
10	906,112	59,278	846,834	-

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ANNEXURE: 25 TAX ON PROFITS

Gross profit	1,363,740	1,479,181	1,678,455
Less: Tax (30% on gross)	409,122	443,754	503,536
Net Profit After Tax (Nu.)	954,618	1,035,426	1,174,918

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ANNEXURE: 26 PROJECTED PAY-BACK PERIOD AND IRR

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Total investment	7,955,193				
Cash flow	51,96,919.20	59,97,120.79	70,55,005	85,28,908	106,80,413
Payback period	1.53				

Internal rate of return

Year 4	8,528,909	
Year5	10,680,414	
Internal Rate of Return	73.54%	
discount rate	5%	
Present value of future cash flow		31,868,528.86
Initial investment		-7955193
NPV		39823721.86
IRR		73.54%