



MODEL PROJECT REPORT



PROJECT REPORT ON ALOVERA GEL

SWAVALAMBI BHARAT ABHIYAN

PROJECT AT A GLANCE

- 1 Name of the Entrepreneur : xxxxxxxxx
- 2 Constitution (legal Status) : xxxxxxxxx
- 3 Father / Spouse Name : xxxxxxxxx
- 4 Unit Address : xxxxxxxxxxxxxxxxxxxxx
- District : xxxxxx
- Pin: xxxxxx
- Mobile : xxxxxx
- State: xxxxxxxxx
- 5 Product and By Product : ALOEVERA GEL
- 6 Name of the project / business activity proposed : ALOEVERA GEL MANUFACTURING UNIT
- 7 Cost of Project : Rs.24.83 Lakhs
- 8 Means of Finance
 - Term Loan Rs.19.35 Lakhs
 - Own Capital Rs.2.48 Lakhs
 - Working capital Rs.3 Lakhs
- 9 Debt Service Coverage Ratio : 2.27
- 10 Pay Back Period : 5 Years
- 11 Project Implementation Period : 5-6 Months
- 12 Break Even Point : 28%
- 13 Employment : 13 Persons
- 14 Power Requirement : 45.00 HP
- 15 Major Raw materials : Aloe vera leaves, Calcium Hypochlorite, Carbopol, Aristoflex , Packing material
- 16 Estimated Annual Sales Turnover (Max Capacity) : 112.96 Lakhs
- 17 Detailed Cost of Project & Means of Finance

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
Land	Own/Rented
Building /Shed 500 Sq ft	2.00
Plant & Machinery	18.00
Furniture & Fixtures	1.50
Working Capital	3.33
Total	24.83

MEANS OF FINANCE

Particulars	Amount
Own Contribution	2.48
Working Capital(Finance)	3.00
Term Loan	19.35
Total	24.83

ALOEVERA GEL MANUFACTURING

Introduction: Aloe Vera is a tropical or subtropical plant characterized by lance-shaped leaves with jagged edges and sharp points. Aloe Vera contains two major liquid sources, yellow latex (exudates) and the clear gel (mucilage). The gel consists primarily of water and the rest includes various vitamins, amino acids, enzymes, hormones, minerals and sugars, most of which are found in the human body. Aloe leaves secrete a clear gel that when broken off from the rest of the plant that can be applied topically to heal wounds and soothe skin. Aloe Vera Gel is one of the products prepared from aloe vera itself. Aloe vera Gel has very good medicinal value for external use for sunburning and pain killer. It has various medicinal values which make it very good commercial value. Aloe Vera Gel, because of its widespread popularity, has become an ingredient in a wide variety of cosmetic products, including night creams, soaps, shampoos, suntan lotions, and cleansers. Aloe Vera is widely used for its healing and restorative properties. Aloe Vera gel is widely used in the food industry, cosmetic and toiletries industry, and the pharmaceutical industry. Aloe vera gel is a most important product that can be produced from aloe vera leaves. The item has both consumer and industrial demand.



Uses & Market Potential: Increasing use of aloe vera gel in skin care products is the major driving factor of aloe vera gel market growth. Additionally, aloe vera gel has different type of beneficial properties anti-inflammatory, acne removing, anti-oxidation, herbal, and several others it helps to increase the aloe vera gel market. Aloe vera gel is easy to available in mall, medical stores, etc. most of peoples are rapidly changes their preferences towards the healthy life style such as using natural ingredient-based cosmetics in recent years. Aloe vera gel is also a vital product for constipation. The demand within the global market for aloe vera gel is projected to escalate at the back of the growing popularity of herbal cosmetics. The global market for aloe vera gel is estimated to grow at a CAGR of 7.8% by value and 7.3% by volume during the forecast period 2018-2027.

Product:

Natural Aloe Vera Gel

Raw Material:

1. Aloe Vera Leaves
2. Calcium Hypochlorite
3. Carbopol
4. Aristroflex
5. Packing Materials

Raw Material Requirement:

S No.	Raw Material	Quantity	Rate	Value
1.	Aloe vera leaves	100 tonne	18000	5400000
2.	Calcium Hypochlorite	400 kg	140	168000
3.	Carbopol	1500 kg	2000	10000000
4.	Aristroflex	660 kg	4000	8000000
5.	Packing material(100 ml tubes)	300000 pcs	2	1800000

Manufacturing Process:

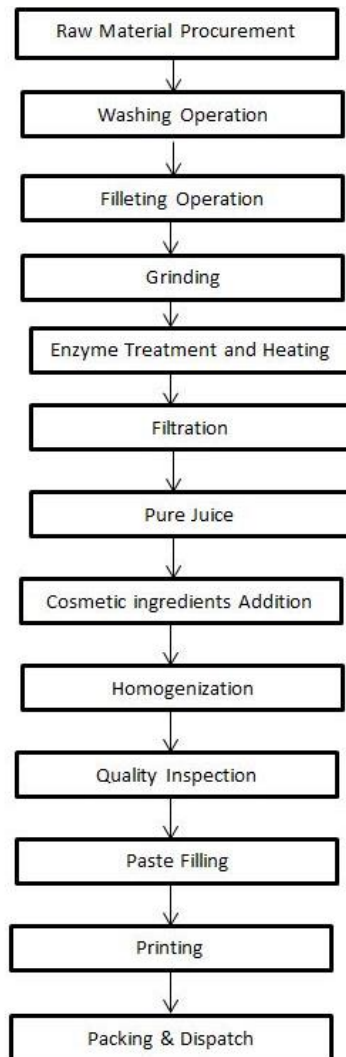


Fig. 1 – Process Flowchart

The fresh harvested aloe Vera leaves are procured from the local farmer. The timing of the process is important part as leaves show losses of biological activity; beginning at six hours following harvest when the leaves are stored at ambient temperature. In the first step, the leaves are fed into washing unit to

remove dirt, farm yard waste, aloin content from the leaves. This is a 4 stage washing process.

At first stage, water is filled inside steel tanks from pump and leaves are allowed to soak the water for 90 minutes. Along with the soaking in water dirt is removed by brush from the surface of leaves manually by hand or brush. In second stage, the leaves are fed into wash tank filled with mineral water. The mineral water used for cleaning is UV filtered and ozone treated. Calcium hypochlorite is also added in the water of about 0.1 % w/v for disinfection. All the leaves were carefully observed and any infected or damaged leaves were immediately discarded at this stage.

In third stage the aloe vera leaves were again cut at about 1½ inch from the apex. The leaves were then cut in to two or more parts longitudinally, which were easy to handle are cleaned in agitated water. After this, in fourth stage the leaves are cleaned in hot water at 50 °C temperature for 30 minutes. At this stage the total aloin content is removed from leaves. Water heater is used to heat the water.

After this, the sides of the leaves are cut by ½ inch manually using knives. In the next step, Aloe vera leaves are fed into Aloe Vera leaf extractor to remove the upper and lower layer of the leaves to produce fresh gel. After this, the fresh gel is fed into juicer to that grinds the gel to produce juice. The juice obtained is fed into storage tanks through pumps.

In the next step, the juice is heated to 50 -70 °C temperature and pectolytic enzyme is added into the juice in an amount of 0.06 % w/v. Second class preservatives are also added at this stage. Heating is done for 20 – 25 minutes. After this, the Aloe Vera juice is stored in tank for 12 hours to reduce the viscosity of the juice. After this, juice is filtered to remove foreign materials.

In the next step, the aloe vera juice is filled inside storage tanks. From the storage tanks the juice is transferred into homogenizer with the help of pump. Caropol (2% by wt.) and Aristroflex (1% by wt.) are added inside the aloe vera

juice and rotated uniformly at high rpm. The mixture is thoroughly stirred for 45 to 60 minutes till fine emulsion of gel is not formed.

In the next step, bottles are washed using heated mineral water and dried properly. The gel is filled inside the bottle using filling machine in desired quantity. After this, the bottles are packed and dispatched as per required quantity.

Area:

The industrial setup requires space for Inventory, workshop or manufacturing area, space for power supply utilities and auxiliary like Generator setup. Also some of the area of building is required for office staff facilities, documentation, office furniture, etc. Thus, the approximate total area required for complete industrial setup is 1000 to 1200 Sqft. Civil work cost will be around 2 Lac Rs. (Approx.)

Machines:

- 1. Aloe Vera Washing Unit** – This unit contains tanks filled with cold and hot water to thoroughly wash the harvested leaves of Aloe Vera.



- 2. Ultrasound Sterilizer** – This machine is used for cleaning the aloe Vera leaves to remove any soil or dust particles by creating water agitation.



- 3. Aloe Vera Leaf Pulp Removing Machine** – This machine is used to remove the outer pulp of Aloe Vera leaves without damaging the inner gel.



4. **Juicer** – This is high speed rotating machine that removes the juice from the pulp removed leaves gel.



5. **Mixing Tank** – The mixing tanks are used to store juice while adding preservatives and heating purpose while enzyme addition.



- 6. Homogenizer** –This machine is used to make the uniform concentration of Aloe Vera juice by reducing its viscosity. This machine has a stirrer that rotates at sufficient rpm.



- 7. Filter** –This machine is used for primary and secondary filtration of aloe vera juice to remove impurities.



- 8. Paste Filling Machine** – This machine is used to fill the paste and seal the tube as per required quantity.



Equipments:

Storage Tanks –The tanks are used to store the crude oil during processing phase and filtered oil.



Pump–Pumps are used to transfer the oil from crude oil tank to filter cloth.



Conveyor – It is used to transfer the material from one work station to other work station. Rollers are mounted to feed the component in forward direction.



Bins –Bins are used to store finished aluminium foil containers.



Table –Tables are used to hold the leaves while handling.



Cost of Machines:

S No.	Machine	Unit	Price
1.	Aloe vera leaves washing unit	1	250000
2.	Ultrasound sterilizer	1	250000
3.	Aloevera leaf pulp removing machine(Capacity 125kg/hr.)	1	300000
4.	Juicer(Capacity 125 kg pulp per hr.)	1	40000
5.	Mixing Tank(Capacity 500 ltr.)	1	175000
6.	Homogenizer	1	150000
7.	Filter	1	150000
8.	Paste filling machine	1	125000
9.	Conveyor	1	150000
10.	Storage Tank(Capacity 500 Ltr.)	1	100000
11.	Table for cutting leaves	1	100000
12.	Other machines & equipments		10000

Power Requirement –The power consumption required to run all the machinery could be approximated as 45hp.

Manpower Requirement- There are requirement of skilled machine operators to run the machine set. Experience quality engineers are required for desired quality control. Some helpers are also required to transfer the material from one work station to other. Office staffs are required to maintain the documentation. The approximate manpower required is 13 including 1 Supervisor, 3 Plant operator and 3 unskilled worker 3 , 2 Helper, 1 Security guard. 3 Skilled worker including Accountant, Manager and Sales person.

Bank Term Loan: Rate of Interest is assumed to be at 11%

Depreciation: Depreciation has been calculated as per the Provisions of Income Tax Act, 1961

Approvals & Registration Requirement:

Basic registration required in this project:

- GST Registration
- Udyog Aadhar Registration (Optional)
- Choice of a Brand Name of the product and secure the name with Trademark if require

Implementation Schedule:

S.No.	Activity	Time required
1.	Acquisition of premises	1-2 Months
2.	Procurement & installation of Plant & Machinery	1-2 Months
3.	Arrangement of Finance	1.5-2 Months
4.	Requirement of required Manpower	1 Month
5.	Commercial Trial Runs	1 Month
	Total time Required (some activities shall run concurrently)	5-6 Months

<u>PROJECTED CASH FLOW STATEMENT</u>					
PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Own Contribution	2.48	-			
Reserve & Surplus	5.26	7.36	10.13	13.53	17.41
Depreciation & Exp. W/ off	3.05	2.61	2.23	1.91	1.64
Increase In Cash Credit	3.00				
Increase In Term Loan	19.35	-	-	-	-
Increase in Creditors	1.22	0.20	0.14	0.14	0.14
TOTAL :	34.37	10.17	12.50	15.59	19.19
<u>APPLICATION OF FUND</u>					
Increase in Fixed Assets	21.50	-	-	-	-
Increase in Stock	1.57	0.25	0.23	0.24	0.25
Increase in Debtors	3.32	0.57	0.55	0.58	0.61
Repayment of Term Loan	2.15	4.30	4.30	4.30	4.30
Taxation	1.32	1.84	2.53	3.38	4.35
Drawings	2.00	3.00	4.00	5.00	6.00
TOTAL :	31.85	9.97	11.61	13.50	15.51
Opening Cash & Bank Balance	-	2.52	2.72	3.61	5.69
Add : Surplus	2.52	0.21	0.89	2.08	3.68
Closing Cash & Bank Balance	2.52	2.72	3.61	5.69	9.37

PROJECTED BALANCE SHEET					
PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Capital Account					
Opening Balance	-	4.43	6.95	10.55	15.70
Add: Additions	2.48	-	-	-	-
Add: Net Profit	3.95	5.52	7.59	10.15	13.06
Less: Drawings	2.00	3.00	4.00	5.00	6.00
Closing Balance	4.43	6.95	10.55	15.70	22.75
CC Limit	3.00	3.00	3.00	3.00	3.00
Term Loan	17.20	12.90	8.60	4.30	-
Sundry Creditors	1.22	1.42	1.56	1.71	1.85
TOTAL :	25.85	24.27	23.71	24.70	27.60
APPLICATION OF FUND					
Fixed Assets (Gross)	21.50	21.50	21.50	21.50	21.50
Gross Dep.	3.05	5.66	7.89	9.81	11.45
Net Fixed Assets	18.45	15.84	13.61	11.69	10.05
Current Assets					
Sundry Debtors	3.32	3.89	4.45	5.03	5.65
Stock in Hand	1.57	1.82	2.04	2.28	2.53
Cash and Bank	2.52	2.72	3.61	5.69	9.37
TOTAL :	25.85	24.27	23.71	24.70	27.60

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PROJECTED PROFITABILITY STATEMENT					
PARTICULARS	I	II	III	IV	V
A) SALES					
Gross Sale	66.38	77.87	88.97	100.66	112.96
Total (A)	66.38	77.87	88.97	100.66	112.96
B) COST OF SALES					
Raw Material Consumed	36.54	42.63	46.89	51.16	55.42
Electricity Expenses	2.96	3.29	3.62	3.95	4.28
Repair & Maintenance	3.32	4.67	6.67	8.05	9.04
Labour & Wages	9.32	9.88	10.77	11.85	13.04
Depreciation	3.05	2.61	2.23	1.91	1.64
Cost of Production	55.19	63.09	70.19	76.92	83.41
Add: Opening Stock /WIP	-	0.96	1.11	1.26	1.43
Less: Closing Stock /WIP	0.96	1.11	1.26	1.43	1.60
Cost of Sales (B)	54.24	62.94	70.03	76.76	83.23
C) GROSS PROFIT (A-B)	12.14	14.93	18.93	23.90	29.72
	18.29%	19.18%	21.28%	23.75%	26.31%
D) Bank Interest (Term Loan)	2.10	1.71	1.24	0.77	0.30
ii) Interest On Working Capital	0.33	0.33	0.33	0.33	0.33
E) Salary to Staff	3.78	3.97	4.56	5.25	6.04
F) Selling & Adm Expenses Exp.	0.66	1.56	2.67	4.03	5.65
TOTAL (D+E)	6.87	7.57	8.80	10.37	12.31
H) NET PROFIT	5.26	7.36	10.13	13.53	17.41
	7.9%	9.5%	11.4%	13.4%	15.4%
I) Taxation	1.32	1.84	2.53	3.38	4.35
J) PROFIT (After Tax)	3.95	5.52	7.59	10.15	13.06
Raw Material Consumed	Capacity		Amount (Rs.)		
	Utilisation				
I	45%		36.54		
II	50%		42.63	5% Increase in Cost	
III	55%		46.89	5% Increase in Cost	
IV	60%		51.16	5% Increase in Cost	
V	65%		55.42	5% Increase in Cost	

COMPUTATION OF MAKING OF ALOE VERA GEL			
Item to be Manufactured Aloe vera Gel			
Manufacturing Capacity per day		100	Ltr
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		30,000	Ltr
Total Production per Annum		3,00,000	Tubes of 100 ml
Year		Capacity	ALOE VERA GEL
		Utilisation	
I		45%	1,35,000.00
II		50%	1,50,000.00
III		55%	1,65,000.00
IV		60%	1,80,000.00
V		65%	1,95,000.00

COMPUTATION OF RAW MATERIAL

Item Name		Quantity of Raw Material	Unit	Unit Rate of	Total CostPer Annum (100%)
Aloe vera leaves		100.00	tonne	18,000.00	18,00,000.00
Calcium Hypochlorite		400.00	kg	140.00	56,000.00
Carbopol		1,500.00	kg	2,000.00	30,00,000.00
Aristroflex		666.00	kg	4,000.00	26,64,000.00
Packing material(100 ml tubes)		3,00,000.00	pcs	2.00	6,00,000.00
Total					81,20,000.00
Total Raw material in Rs lacs					81.20

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL					
PARTICULARS	I	II	III	IV	V
Finished Goods					
(5 Days requirement)	0.96	1.11	1.26	1.43	1.60
Raw Material					
(5 Days requirement)	0.61	0.71	0.78	0.85	0.92
Closing Stock	1.57	1.82	2.04	2.28	2.53

COMPUTATION OF WORKING CAPITAL REQUIREMENT			
Particulars	Amount	Margin(10%)	Net Amount
Stock in Hand	1.57		
Less:			
Sundry Creditors	1.22		
Paid Stock	0.35	0.03	0.31
Sundry Debtors	3.32	0.33	2.99
Working Capital Requirement			3.30
Margin			0.37
MPBF			3.30
Working Capital Demand			3.00

COMPUTATION OF SALE

Particulars	I	II	III	IV	V
Op Stock	-	2,250.00	2,500.00	2,750.00	3,000.00
Production	1,35,000.00	1,50,000.00	1,65,000.00	1,80,000.00	1,95,000.00
	1,35,000.00	1,52,250.00	1,67,500.00	1,82,750.00	1,98,000.00
Less : Closing Stock(5 Days)	2,250.00	2,500.00	2,750.00	3,000.00	3,250.00
Net Sale	1,32,750.00	1,49,750.00	1,64,750.00	1,79,750.00	1,94,750.00
Sale Price per 100 ml tube	50.00	52.00	54.00	56.00	58.00
Sale (in Lacs)	66.38	77.87	88.97	100.66	112.96

<u>BREAK UP OF LABOUR</u>				
Particulars		Wages	No of	Total
		Per Month	Employees	Salary
Supervisor		12,000.00	1	12,000.00
Plant Operator		10,000.00	3	30,000.00
Unskilled Worker		6,000.00	3	18,000.00
Helper		4,000.00	2	8,000.00
Security Guard		6,000.00	1	6,000.00
				74,000.00
Add: 5% Fringe Benefit				3,700.00
Total Labour Cost Per Month				77,700.00
Total Labour Cost for the year (In Rs. Lakhs)			10	9.32

<u>BREAK UP OF SALARY</u>				
Particulars		Salary	No of	Total
		Per Month	Employees	Salary
Manager		12,000.00	1	12,000.00
Accountant cum store keeper		10,000.00	1	10,000.00
Sales		8,000.00	1	8,000.00
Total Salary Per Month				30,000.00
Add: 5% Fringe Benefit				1,500.00
Total Salary for the month				31,500.00
Total Salary for the year (In Rs. Lakhs)			3	3.78

COMPUTATION OF DEPRECIATION					
Description	Land	Building/shed	Plant & Machinery	Furniture	TOTAL
Rate of Depreciation		10.00%	15.00%	10.00%	
Opening Balance	Leased		-	-	-
Addition	-	2.00	18.00	1.50	21.50
	-	2.00	18.00	1.50	21.50
		-	-	-	
TOTAL		2.00	18.00	1.50	21.50
Less : Depreciation	-	0.20	2.70	0.15	3.05
WDV at end of Ist year	-	1.80	15.30	1.35	18.45
Additions During The Year	-	-	-	-	-
	-	1.80	15.30	1.35	18.45
Less : Depreciation	-	0.18	2.30	0.14	2.61
WDV at end of IIInd Year	-	1.62	13.01	1.22	15.84
Additions During The Year	-	-	-	-	-
	-	1.62	13.01	1.22	15.84
Less : Depreciation	-	0.16	1.95	0.12	2.23
WDV at end of IIIrd year	-	1.46	11.05	1.09	13.61
Additions During The Year	-	-	-	-	-
	-	1.46	11.05	1.09	13.61
Less : Depreciation	-	0.15	1.66	0.11	1.91
WDV at end of IV year	-	1.31	9.40	0.98	11.69
Additions During The Year	-	-	-	-	-
	-	1.31	9.40	0.98	11.69
Less : Depreciation	-	0.13	1.41	0.10	1.64
WDV at end of Vth year	-	1.18	7.99	0.89	10.05

REPAYMENT SCHEDULE OF TERM LOAN						11.0%	
Year	Particulars	Amount	Addition	Total	Interest	Repayment	CI Balance
I	Opening Balance						
	Ist Quarter	19.35	-	19.35	0.53	-	19.35
	IInd Quarter	19.35	-	19.35	0.53	-	19.35
	IIIRD Quarter	19.35	-	19.35	0.53	1.08	18.28
	Ivth Quarter	18.28	-	18.28	0.50	1.08	17.20
					2.10	2.15	
II	Opening Balance						
	Ist Quarter	17.20	-	17.20	0.47	1.08	16.13
	IInd Quarter	16.13	-	16.13	0.44	1.08	15.05
	IIIRD Quarter	15.05	-	15.05	0.41	1.08	13.98
	Ivth Quarter	13.98		13.98	0.38	1.08	12.90
					1.71	4.30	
III	Opening Balance						
	Ist Quarter	12.90	-	12.90	0.35	1.08	11.83
	IInd Quarter	11.83	-	11.83	0.33	1.08	10.75
	IIIRD Quarter	10.75	-	10.75	0.30	1.08	9.68
	Ivth Quarter	9.68		9.68	0.27	1.08	8.60
					1.24	4.30	
IV	Opening Balance						
	Ist Quarter	8.60	-	8.60	0.24	1.08	7.53
	IInd Quarter	7.53	-	7.53	0.21	1.08	6.45
	IIIRD Quarter	6.45	-	6.45	0.18	1.08	5.38
	Ivth Quarter	5.38		5.38	0.15	1.08	4.30
					0.77	4.30	
V	Opening Balance						
	Ist Quarter	4.30	-	4.30	0.12	1.08	3.23
	IInd Quarter	3.23	-	3.23	0.09	1.08	2.15
	IIIRD Quarter	2.15	-	2.15	0.06	1.08	1.08
	Ivth Quarter	1.08		1.08	0.03	1.08	0.00
					0.30	4.30	

Door to Door Period	60 Months
Moratorium Period	6 Months
Repayment Period	54 Months

<u>CALCULATION OF D.S.C.R</u>					
PARTICULARS	I	II	III	IV	V
<u>CASH ACCRUALS</u>	7.00	8.13	9.83	12.06	14.70
Interest on Term Loan	2.10	1.71	1.24	0.77	0.30
Total	9.10	9.85	11.07	12.83	14.99
<u>REPAYMENT</u>					
Repayment of Term Loan	2.15	4.30	4.30	4.30	4.30
Interest on Term Loan	2.10	1.71	1.24	0.77	0.30
Total	4.25	6.01	5.54	5.07	4.60
DEBT SERVICE COVERAGE RATIO	2.14	1.64	2.00	2.53	3.26
AVERAGE D.S.C.R.			2.27		

COMPUTATION OF ELECTRICITY				
(A) POWER CONNECTION				
Total Working Hour per day		Hours	8	
Electric Load Required		HP	45	
Load Factor			0.7460	
Electricity Charges		per unit	7.50	
Total Working Days			300	
Electricity Charges				6,04,260.00
Add : Minimim Charges (@ 10%)				
(B) DG set				
No. of Working Days			300	days
No of Working Hours			0.3	Hour per day
Total no of Hour			90	
Diesel Consumption per Hour			8	
Total Consumption of Diesel			720	
Cost of Diesel			65.00	Rs. /Ltr
Total cost of Diesel			0.47	
Add : Lube Cost @15%			0.07	
Total			0.54	
Total cost of Power & Fuel at 100%				6.58
Year		Capacity		Amount
				(in Lacs)
I		45%		2.96
II		50%		3.29
III		55%		3.62
IV		60%		3.95
V		65%		4.28