



सत्यमेव जयते

GOVERNMENT OF GUJARAT

Establishment of Cold Storage Unit For Fresh Onions

Agro and Food Processing

Government of Gujarat



 **ibrant** TM
10-13 Jan
GUJARAT 2017
Connecting India to the World | 8th Global Summit

Contents

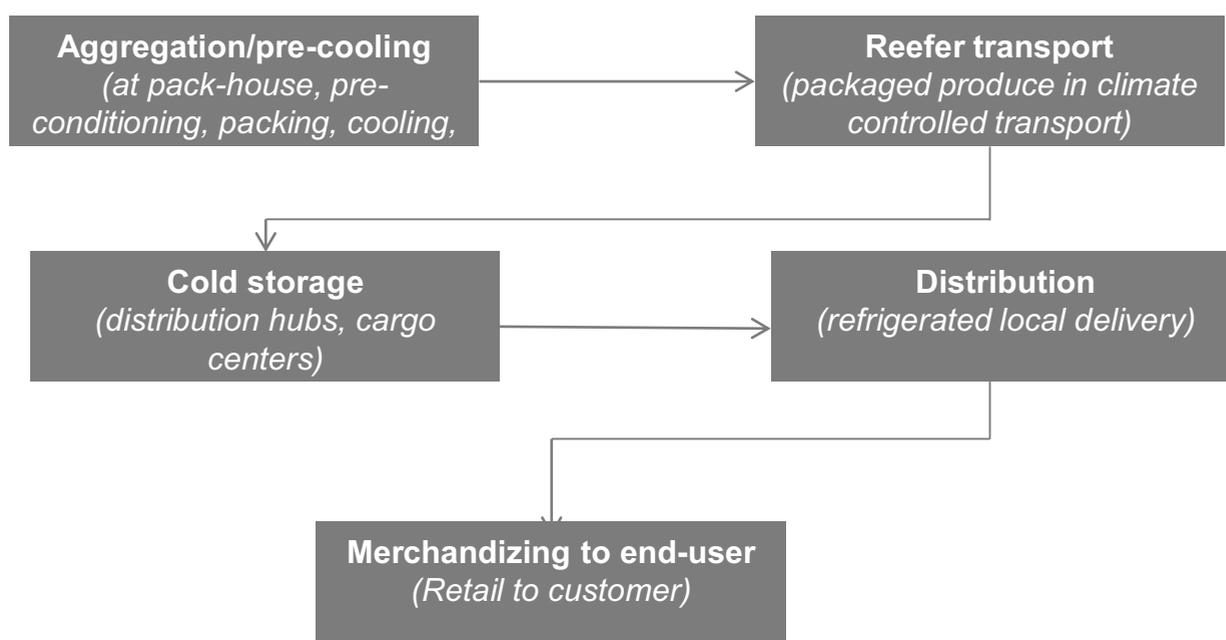
Project Concept	3
Market Potential	4
Growth Drivers	7
Gujarat – Competitive Advantage	8
Project Information	9
- Location/ Size	
- Infrastructure Availability/ Connectivity	
- Raw Material/ Manpower	
- Key Players/ Machinery Suppliers	
- Key Considerations	
Project Financials	13
Approvals & Incentives	16
Key Department Contacts	18

Logistics and cold chain industry

Logistics entails managing and controlling the flow of goods, energy, information and other resources from the source of origin to the targeted destination in a timely and cost-efficient manner. Logistics includes streamlining functions such as integration of information, warehousing (including temperature controlled) and material handling, inventory management and packaging.

Temperature controlled logistics or cold chain facilities entails storage, preservation of quality, and distribution of perishable products such as food, agricultural produce and pharmaceutical products. The warehouses can store products at temperatures ranging between -25 to +25 degree Celsius, with distribution being primary (long haul/inter-city) and secondary (last mile distribution).

Logistics flow of horticulture and floriculture produce from farm to end-consumer



Indian cold chain industry overview

The cold chain industry in India is at a very nascent stage and is highly fragmented (~3,500 players) with organized sector constituting 8-10% of the sector. As of 31 July 2015, there are 7,129 cold storages in India with a capacity of about 33 MT, operating approximately 9,000 reefer vehicles in 2014. The industry was valued at around INR400bn in 2015.

The cold chain industry is expected to grow at a CAGR of 28-30% through 2017 to be valued at more than INR600bn. The cold chain sector is being observed as the sunrise sector with high investment potential.

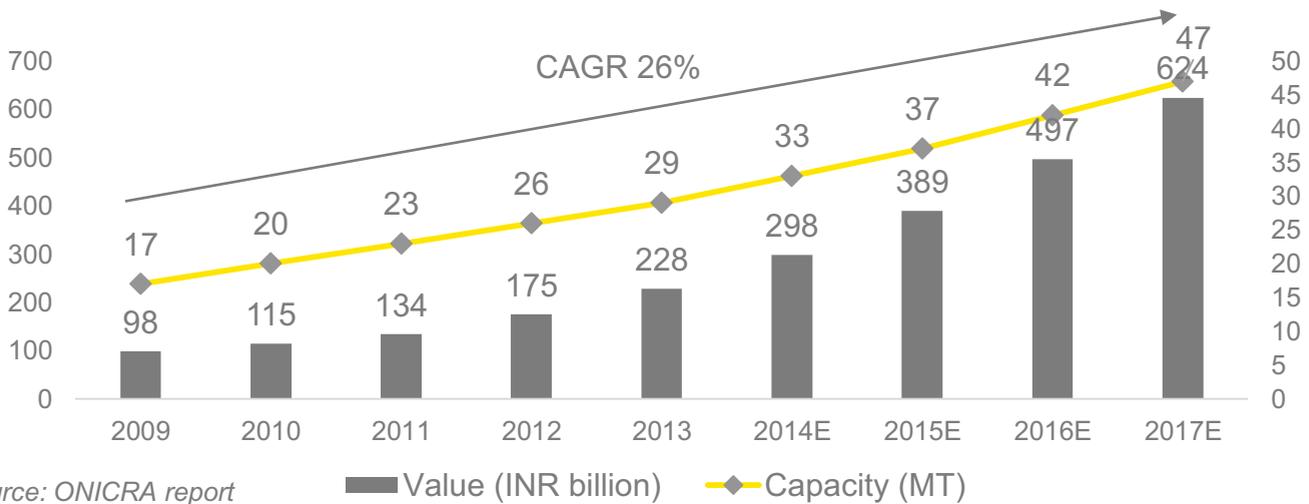
India is...

Largest
producer of fruits

2nd
largest producer
vegetables

Largest
producer of milk
in the world

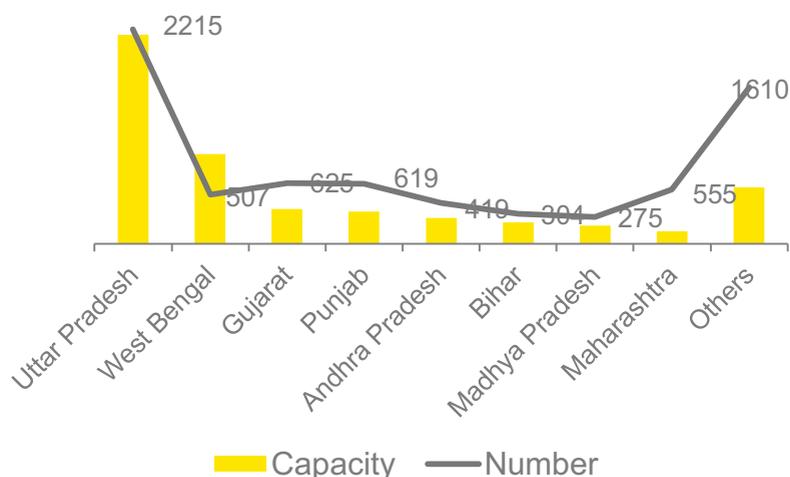
Growth of the Indian Cold Chain Industry



- ▶ India's cold chain industry is still evolving, unorganized, and operating below capacity as most equipment in use are not technically updated and single commodity based. Around 36% of the total cold storages in India have capacity below 1,000 MT and with the current capacity only less than 11% of what is produced can be stored. This represents a huge market potential in the country. Developing an integrated supply chain, including cold chain can save up to INR300 billion annually and at the same time reduce the wastage of perishable horticulture produce.
- ▶ Other key growth drivers include growth in organized retail and food service industry, government's initiatives, rising export demand for processed and frozen food.

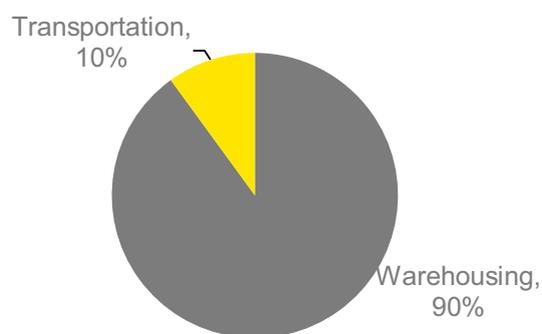
- ▶ About 60% of India's cold chain storage capacity is contributed by Uttar Pradesh and West Bengal. Uttar Pradesh has maximum number of cold store units in India at 2215 with a total capacity of more than 13.8 MT, followed by Gujarat with 625 units with a capacity of 2.3 MT and West Bengal with 507 units but a larger capacity of 5.9 MT.
- ▶ Cold chain infrastructure includes cold storage infrastructure, transport infrastructure and point of production infrastructure. Warehousing accounts for about 90% of the total temperature controlled industry.

Cold storage in India by states



Source: NCCD report

Warehousing accounts for bulk of temperature controlled industry



Source: ONICRA report

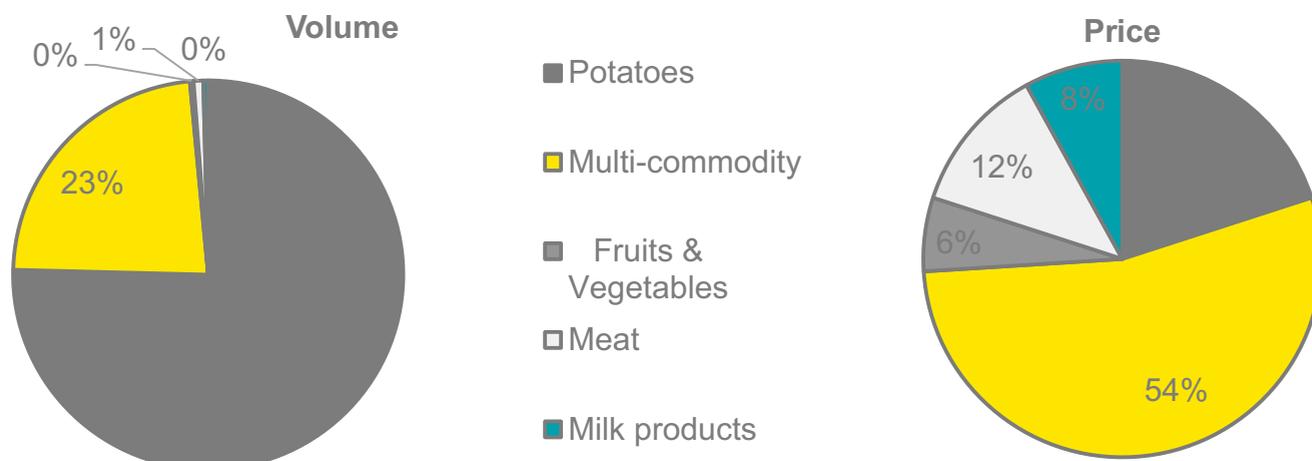
- ▶ Cold storage in India has been largely adopted for long-term storage of potatoes, onions and high value crops like apples, grapes and flowers.
- ▶ Growth in the temperature-controlled warehousing segment is driven by single-commodity potato warehouses, accounting for ~75% of the existing cold storage warehousing capacity in 2015.
- ▶ Only 23% fall in the multi-product category. Cold storages for meat, fish and dairy items and for other items such as chilies and other spices account for only 1% of total cold storage capacity.
- ▶ Pharmaceutical companies are increasingly relying, and spending, on cold-chain storage as temperature sensitive drugs are becoming more prevalent.

Key end industry segments

User segment	Growth outlook
Seafood	12-15%
Confectionaries	15-20%
Fruits and vegetables	30-40%
Dairy products	10-15%
QSRs	25-30%
Poultry	15-20%
Ready to cook	~15%
Ice cream	25-30%
Pharmaceuticals	12-15%

Source: NCCD, IIFL research

Cold storage price-volume analysis



Source: India Cold Chain Show report

- ▶ Cold storage units can be used to store either a single commodity or multiple commodities. The cold storage facilities now available are mostly for a single commodity like potato, orange, apple, grapes, pomegranates, flowers, etc. which results in poor capacity utilization.
- ▶ Multi-commodity cold stores are provided with multiple chambers enabling them to store a wide range of fresh horticulture products together with respect to their storage capability requirements for temperature, relative humidity, atmosphere, protection from odour and sensitivity to other gases like ethylene, making them highly efficient as compared to single-commodity cold stores.
- ▶ Share of multi purpose cold storages is low in storage capacity but high in revenue generation. However, there is growing focus towards multi-purpose cold storages.

Onions cold chain industry overview

- ▶ India is one of the largest producers of onion in the world second only to China, accounting for 16% of world area and 10% of production. Onion production in 2016 is estimated at 4.7 MT.
- ▶ The present storage capacity for onion is about 4.6 lakh tonnes, which is quite inadequate compared to India's total production. Even most of the structures available are traditional and unscientific. If 40 % of the stocks are earmarked for scientific storage the potential for new storage structures is about 12.6 lakh tonnes.
- ▶ However, it has been projected by the Expert Committee on Cold Storage and Onion Storage that about 1.5 lakh tonnes on-farm capacity in production areas and 3 lakh tonnes capacity at APMCs and other market places are required in next 5 years. Thus there remains a vast potential to be tapped.

Key drivers of organized Indian cold chain industry and terminal market

1

Evolving industries

- ▶ Growth in organized retail, pharmaceuticals, growing shift towards horticulture.
- ▶ India would need more than 33 MT of cold storage capacity in the next four years to cater to this growing demand with an investment requirement of about INR30 billion per annum
- ▶ Emerging quality standards and regulations

2

Favourable government policies

- ▶ Established the National Centre for Cold Chain Development in 2011 to look into matters related to cold chain infrastructure
- ▶ The industry has been accorded infrastructure status in FY12
- ▶ 100% FDI under automatic route is allowed since FY11
- ▶ Capital investment is eligible for viability gap funding scheme of Finance Ministry, funding is capped at 40% of the project cost
- ▶ Mega Food parks, agri export zones attracting infrastructure development including cold chain.
- ▶ Proposed financial outlay for cold chain infrastructure and food parks of ~US\$335mn and US\$650mn respectively. Over 50%-70% capital grant on projects

3

Strong domestic demand and export potential

- ▶ Growing middle class, urbanization impacting food habits and rising preference towards processed food
- ▶ Consumption expenditure is likely to reach US\$3.6 trillion by 2020, up from an estimated US\$1.0 trillion in 2010
- ▶ India's export of processed food and related items rose at a CAGR of 23.3% during FY11-15.

4

Supply-side advantage

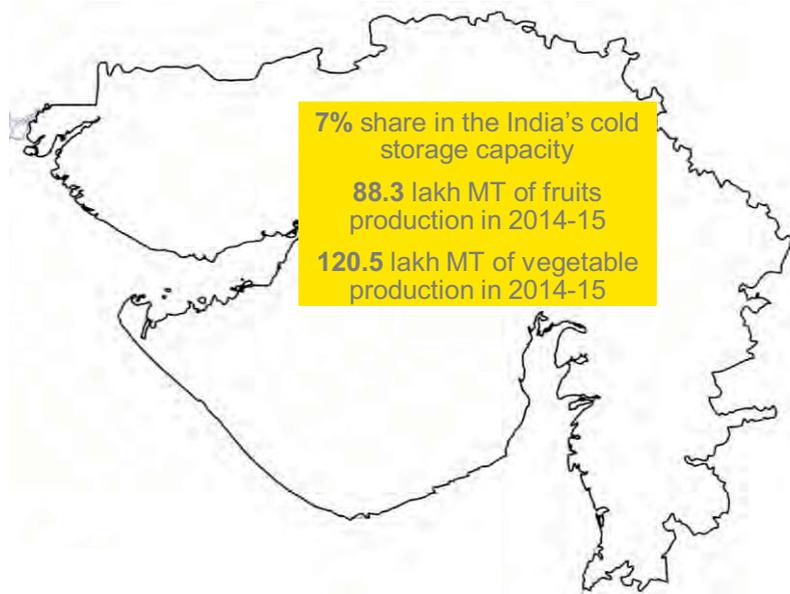
- ▶ India has favourable climate for agriculture and support wide variety of crops
- ▶ Large livestock aiding dairy and meat processing sector
- ▶ Long coastline and large inland water bodies helping the growth of marine sector

Gujarat - Competitive Advantage



Strong push by the Government of Gujarat (GoG) in the agri and food processing sector and related infrastructure and services

- ▶ The State has identified Agro and Food Processing industries as one of the thrust industries in Industrial policy 2016-21. Under this policy, the GoG plans to develop agricultural clusters and the whole value chain from the farm to foreign countries.
- ▶ Gujarat is poised for second agriculture revolution with the availability of Narmada Canal Irrigation facilities in 18 lakh hectare areas. This will boost horticulture production in the State as it is giving much higher returns to growers as compared to conventional agriculture crops providing attractive volumes to the terminal market.



Gujarat is...

2nd

largest producer of papaya and Sapota in India

3rd

largest producer of banana in India

6th

largest producer of mango in India

Cold chain industry in Gujarat

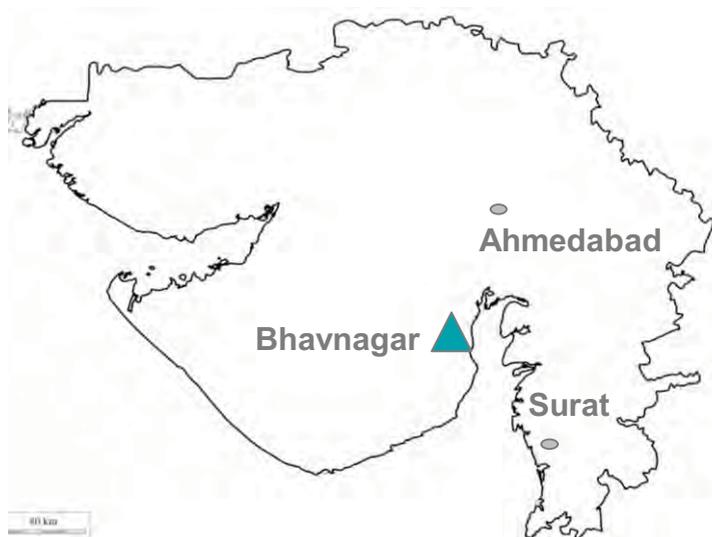
Cold storage industry in Gujarat

No. of cold storages	625
Storage capacity	23.2 lakh MT
Total manpower	18,343
Average age of cold storages	12 years
Product types in cold storages	
Horticulture/agriculture	65%
Processed food	10%
Animal husbandry	25%

Source: NCCD; ONICRA; Netherlands Enterprise Agency reports

- ▶ Gujarat ranks second in Onion production, contributing 17% to the national output.
- ▶ Increasing area and production of Onion in Gujarat will require additional Onion cold storage facility to prevent post harvest losses, which is currently around 20-25% of production and in value terms approximately INR 300 to 350 million every year.

Agro and cold chain projects near Ahmedabad



10 cold chain

projects have been approved at Surat, Kutch and other locations

Marine-based food parks

to be established by 2019 in Ahmedabad and Surat

Agriculture export zones

to be established by Agricultural and Processed Food Export Development Authority (APEDA)

210

Agricultural Produce Market Committees (APMCs) operating in Gujarat, under the National Agriculture Market (NAM) initiative.

Source: MOFPI; Assocham India

GoG plans to...

...establish linkage from farm gate to the consumer, end to end, to reduce losses through efficient storage, transportation and minimal processing.

INR110 million has been earmarked for financial assistance to the Agro industries in 2016-17.



Prioritize public investment in establishment of post harvest storage and marketing infrastructure at Agriculture Product and Market Committees (APMCs)



Establish multi-purpose and multi control atmosphere chambers, packing facility, cleaning in progress fog treatment, individual quick freezing and blast freezing facilities.

Source: MOFPI; Assocham India

Project Information



Leading players in cold chain sector in Gujarat

Tolsma-Grisnich

Omnivent

Kelvin Cold Chain Logistics Pvt. Limited

Gati Kausar cold chain solutions

Allround vegetable processing machinery

Mooij Agro Cold Store

Plant and Machinery / Equipment suppliers

Onion Grading and sorting equipments	Global Agri-tech Engineers, Vadodara
Super freeze refrigeration compressors	<ul style="list-style-type: none"> - Frick India Limited, New Delhi - Or Super freeze Ammonia compressor- Sheetal Refrigeration Co, Rajkot - DCE Refrigeration Pvt. Ltd, Pune - Rahul Agro Systems Pvt. Ltd., Nasik
Screen protected induction motor 30 HP each	
Hand operated immersed starter/ motor starter	
Screen protected delivery induction motor	
Ammonia oil separator	
Ammonia gas charging type	
Atmospheric type ammonia condenser	
Water pipe lines and fittings	
Ammonia air cooling units	
Slide rail for compressor motors	
Valves and fittings for the condensers and receivers	
Humidity control system	Bry-Air India-Gurgaon, Delhi

Source: Gujarat Agro Industries Corporation; Mott MacDonald; Industrial Extension Bureau; NABARD

Key considerations

- ▶ Low energy Costs to remain competitive
- ▶ Uninterrupted power supply
- ▶ Reduction in startup and operating wastages
- ▶ Technology transfer is one of the key factors that have driven the government's promotion of FDI
- ▶ Price sensitivity of onions
- ▶ Large number of Agricultural Produce Market Committees (APMCs) already operating in Gujarat
- ▶ Strong government focus and support
- ▶ Incentives being provided for skill enhancement, reimbursement of VAT, power tariff and electricity duty

Infrastructure availability

Logistics & Connectivity



Rail

- Bhavnagar Terminus railway station is a railway station serving Bhavnagar town, which is under Bhavnagar railway division of Western Railway Zone.
- It has two platforms and a single diesel Broad Gauge railway line.
- About 18 trains originates and terminates at Bhavnagar station.



Road

- NH8E passes through Bhavnagar that connects the city to Dwarka.
- Bahvnagar is well connected to other cities in Gujarat through state highways – SH1, SH6, SH21, SH25, SH31.
- SH1 connects Bhavnagar to Rajkot; and SH21 connects the city to Amreli.



Air

- Bhavnagar has a domestic airport, located 4km form the city.
- It is served by Air India Regional, offering flights to Mumbai.
- Closest international airport is in Ahmedabad located at about 175km.



Port

- Bhavnagar port is an all-weather direct berthing port for smaller vessels.
- It has a draught of up to 4 m and is well connected with the State Highway and broad gauge railway line.

Utilities



Water

- Gujarat has an extensive water grid network of 75,000 kilometre for irrigation and drinking
- Currently, the Gujarat Water Supply and Sewerage Board (GWSSB) is providing water to 490 villages in 22 districts



Power

- Gujarat is the 2nd largest state in terms of installed power capacity after Maharashtra
- Power generation capacity : 29,431.13 MW
- Per capita power consumption was 1,839 units in 2014-15 against the national average of 1010 units

Onion Storage Structure Requirements

For effective long storage of onion the parameters essential to be looked after are the bulb size, choice of cultivars, cultivation practices, time of harvest, field curing, removal of tops, drying, grading, packing, storage conditions (optimum storage range of relative humidity 65% to 70% with the temperature ranging between 25^o C to 30^o C).

Salient features of improved storage structures are:

- ▶ Construction of structure on a raised platform to prevent moisture and dampness due to direct contact of bulbs with the soil.
- ▶ Use of Mangalore tile type roof or other suitable materials to prevent built up of high inside temperature.
- ▶ Increased centre height and more slope for better air circulation and preventing humid micro climate inside godown.
- ▶ Providing bottom and side ventilations for free and faster air circulation and to avoid formation of hot and humid pockets between the onion layers.
- ▶ Avoid direct sunlight or rain water falling on onion bulbs to reduce sun scald, fading of colour and quality deterioration.
- ▶ Maintenance of stacking height to avoid pressure bruising.
- ▶ Periodical disinfection of structures and premises to check rottage.
- ▶ Cost effectiveness of structures is based on utilization of locally available material for the construction.

Following physical provisions with their costs are considered for an onion storage godown

- ▶ Land,
- ▶ Site development including levelling, fencing, drainage, etc.,
- ▶ Construction of onion storage shed as per the principles indicated above,
- ▶ Provision of wooden beams for the floor and bamboo sticks for sides and floors,
- ▶ Provision of poly ethylene sheets/ gunny bags for preventing sunlight or rain falling on onion.
- ▶ Contingency.

Estimated Project Cost and Means of Finance*

- ▶ **Project cost:** The estimated project cost is INR50 million (including land). This is basis the assumption that the manufacturing unit is set up in Bhavnagar, Gujarat.
- ▶ The proposed project will require an approximate of 14000 sq. mt of land with an proposed built up area of 3500 sq. mt. The unit is proposed to have an installed capacity of 2500 TPA. The total fixed cost of the project is estimated at INR 46.75 million and a working capital margin of INR 3.25 million, which adds up to capital cost of INR 50 million.



S. No	Financial parameters	Details
1	Cost of construction	IN50 million
2	Capacity of onion storage unit	2500 MT
3	Land and Land Development	4.2
4	Building and Civil works	10.5
5	Plant and Machinery 2500 MT storage	25
6	Misc. Fixed Assets	2.75
7	Preliminary & Pre-operative	2.5
8	Provision for contingencies	1.8
	Fixed Cost of Project	46.75
9	Margin Money for working capital	3.25
10	Estimated Block capital Cost of Project	50
	Means of Finance	
11	Promoters contribution	14.3
12	Term loan	35.7
	Total Means of Finance	50

Source: Gujarat Agro Industries Corporation; Mott MacDonald; Industrial Extension Bureau; NABARD

Project Financials



- ▶ **Utilities:** The unit will require utilities like water and electric power for operation of proposed Onion cold storage unit. Approx. 30 KL/day water and 250 HP connected power would be basic requirement for the proposed unit.
- ▶ **Manpower required:** The proposed unit would require 26 personnel that will include a manager, a maintenance supervisor, an accountant, store keeper, 5 skilled and 15 unskilled workers and 2 watchmen.
- ▶ **Timeline:** The proposed project will have cumulative implementation period of 9-10 months of which 5 to 6 months would be for obtaining the obligatory clearances from various authorities.

Financial Indicators

- ▶ The suggested Debt Equity Ratio for the proposed project is 2.5:1. Thus, the estimated term loan amounts to INR 35.70 million and equity at INR 14.30 million.
- ▶ The indicative IRR (Internal Rate of Return) for the proposed project is approx. 37% projected for a period of 15 years.

S.No.	Financial ratios	1 st Year	2 nd Year	3 rd Year
1	Break-even point in % capacity	39.69	30.87	25.14
2	Debt-service coverage ratio	1.88	2.40	2.88
3	Average DSCR	2.38		
4	Return on investment (ROI) in %	17.94	21.73	24.08
5	IRR 10 years project period	34%		

Source: Gujarat Agro Industries Corporation; Mott MacDonald; Industrial Extension Bureau; NABARD

Details of capital investment subsidy scheme for construction of onion storage structures

- ▶ **Eligible Borrowers:** Partnership firms, cooperative societies, private/ public joint sector companies, Agricultural Produce Marketing Committees, Marketing Boards and Agro Industries Corporations.
- ▶ **Eligible Banks for Refinance from NABARD:** Commercial Banks (CBs and RRBs), Cooperative Banks (SCBs and SCARDBs), ADFCs (Bangalore, Chennai and Hyderabad).
- ▶ **Type of technology:** Preference is given for modern design/ technology and energy saving devices.
- ▶ **Quantum of Subsidy:**
 - ▶ The subsidy is available only in States/ Union territories/ Areas which do not administer or control rentals for cold storages and there are no restrictions on the operation of these units.
 - ▶ INR500/ per MT of onion storage/ storage capacity created additionally subject to 25% of the project cost per beneficiary.
 - ▶ The sanction of subsidy under the scheme is subject to availability of funds, the instructions/ guidelines issued by GOI from time to time.
 - ▶ Subsidy would be released to the financing bank on submission of completion certificate by the borrower through the financing bank. The subsidy will be kept in separate account by the financing bank and the repayment schedule will be drawn on the loan amount (including subsidy) in such a way the subsidy amount is adjusted after the bank loan portion is liquidated.
- ▶ **Margin Money:** 15% to 25% of the project cost depending upon the status of the borrower.
- ▶ **Term loan for financing banks/ Institutions (ADFCs):** Balance amount (including subsidy, where available)
- ▶ **Quantum of Refinance:** 90% of the amount financed to borrower (including subsidy)
- ▶ **Repayment period:** Depending upon cash flow and will be upto 5 years.

Approvals Required

- APMC Act reforms
- State Government to constitute a committee for setting up of cold storage units and will initiate suitable measures to provide necessary legal frame work
- State Government to provide seed capital and equity contribution

Incentives from Government of Gujarat

GoG has prepared a Agri business policy 2016 for strengthening agriculture-related infrastructure and promoting food processing industry. Discussed below are the various subsidies and incentives established for promoting the industry.

Subsidy		
Projects	Admissible Subsidy	Maximum Limit (INR crore)
New project in agro food processing	25%	0.5
Cold chain, food e-radiation, packaging houses and food parks	25%	5
Primary processing or collection centre of farm produces at village level	25%	2.5
Capital investment subsidy for reefer vehicles	25%	0.5
National Horticulture Board provides capital subsidy for construction, expansion and modernization of cold storages	40%	<ul style="list-style-type: none">• INR6,000/MT (normal cold storages)• INR7,000/MT and INR8,000/MT (specialized cold storages)• INR32,000/MT for CA storages

Gujarat Industrial Policy 2015

Government of Gujarat has announced an ambitious Industrial Policy, in January 2015, with the objective of creating a healthy and conducive climate for conducting business and augmenting the industrial development of the state, including agro and food processing.

Approvals

- Registration of the industrial undertaking
- Industrial Entrepreneur Memorandum or Udyog Aadhar
- Non-agriculture land permission and purchase deed registration
- Consent to Establish from Gujarat Pollution Control Board

Quantum of incentives

Category of Project Location (Taluka)	% of eligible fixed capital investment entitled for Incentive	% of Net VAT reimbursement to the unit	% of Net VAT to be paid to Government	Incentive period (no. of years)
1	100	90	10	10
2	80	80	20	10
3	70	70	30	10

Net VAT incentives

Net VAT incentive will be reimbursed to the industrial undertaking in one financial year will not exceed one-tenth of the total amount of eligible incentive.

Classification of the Project	Amount (in INR crore)
Ultra Mega Industrial Unit	500
Mega Industrial Unit	400
Large Industrial Unit	150
Micro, Small or Medium Industrial Unit	50

Agricultural & Processed Food Products Export Development Authority

<http://apeda.gov.in/apedawebsite/>

National Bank for Agriculture and Rural Development (NABARD)

www.nabard.org/

Food Safety and Standards Authority of India

<http://www.fssai.gov.in/>

Agriculture and Co-operation Department

www.agri.gujarat.gov.in/index.htm

Gujarat Industrial Development Corporation

www.gidc.gov.in/

Industries Commissionerate

www.ic.gujarat.gov.in

This project profile is based on preliminary study to facilitate prospective entrepreneurs to assess a prima facie scope. It is, however, advisable to get a detailed feasibility study prepared before taking a final investment decision.

For further details:

iNDEXTb
INDUSTRIAL EXTENSION BUREAU
(A GOVT. OF GUJARAT ORGANISATION)
ISO 9001 : 2015 Certified

- Block No. 18, 2nd Floor, Udyog Bhavan, GH-4, Sector 11, Gandhinagar - 382 010 Gujarat, INDIA
- +91-79-23256009, 23250492 / 93
- +91-79-23250490
- indextb@indextb.com
- www.indextb.com



Gujarat Agro Industries Corporation

A Government Enterprise

Gujarat Agro Industries Corporation Limited
Gujarat State Civil Supplies Corporation Ltd Building
2nd Floor , "B" Wing , Sector 10A,
Gandhinagar – 382010, Gujarat, India
Phone / Fax : 079-23240208
Email: md-gaic@gujagro.org
<https://gaic.gujarat.gov.in/>