



सत्यमेव जयते

GOVERNMENT OF GUJARAT

# Establishment of Cold Chain Terminal Market in DMIC Corridor

## Agro and Food Processing

Government of Gujarat



TM

10-13 Jan

**GUJARAT 2017**

Connecting India to the World | 8<sup>th</sup> Global Summit

# Contents

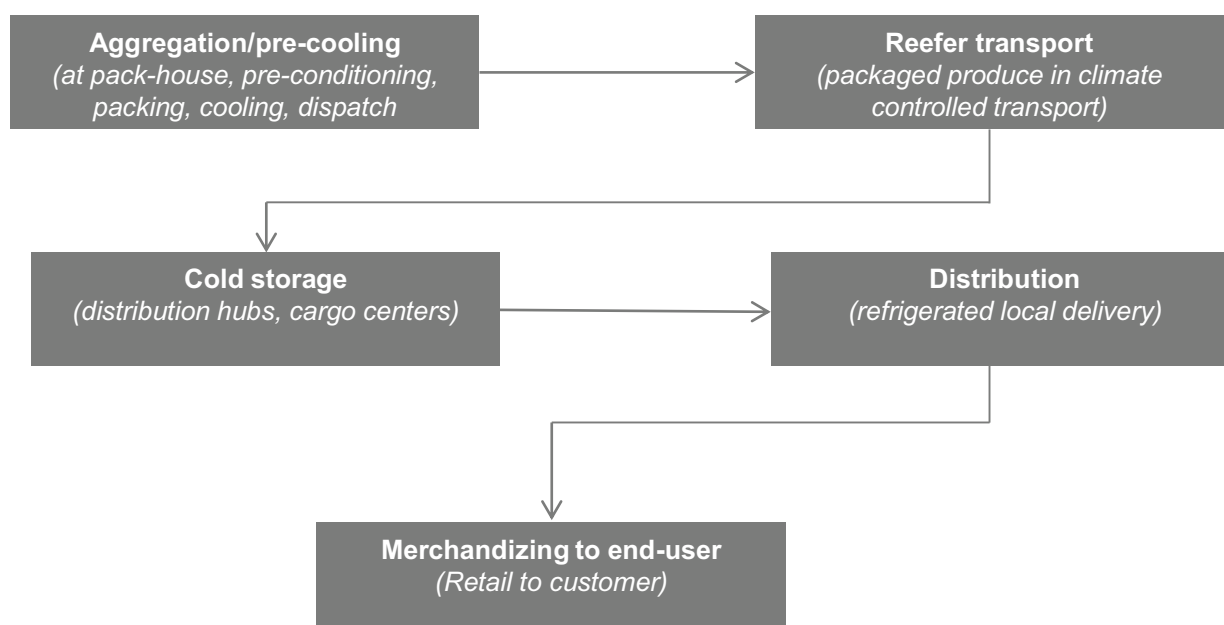
Project Concept	3
Market Potential	4
Growth Drivers	6
Gujarat – Competitive Advantage	7
Project Information	9
- Location/ Size	
- Infrastructure Availability/ Connectivity	
- Key Players	
- Equipment suppliers / Plant and Machinery	
- Key Considerations	
Project Financials	15
Approvals & Incentives	17
Key Department Contacts	19

## 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.

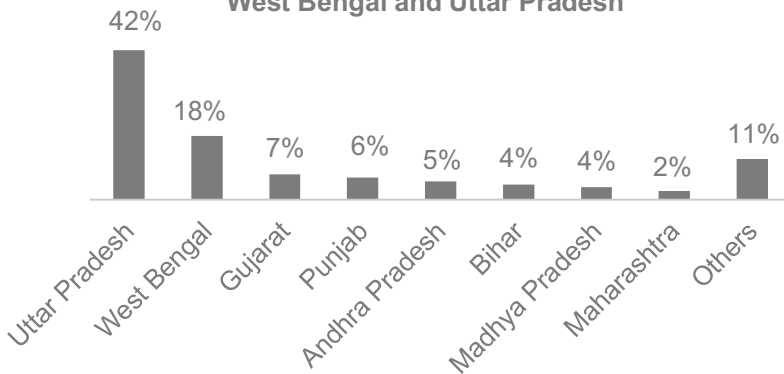
**India is...**

**Largest**  
producer of fruits

**2<sup>nd</sup>**  
largest producer  
of vegetables

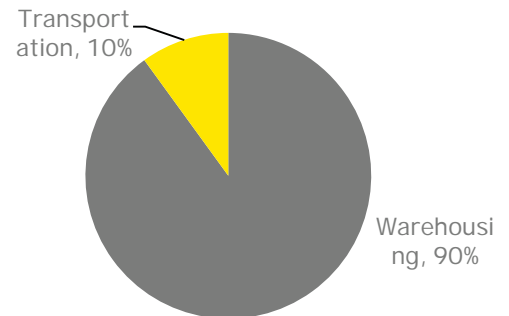
**Largest**  
producer of milk  
in the world

60% of warehousing capacity concentrated in West Bengal and Uttar Pradesh



Sources: IIFL Institutional research

Warehousing accounts for bulk of temperature controlled industry



Sources: IIFL Institutional research

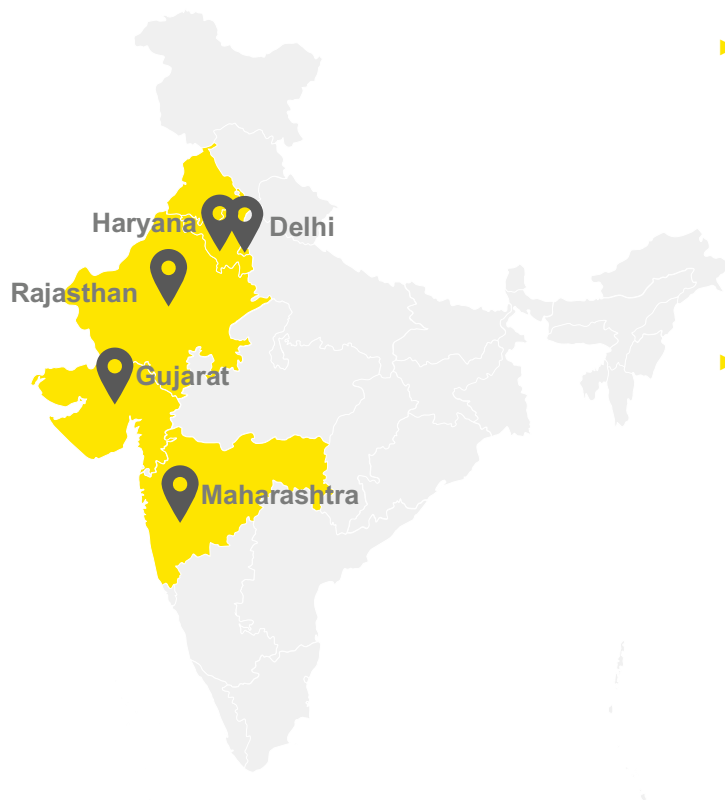
- ▶ India's cold chain industry is operating below capacity as most equipment in use are not technically updated and single commodity based. Around 36% of the total cold storages in India have capacity below 1,000 MT and with the current capacity only less than 11% of what is produced can be stored. This represents a huge market potential in the country. Developing an integrated supply chain, including cold chain can save up to INR300 bn/yr.
- ▶ 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.

### 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

## DMIC corridor



- ▶ Delhi - Mumbai Industrial Corridor (DMIC) is India's most ambitious infrastructure programme in collaboration with the Government of Japan. It aims to develop new industrial cities as "Smart Cities" with adequate infrastructure linkages like power plants, water supply, high capacity transportation and logistics facilities.
- ▶ Western Dedicated Freight Corridor (DFC) between Delhi and Mumbai, covering an overall length of 1,504km and passing through the States of U.P, Delhi NCR, Haryana, Rajasthan, Gujarat and Maharashtra, with end terminals at Dadri in the Delhi NCR and Jawaharlal Nehru Port (JNPT) near Mumbai forms the backbone of the project.

- ▶ An Investment Region (IR) is specifically delineated industrial region with a minimum area of over 200 square kilometres (20,000 hectares), while an Industrial Area (IA) would be developed with a minimum area of over 100 square kilometres (10,000 hectares).
- ▶ 24 such special investment nodes - 11 IRs and 13 IAs spanning across six states have been identified. Following have been taken up for implementation under Phase – I of DMIC Project.

### Investment regions:

- ▶ Ahmedabad – Dholera Special Investment Region, Gujarat (903 sq. kms.)
- ▶ Dadri-Noida-Ghaziabad Investment Region, Uttar Pradesh, (218 sq. kms.).
- ▶ Manesar-Bawal Investment Region, Haryana (402 sq. kms.);
- ▶ Khushkhara-Bhiwadi-Neemrana Investment Region, Rajasthan (160 sq. kms.);
- ▶ Pitampur-Dhar-Mhow Investment Region, Madhya Pradesh (372 sq. kms.)

### Industrial areas:

- ▶ Shendra-Bidkin Industrial Area, Maharashtra (84 sq. kms.)
- ▶ DighiPort Industrial Area, Maharashtra (253 sq. kms.)
- ▶ Jodhpur-Pali-Marwar Industrial Area, Rajasthan (155 sq. kms.)

## Key drivers of organized Indian cold chain industry and terminal market

### 1 Evolving industries and regulations

- ▶ Growth in organized retail, pharmaceuticals, growing shift towards horticulture
- ▶ Emerging quality standards and regulations

### 2 Favourable government policies

- ▶ 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.

### 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 USD3.6 trillion by 2020, up from an estimated USD1.0 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

### 5 Establishment of logistics hubs across DMIC corridor

- ▶ Logistics parks and transshipment zones are being developed along the DFC between Delhi and Mumbai facilitating trade
- ▶ In the first phase six logistics parks are being planned by Indian Railways for enhancing rail based traffic along the DFC.



# 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..

**2<sup>nd</sup>**

largest producer of papaya and Sapota in India

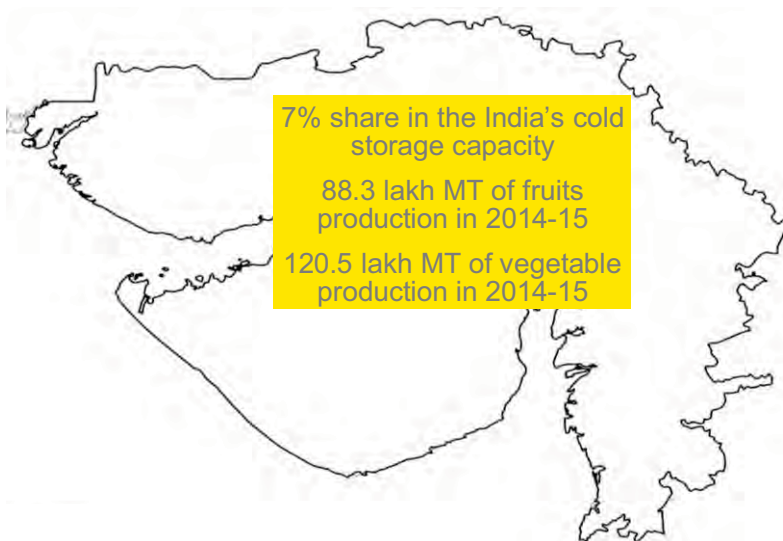
**3<sup>rd</sup>**

largest producer of banana in India

**6<sup>th</sup>**

largest producer of mango in India

### Cold chain industry in Gujarat



### Cold storage industry in Gujarat

No. of cold storages (as on 31 July 2015)	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: Gujarat Agro policy 2016

- ▶ Terminal Market are a service provider to horticulture growers and buyers of horticulture products in the districts, forming a critical element in the agriculture marketing system.
- ▶ The terminal market is linked to number of collection centers, set up at key production centers allowing easy access to farmers for marketing of their produce.

# Gujarat – Competitive Advantage



- ▶ The proposed DFC between Delhi and Mumbai passes through Palanpur, Mahesana, Ahmedabad, Vadodara, Bharuch and Valsad in Gujarat.
- ▶ Key industrial sectors in the state include Gems and Jewellery, Engineering, Chemicals and Petrochemicals, Oil and Gas, Textiles and Apparels and Food processing.
- ▶ Five development nodes have been identified in Gujarat under the influence area of DMIC
  - Node No.12: Ahmedabad-Dholera Investment Region
  - Node No.13: Vadodara-Ankleshwar Industrial Area
  - Node No.14: Bharuch-Dahej Investment Region
  - Node No.15: Surat-Navsari Industrial Area
  - Node No.16: Valsad-Umbergaon Industrial Area

**62%**

area of Gujarat state is covered within the influence area of DMIC

## Planned agro/food processing zones in Gujarat

### Surat-Navsari Industrial Area

- ▶ Integrated agro/food processing zone with adequate backward and forward linkages
- ▶ Integrated logistics hub with multi-modal logistics infrastructure and value added services
- ▶ Integrated township
- ▶ Captive power plant
- ▶ Development of Surat airport
- ▶ Adequate feeder road (Industrial Area to NH-8 and NH-6, widening of Hazira-Surat linkage to four-lane dual carriageway, development of requisite grade separators/flyovers/interchanges and underpasses along the National Highways/ State Highways)
- ▶ Rail links (Surat (Gothangam) and Hazira)

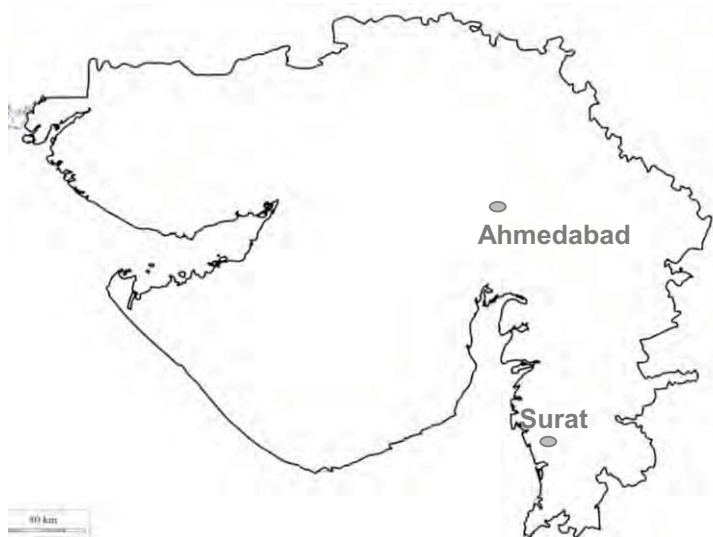
This will allow taking advantage of inherent strengths of the region for horticulture produce (Mango, Chikoo/Sapodilla and Banana).

### Valsad-Umbergaon Industrial Area

- ▶ Region has a rich horticulture produce of Mango, Chikoo/Sapodilla
- ▶ Integrated agro/food processing zone with necessary backward and forward linkages
- ▶ Integrated logistics hub with multi-modal logistics infrastructure and value added services
- ▶ Integrated township
- ▶ Captive power plant
- ▶ Adequate feeder road (Maroli Port to NH-8, augmentation of Vapi-Nashik (NH-3) and Valsad- NH-6 road links, development of requisite grade separators/flyovers/interchanges and underpasses along the National Highways/ State Highway)
- ▶ Rail links (between Maroli Port and the DFC)



## Agro and cold chain projects in Gujarat



### 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**

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

## 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.

## Leading players in cold chain sector in Gujarat

Tolsma-Grisnich

Omnivent

Kelvin Cold Chain Logistics Pvt.  
Limited

Gati Kausar cold chain solutions

All-round vegetable processing  
machinery

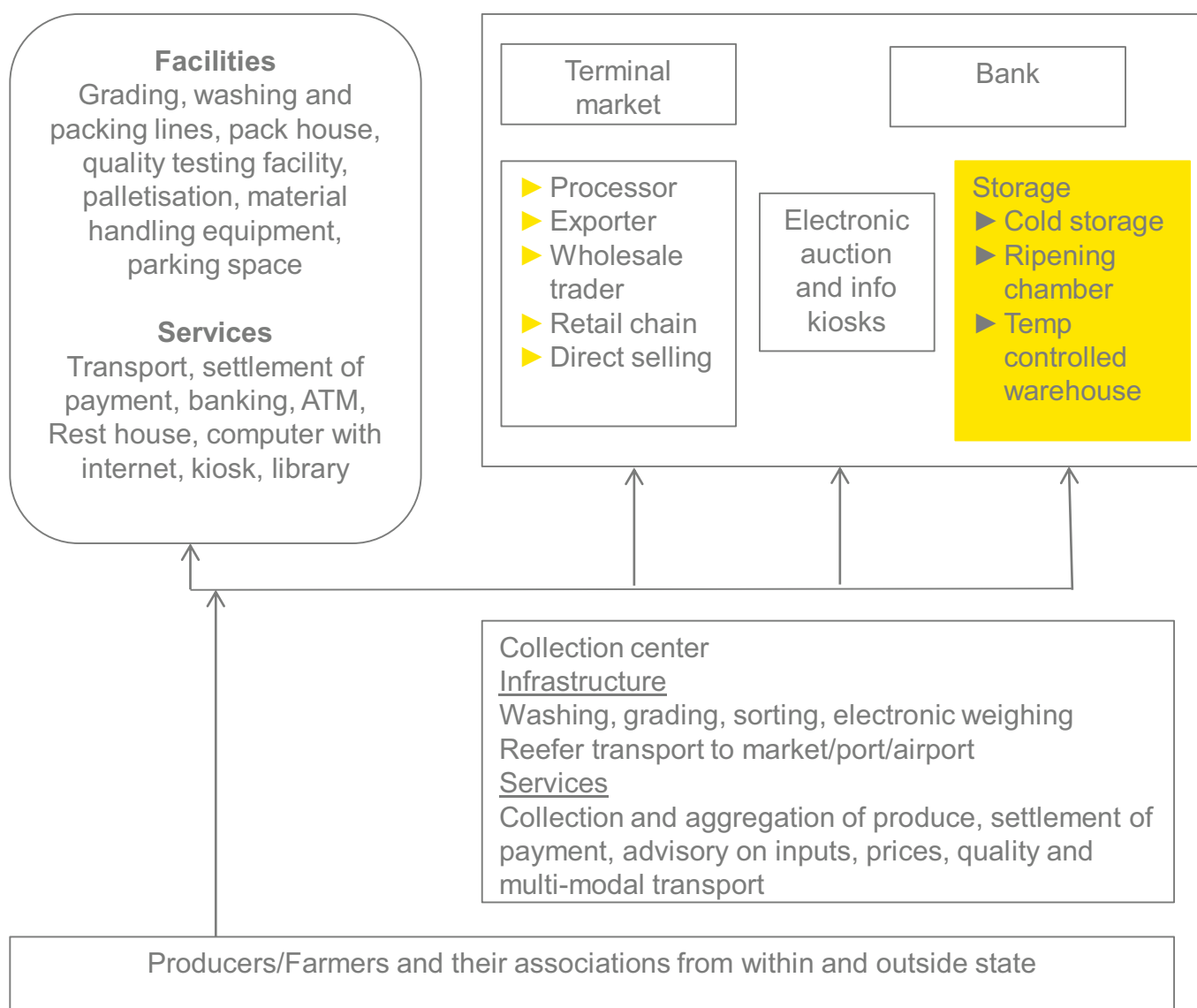
## Plant and Machinery / Equipment suppliers

Onion Grading and sorting equipments	Global Agri-tech Engineers, Vadodara
Super freeze refrigeration compressors	<ul style="list-style-type: none"> <li>- Frick India Limited, New Delhi</li> <li>- Or Super freeze Ammonia compressor-Sheetal Refrigeration Co, Rajkot</li> <li>- DCE Refrigeration Pvt. Ltd, Pune</li> <li>- Rahul Agro Systems Pvt. Ltd., Nasik</li> </ul>
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	Bry-Air India-Gurgaon, Delhi
Humidity control system	

## Project Structure: Terminal market

The terminal market will be located near the major urban center. These markets are serviced by collection centers established in key production areas. The collection center would get the supply from individual farmers or farmer associations at the village or block level. The market complex includes the entire necessary infrastructure.

### Typical model of terminal market



The terminal market benefit both buyers and sellers as it has fewer intermediaries, lesser handling, better infrastructure facilities and quality standards.

## Project Structure & Implementation Model

**Special purpose vehicle** (SPV) is established under **PPP** model that is responsible for the acquisition of land for setting up of the Terminal markets and also for the Collection centres. It is also responsible for the acquisition of land for setting up of the Terminal markets and for the Collection centres.

The Terminal Market will operate on collection of nominal user charges (determined by commercial considerations) from market participants and producers and other stakeholders for the infrastructure and services provided by it. The charges will be for providing the basic services of aggregation at collection centres and auction at the Terminal market.

## Infrastructure Availability

### Logistics & Connectivity: Surat



#### Rail

- ▶ Surat is connected with other districts of the state such as Rajkot, Vadodara and Ahmedabad by rail.
- ▶ Hazira port in Surat is ~16 kms away from the Surat railway station.
- ▶ The Mumbai-Ahmedabad bullet train project will have Surat as one of the stations.
- ▶ In 2016, the Gujarat government assigned Delhi Metro Rail Corporation as a consultant for the proposed metro connectivity in Surat.
- ▶ Rail connectivity was proposed for Hazira and Nargol ports in the 2016 rail budget.



#### Road

- ▶ The city is connected to Delhi Mumbai Industrial Corridor (DMIC) which links Ahmedabad, Vadodara and Surat.
- ▶ Proximity to NH-8 and NH-6 further enhances connectivity in the city.
- ▶ Surat also has very good connectivity with other cities of the state such as Vadodara (154 km) and Ahmedabad (265 km).
- ▶ Proposed four-lane highways which are expected to improve connectivity in Surat include – Dakor-Savli, Vadodara-Dabhoi & Surat-Olpad-Bardoli.



#### Air

- ▶ Surat domestic airport is well connected to various parts of the country. The city is located ~275 kms from the international airport at Ahmedabad.

#### Proposed

- ▶ In January 2015, Airports Authority of India gave an in-principle approval for cargo terminal at Surat airport worth INR70 million. The terminal is will be operational in 2017.
- ▶ In February 2016, Surat Airport Action Committee filed an online petition for an international airport at Surat.



#### Port

- ▶ The nearest port is Hazira which is 25 km from Surat.
- ▶ Additionally, Hazira port is well connected to Mundra port and Jawaharlal Nehru Port Trust (JNPT) – India's largest container port
- ▶ Thus, it provides a convenient textiles-related trade gateway to International (Europe, Africa, America and the Middle East) and domestic markets.

### Utilities



#### Water

- ▶ Water for industrial purposes can be obtained from four sources viz. Gujarat Water Supply and Sewerage Board (GWSSB), an irrigation canal, dams, and surface reservoirs.



#### Power

- ▶ The main source for the power supply is Torrent Power Limited in Surat

## Manpower requirement

Responsibility	Number
General Manager	1
Manager operations	2
Business Development	2
Operators (for cold storage plant)	5
Maintenance (electricians etc.)	3
Account and admin	2
Security and support staff	6
Total employee	21
Labour	50

## Key considerations

- ▶ Logistics parks to be set up in three locations in Gujarat
- ▶ Freight Logistic Parks at six locations along the Dedicated Freight Corridor (DFC) to be set up by Railways in Gujarat
- ▶ 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



## Estimated Project Cost

Assumption: As there is no existing terminal market in Gujarat, we have considered projects in Sambalpur, Odhisa for estimating project financials. The land cost (60 acre) in the project is taken at INR2 lakhs/acre. For Collection centres, land cost has been assumed as INR10lakh/acre as these centres will be situated in interior areas.

Particulars	Amount in INR Lakhs
Land	145
Land development	917
Buildings	2,787.45
Plant machinery and equipment	2,193.25
Utilities and other fixed assets	528
Contingencies	340
Margin money for working capital	35.86
Total	7,321

Note: The project cost considered for grant does not include margin money for working capital and non marketing infrastructure cost of INR384 lakh.

**Means of finance:** The cost of the project is to be financed through a mix of equity, grant from National Horticulture Mission (NHM) and term loans from banks/ FIs.

Particulars	Amount in INR Lakhs	Share
Equity	1,464	20%
Grant – NHM	2,761	37.7%
Debt	3,096	42.3%
Total	7,321	100%

Being an agri infrastructure project, it is suggested to have debt equity ratio of 4:1, which is normally adopted for such basic agri infrastructure projects like APMCs being set up under the cooperative structure.

The project will have an indicative IRR of 14 to 16%, as per current infrastructure project funding norms of cooperative financial institutions.

# Project Financials



## Cost breakup of machinery and equipment

Plant, machinery and equipment	Unit	No. of units	Rate/Unit	Amount (INR lakhs)
Cold store – 2000 MT	MT	5	5000000	250
Ripening Chambers (8 chambers of 10 MT each)	TPD	20	640000	128
Sorting, grading, packaging facility-5 MT/Hr	Nos.	6	4500000	270
Conveyer based handling system	Nos.	5	3500000	175
Electronics Auction System	Ls			150
Weigh Bridge (30 MT)	Nos.	2	3000000	60
Loading Unloading facilities-Dock levelers	Nos.	10	800000	80
Crate	Nos.	200000	270	540
Pallets	Nos.	6000	3300	198
Fork lifts	Nos.	3	1200000	36
Weighing Machines	Nos.	30	30000	9
Testing and certification lab	Ls.			75
Vehicles (reefer (2) normal (4))	Ls.			88
Total main market complex				2059

## Approvals Required

- APMC Act reforms
- State Government to constitute a committee for setting up of terminal markets 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"><li>• INR6,000/MT (normal cold storages)</li><li>• INR7,000/MT and INR8,000/MT (specialized cold storages)</li><li>• INR32,000/MT for CA storages</li></ul>

The SPV for Terminal market may approach the State Office of National Horticulture Board for availing incentives under their different schemes for cold storage and other post harvest infrastructure facilities including cold chain for horticulture produce transportation from spokes (collection centres) to hub (terminal markets).



## 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

**National Centre for Cold Chain Development**

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

**National Horticulture Board**

<http://nhb.gov.in/default.aspx>

**Agriculture and Co-operation Department, Government of Gujarat**

<https://agri.gujarat.gov.in/>

**Ministry of Food Processing Industries**

[www.mofpi.nic.in](http://www.mofpi.nic.in)

**Gujarat Industrial Development Corporation**

[www.gidc.gov.in](http://www.gidc.gov.in)

**Industrial Extension Bureau**

[www.indextb.com](http://www.indextb.com)

*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](mailto:md-gaic@gujagro.org)  
<https://gaic.gujarat.gov.in/>