4.1 Gujarat Maritime Board

Introduction

Gujarat is a pioneering, futuristic and entrepreneurial state of the country. In particular, Gujarat's maritime sector is considered to be the most proactive and well developed sectors of India. During the year 2009-10, ports handled about 206 million tonnes of cargo, which accounted for 80 per cent of the total cargo handled by all the minor ports of India.

The milestone achieved by the State of Gujarat in the port sector is by a virtue of its 1600 kms long coastline, its innovative strategic initiatives, proactive measures by the Government and above all a competent and channelized guidance provided by its regulatory body named ‘Gujarat Maritime Board’.

FIGURE 5
GMB - Vision, Mission and Objectives

**Vision**
To capture the strategic advantage of India’s longest coastline and develop the coastal areas to make them the growth engines of the State.

**Mission**
To sustain, facilitate and excel in developing multi purpose port and logistic facilities, and shipping related industry via its competent services and timely infrastructure development.

**Objectives**
- To maximize coastal benefits and strategic advantages of Gujarat Ports
- To capture maximum traffic at Gujarat Ports and enhance container traffic at GMB Ports.
- To further strengthen its role in liquid and bulk cargo
- To develop Gujarat as a Shipbuilding/Repair Hub
- To promote various other port led development as Ro-Ro Ferry Terminal services, Jetty Services, Marine Tourism, Logistic Parks.
- To provide services, property and infrastructure support that will promote private investment.
- To ensure and protect ecological balance and safeguard social and environmental issues.
- To bring innovation and implement latest technology at all ports
- To ensure safety and security at all levels of operation

**Evolution of Gujarat Maritime Board**
Gujarat Maritime Board was founded in 1982 under the Gujarat Maritime Board Act, 1981, to manage, control and administer the minor ports of Gujarat.
Inception of Gujarat Maritime Board brought all stakeholders under one roof and resolved the then existing issues in the Port sector like obsolete technology, low loading rates, congestion and delays, poor connectivity with the hinterland etc.

Over the next two and half decades of operation, GMB planned the integrated development of new ports, along with the required road and rail links. It also took a lead in developing several forms of privatization such as privatizing port services to facilitating private jetties, shifting from the model of joint venture ports to completely private ports etc.

The State’s Port Policy Statement of December 1995 spelled out an explicit strategy of port-led development, including the creation of 10 completely new, world-class ports, in which private-sector participation played a dominant role. At the crack of new millennium, the sector received a thrust, which put the port sector in Gujarat in a completely new orbit. GMB explicitly came out with many policies as BOOT Policy, Captive Jetty Expansion Policy, and New Shipbuilding Policy (proposed) to promote port led development in the State.

GMB presently manages the 41 minor ports of the State with a vision 'To enhance and harness ports and international trade as vehicles for economic development'. It is perhaps the only maritime body with an enviable feat, nationally and internationally.

**History**

The strategic location of Gujarat, as it opens out into the Arabian Sea, has been historically important for trade and commerce, with ancient countries like Sumer, Phoenicia, Rome, Iran, Egypt, East Africa, Malaya, Sumatra and China etc. As narrated in various religious and ancient literatures, Gujarat had a well documented maritime trade dating back to 4500 years.

Ancient period was the Golden Age of Shipping and Ship-building activities. Sir William Jones, a renowned scholar is of opinion that the Hindus “must have been navigators in the age of Manu, because bottomry (the lender of money for marine insurance) is mentioned in it.”
A vast repository of ancient literature has random references to a brisk seafaring trade. Harivansh Purana mentions that the Prosperity of Yadavas was due to the sea. Kautilya has also mentioned in his Arthashashtra that the main occupation of people living in coastline was navigation. The Bible refers to Phoenician sailors who sailed to Ophir (Abhira in Gujarat) and brought back treasures.

The Greek ‘Periplus of the Erythrean Sea’ contains many detailed references to the Gujarat seaports as Barygaza(Bharuch, Gujarat). Even, the Greek author Galazy has mentioned in his book Batiyas about the shipping activity of Kachchha in circa 246. The well known historian Huian-Tsang described Saurashtra as Sa-la-ch’a and referred it as ‘the highway to the sea where all inhabitants were traders by profession’.

Ancient Gujarat marks one of the glorious chapters in Indian history. The State possesses a strong maritime lineage with a remarkable mastery over the seas, extensive trade links and expertise in Shipbuilding.

**Ancient maritime centers which flourished at the Gujarat coastline are:**

1. **Lothal** - The ancient city of Lothal has the oldest dockyard in the world. The city boasted of 30 ships of 60 tonnes each. Lothal was an important maritime trading centre and had trade linkages with Egypt, Arabian and Sumerian cities.

2. **Padri** - Padri, a site in the Gulf of Khambhat had also a strong maritime presence. It is believed that Harappans of Padri had mastered the technique of deep sea fishing, traversing the ocean in huge boats.

3. **Kuntasi** – Kuntasi locally known as ‘Bibino Timbo’ was a port situated at the creek mouth during Harappan period. It was a centre for acquiring and processing raw materials for manufacturing articles for export.

4. **Dholavira** – Dholavira, another Harappan site was an active port which was a safe harbour for anchoring boats.
5. **Bet Dwarka** – It was a small port established in 2nd millennium BC. Dwarka was a well planned township. Its harbour consisted of a rocky ridge modified into an anchorage for berthing vessels, a unique feature in harbour technology which was attempted later by the Phoenicians.

6. **Malvan** – Malvan was a post Harappan estuarine Port, dating back to 1400 BC. It was located on the banks of an oxbow lake formed by the Dumas branch of the Tapti river.

7. **Vallabhi** – An ancient city located in Saurasthra Peninsula was a flourishing seaport during the Maitraka dynasty from the 5th to 8th centuries CE. It was famous for its catholicity and drew students worldwide.

8. **Bhagatrap** – Barygaza or Bharuch was the most important ancient port. It was a commercial centre situated on the Narmada estuary. It established itself as shipment centre and a ship-building port. It acted as a link port to Asia, Africa, Europe and Mediterranean basin. Bharuch acquired a strategic importance during Maurya and Gupta periods. Around 4000 ships passed through the port.

9. **Kambhat** – Kambhat was a prominent port during 11th to 17th century, was a great seat of a flourishing trade renowned with its silk and gold articles. While indigo and fine buckram, agate and carnelian ornaments were prized products, a good deal of cotton and leather too were also exported.

10. **Mandavi** – Mandavi or the Mart, also called as Maska, was an ancient ship-building centre on the right bank of Rukmavati River. The Port had multi-hued pennants fluttering atop ships from over eighty countries.

11. **Surat** – Surat was positioned on the most important sea routes between Arabia, Europe and the East. The city emerged as a minor trading centre during the 1500s and reached its peak during 16th century. It acted as an export outlet for agro based products from Magdalla Port.
Ports like Jakho, Lakhpat, Tuna, Mundra and Koteswar had successfully been carrying out overseas business along the 352 Km stretch of Kutch seashore.

No. of Ports (GMB Operated Ports) and its functions

1. Magdalla (Surat)
2. Bharuch
3. Bhavnagar
4. Jaffrabad
5. Veraval
6. Okha
7. Jamnagar
8. Navlakhi
9. Mandvi
10.

About the Bhavnagar port

Bhavnagar port is an all-weather direct berthing port for smaller vessels. It has a draught of up to 4 m and is located in the Gulf of Cambay on the West Coast of India. The port is having a Lock gate for tidal advantage.
Present Infrastructure
The port is well connected with the State Highway and B G railway line. The city of Bhavnagar is about 10 kms from the new port. Daily air services are available between Bhavnagar and Mumbai. Nearest international airport is Ahmedabad.

Present facilities
The port has a dry dock for repair of tugs, launches and barges. The port has two workshops—general workshop and running workshop. Flotilla units can be repaired at both these workshops. The general workshop is used to carry out repairs on flotilla units and mechanical instruments.

The running workshop takes care of the day-to-day repairs and maintenance requirements. Both workshops have different sizes of lathe machines, drilling machines and shaping machines. Electric and gas welding facilities, a cutting machine, foundry shop, etc. are also available at the workshops.

The port has a tug boat, Jai Somnath that would be deployed for patrolling of the Bhavnagar-Alang section under the ISPS code. Survey work for the tug boat has already been completed. Electrification in the port area has been completed. Five high-mast towers have been installed at the port and for emergency power supply; 75 KVA DG set is also available.

All the godowns at the port have been repaired and are now available for use. Internal roads of the port are being paved. Recently, the port has also been connected with a broad gauge railway line for which GMB has requested the Railways to continue the line as per the cargo guarantee action plan to be submitted by the trade and the chambers of commerce.

Dry Dock: 1 no.
Tugs: 2 nos.
Barges: 1 each of 250 tonnes
Water Barges: 1 no of 600 tonnes
Harbour Structures
The concrete jetty is 270 m in length and 12.8 m in width. There is no swell or current of any kind. High tide at concrete jetty is 22 minutes earlier than the time given. Vessels that are to berth alongside the concrete jetty must pass through the Lock Gate. Vessels up to 19.8 m width and 143.8 m in length can pass through the gate, but permissible draught is only 4 m. The North quay on the North of the basin is 141 m long and has adequate backup and storage area.

Proposed additional facilities/Investment plans
Revival of Bhavnagar port: The Lock Gate at Bhavnagar port has been repaired and is functional. The jetty work is in progress and is likely to be completed by May 2010.

Jafrabad Port
Geographical Location
Longitude 71° 21' 50"E
Latitude 20° 51' 56"N

Port Capacity
6.04 MMTPA

Commodity Handled
IMPORT: Coal, Coke
EXPORT: Clinker, Salt

About the port
Jafrabad is an all-weather direct berthing port for small ocean-going vessels. It is situated in the Gulf of Cambay on the south-west coast of Saurashtra, inside the Jafrabad Creek on the West Coast of India.

Present Infrastructure
Jafrabad is connected by NH 8E at 20 kms. The broad gauge railway line is available at Rajula which is 22 kms away from the port. Nearest airport is at Diu, which is 75 kms, away from Jafrabad.
Present facilities

Harbour Structures

1. RCC Jetty for loading Clinkers (near ClinkerJetty): length - 211 m permissible draft - 4 m. Loading is done mechanically by conveyor belt.
2. RCC Jetty for loading salt and miscellaneous cargo: length - 45 m
3. Slope for cargo vessel: length - 30 m
4. Fish-landing wharf: length - 450 m

Port Infrastructure and Facilities:

Berthing facilities

- New Clinker Jetty for small coastal steamers, with a working length of 211 m. and 4 m. draft. Small coastal steamers berth at the new clinker jetty for export of Clinker and jetty for export of Coal and Coke on account of M/s Narmada Cement Co. Ltd., Jafrabad. (Subsidiary of M/s Ultra Tech Cement Co. Ltd.)

- RCC Jetty for sailing vessels traffic, with a length of 45 m and a draft of 1 m.

- One fish-loading wharf for fishing activities, with a length of 400 m with suitable draught.

- Three landing slopes, with a length of 30 m and 0.30 m draft for passenger and small boats

Cargo handling equipment
M/s Narmada Cement Co. Ltd., has been taken over by M/s Ultra Tech Cement Co. Ltd to load Clinker through use of their own conveyor belt system which has a speed of 600 MT per hour. They discharge coal by their own cranes and the average discharge is about 9,000 to 10,000 MT per day.
**Warehousing and storage facilities**

There are seven godowns available, with an area of 1,310 sq. mtrs. They have a storage capacity of 2,500 MT. Sufficient open space is available. Private bunkering and ship stores are available.

**Proposed additional facilities/Investment plans**

One fisheries harbour project amounting about INR 17 crore is under procedure.

**Income and Expenditure:**

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<th>Particulars</th>
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<th>AMOUNT</th>
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<tr>
<td>TOTAL</td>
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**APPLICATION OF FUNDS**

**IV** Fixed Assets  
Gross Block 53,495  
Less: Depreciation 15,956  
Net Fixed Assets 37,540  
Add: Capital work in Progress 4,236  
TOTAL(1) 41,775  

**V** Investments  
Investments in Equity Shares 14,050  
Investments in Bonds & Deposits 3,419  
TOTAL(2) 17,468  

**VI** Current Assets and Loans and Advances  
Stores 358  
Sundry Debtors 26,648  
Deposit works for other Departments 2,136  
Loans & Advances 288  
Cash & Bank Balances 31,094  
Total Current Assets(3) 60,524  

Less:  

**VII** Current Liabilities & Provisions  
Current Liabilities 20,761  
Provisions 6,828  
Total Current Liabilities(4) 27,588  
NET CURRENT ASSETS(3)-(4) 32,936  

**VIII** Miscellaneous Expenditure  
(to the extent not written off)  
TOTAL 92,180
4.2 **New Port Policy (Minor Ports)**

**Introduction**

Gujarat, situated on the western coast of India, is a principal Maritime State endowed with favourable strategic port locations. The prominence of Gujarat is by virtue of having nearly 1600 kms long coastline, which accounts for 1/3 rd of the coastline of India and being the nearest maritime outlet to Middle East, Africa and Europe.

In 1991, Government of India initiated various economic, trade and industrial reforms, through the policy of liberalization to enhance industrial and trading activities. The rationalization of import duties and stress on export promotion has seen imports increasing by 24% and exports by 25%. Gujarat State is one of those frontline States that can take up the policy of liberalization and privatization announced by the Government of India through a process of globalization.

Gujarat itself is experiencing a phenomenal interest in investments both from Mega-Industrial sectors within the country and also from top Multi-National abroad. Investments to the tune of $30 billion are already in the pipeline. From an analysis of the present investments and those that are flowing in, one can perceive a particular trend which is manifesting itself - investments are converging in and around potential port sites.

Investments of over Rs.16,000 crores are taking place at Hazira, Rs.15,000 crores are planned at Varga, Rs.20,000 crores are planned in areas near Pipavav and near Jamnagar port locations. The logic of locating these industries is rather clear, viz. the large business houses want to import industrial raw-materials and want access to the international market through sea routes, which is definitely more viable and feasible as against the surface transport or air transport. Another major advantage is that, Gujarat has a vast hinterland consisting of fast developing Northern and Central Indian States generating cargo.

The States of Rajasthan, Madhya Pradesh, Western Uttar Pradesh, Delhi, Haryana,
Punjab, Himachal Pradesh and Jammu & Kashmir, which constitute 35% of the total exports, are potential customers for Gujarat ports. Export of surplus foodgrains from these major grain producing States and import of fertilizers to these major consumers, offer great potential for growth of cargo in near future. Any economic development, taking place in these hinterland States have a direct bearing on Gujarat port.

Indian ports handled 197 million tones of cargo in 1994-95, 90% of which were contributed by the Major ports. The port activity, in terms of ship turnaround time, waiting time and average ship per day output, has a significant influence on development scenario. The existing major ports are under tremendous pressure to handle the increasing cargo traffic, resulting into demurrages and huge loss in foreign exchange.

In the global scenario, during the last decade, new technology development has taken place, especially in the container handling equipment and new port layout to accommodate container traffic. This technology developments demands new institutional set-up and major investments to help in solving the problems of port modernization. With the global shipping industry introducing supersized vessels, the 'Port of Future' will be totally integrated with inter-modal cargo flows and co-oriented sea vessels and hinterland vehicle arrivals and departures. The new proposed port locations of Gujarat are highly sited to adapt itself to the current technology development in the areas of communications, automation, cargo handling and ship technology, which needs drastic changes in the physical layout of ports as well as equipments, operations and managements. It is in this perspective that it is imperative, Gujarat approaches the problems, by focusing on an integrated strategy, incorporating 25 to 30 years future demands scenario. It makes itself evident, that any globalisation that is to take place, has to take place through ports of international class.
Present Status of the Gujarat Ports

Along the 1600 Kms. of coastline of Gujarat, there are 41 ports, of which Kandla is a major port. Out of remaining 40 ports, 11 are intermediate ports and 29 are minor ports under the control of Gujarat Maritime Board. These ports can be broadly classified into three categories.

I. Three all weather ports viz: Porbandar, Okha and Sikka with all weather direct berthing facilities.
II. Seven ports are all weather lighterage ports.
III. The remaining thirty ports are fair weather lighterage ports for sailing vessels and fishing boats.

The minor and intermediate ports of Gujarat handled about 8.5% of national shipping cargo. Nevertheless, Gujarat ports handle about 16 million tones of cargo, which accounts for 70% of the total cargo handled by all minor ports of India.

Drafts of 8 to 10 meters are available at Porbandar, Okha and Sikka, where ships ranging from 15000 to 25000 tonnes are directly berthed. Except for Porbandar which handles container cargo for fish exports, container cargo handling facility do not exist in other ports. There is limited scope for expanding berthing facilities in the existing minor and intermediate ports.

All that is possible is, to enhance the handling facilities by modern equipments, which can increase the traffic from present 16 million tones to 24 million tones. Due to the inherent limitations in the existing ports, it is essential to identify potential "green field sites" on Gujarat coast for port development.

With major coastal based mega cement plants coming up in Kutch and Saurashtra, cement and clinker exports through sea will play a major role in marketing of cement nationally to Middle-East countries opens up avenues for locating petroleum refineries and storage of petroleum products for hinterland consumption. Export of salt and import of coal are other major potential cargo apart from the existing items of import and export.
As indicated earlier, the massive spurt in industrialization also opens up scope for import of industrial raw materials and export of finished goods to the global market through ports. The vast coastline of Gujarat, also offers tremendous potential for marine fisheries and subsequent processing and exports. Over and above this, any development in the hinterland State have a direct impact on Gujarat ports.

Against this future potential, at present, the ports are being planned totally in insolation, without taking into consideration the requirements of industry, trade and commerce. No integrated plan exists to create ports of international design and status, linked with hinterland with multi-channel roads that carry cargo efficiently and other related infrastructure.

Pipavav port is an ideal location for a direct berthing port facility. Gujarat Maritime Board, alongwith a private sector company, is developing this port as a joint venture project. An estimated Rs.260 crores is likely to be invested in Pipavav port during the coming five years, developing it into a modern port in the Saurasthra region.

**Current Details of Non–major ports**

Non-major ports in Gujarat have registered a growth of 11.31 % in cargo handling in the first quarter of 2011-12 at 63.20 million tonnes, Gujarat Maritime Board (GMB) sources on July 2011. GMB run ports maintained upward trend in cargo handling at 63.20 MT in the first quarter ending June against 56.84 MT handled in the corresponding period a year ago, showing a growth of 11.31 %.

Gujarat continues to lead in cargo traffic handling. The cargo handling capacity of Gujarat’s non-major ports has increased from 73 MT in 2000-01 to 231 million tonnes in 2010-11 as compared to national growth of 368 MT in 2000-01 to 821MT in 2009-10. The cargo traffic has increased at ports like Magdalla, Hazira, Bedi, Okha, Porbander, Navlakhi and Dahej. Cargo traffic at Dahej port has and Traffic at Magdalla and Hazira port combined has increased.
Objectives

Based on the above mentioned emerging scenario, the following objectives are identified for the new Port Policy.

1. To increase Gujarat's share in the Export and Import sector, in national and international Trade & Commerce, in pursuance of liberalization and globalization policy.

2. To decongest the overburden on existing major ports on Western India to cater on the needs of increasing traffic of western and northern States, by providing efficient facilities and services and to support the country's domestic and international trade.

3. To handle 100 million tones of cargo in Gujarat Maritime water accounting approximately for 25% of India's total cargo by 2000 AD.

4. It is estimated that 50% of total industrial investment coming to Gujarat will be port-based.

5. Taking fullest advantage of the strategic location of Gujarat coast, in the World Maritime Scenario.
   - To encourage ship building, ship repairing and establish manufacturing facilities for Cranes, Dredgers and other Floating Crafts.
   - To provide facilities for coastal shipping of passenger and cargo traffic between Kutch, Saurashtra and South Gujarat and further extension of these services to important places like Bombay, Goa etc.

6. To fulfill future power requirements of Gujarat.
   - by establishing barge mounted power plants.
   - by providing exclusive port facilities for importing different kind's of power fuels, etc.

7. To attract private sector investments in the existing minor and intermediate ports and in the new port locations.
**Strategy**

Gujarat envisages an integrated port development strategy, consisting of creation of port facilities, industrialization and development of infrastructure facilities like roads and railways in the hinterland. It is estimated that around 3 Billion Dollars (Rs.10,000 crores) would be required to create new port facilities alongwith necessary infrastructure in the coming 5 years.

In view of the fact that ships of large sizes are used in the transportation, for economies of scale in international trade, ports would be developed with direct berthing facilities and speedy mechanical handling facilities, so as to reduce waiting period of the ships and saving in the cargo expenses. To expedite creation of port facilities by 2000 AD, it is proposed to have the participation of private enterprise in the development of port infrastructure. The following strategies are proposed.

1. **GUJARAT MARITIME MASTER PLAN**

With the liberalization of trade and industrial policy, the cargo which are likely to be generated by 2000 AD. in Gujarat and hinterland Stated of Northern and Central India, are likely to increase enormously. The industrialization of Gujarat will coincide with port development and both these activities would be synchronized so that the port has assured cargo right from the beginning and industries avail port facilities immediately. It is expected that 50% of the entire cargo for each of the new ports will be provided by industries in the near vicinity of port locations.

Port development is an integrated approach covering industrial development, power generation and infrastructural development. To co-ordinate this integrated approach and to achieve a balanced regional development, Gujarat Maritime Board will evolve a master-plan for each of the new port locations.
2. **PRIVATE INVESTMENT IN THE MINOR AND INTERMEDIATE PORTS**

The existing ports under Gujarat Maritime Board, which handle 16 million tones of traffic, have shown a growth rate of 22% during the last two years. The demand on these existing ports is increasing day by day. In order to handle as much cargo as possible, during the period of 5 years till new ports are likely to come into operation, it is decided to invite private investments in the existing minor and intermediated ports. General guidelines of privatization are as follows:

1. Incomplete works of wharf/jetty/quay of GMB will be privatized.
2. Private entrepreneurs will be permitted to install modern mechanical handling equipment on the wharf/jetty/quay
3. Privatisation of the construction of new wharves/jetties in selected sites.

The entrepreneurs making investment in these locations will be given 'outing priority' for period of 5 years from the date on which it is awarded. For Projects with higher investment, Gujarat Maritime Board will consider to enhance this period.

The entrepreneurs should assure a minimum cargo handling from the said landing place. The party has to pay full wharfage charges to Gujarat Maritime Board for cargo undertaken on such structures. The Gujarat Maritime Board has already identified such sites and activities in the existing minor and intermediate ports. The privatization of these facilities will be done by open tender bids within one month.

With liberalization of Parallel Marketing of Petroleum products by Govt. of India, the demand for port facilities for handling LPG, Kerosene, HSD, other petroleum products and liquid chemicals have increased tremendously. Looking to the specialized facilities and high safety standards required for handling these commodities, the existing minor and intermediate ports are not found suitable to handle such cargoes.

In the new port policy, specific new port locations have been identified to handle petroleum cargoes. Nevertheless, Gujarat Maritime Board has identified one location in one of the existing intermediate ports to extend facilities for handling these cargoes, by privatization.
4. DEVELOPMENT OF NEW PORT SITES

Gujarat Maritime Board has identified 10 "Green Field" sites for development as direct berthing deep water ports. These sites have been identified taking into consideration the availability of draft, general marine conditions, minimum burden on the existing infrastructure, proximity to the hinterland cargo and promotion of regional development concept. Looking to the location and generation of cargo, each port has been earmarked for specific commodities to facilitate the movement of cargo through the existing infrastructure and also to ensure the financial viability of each project. The following ports are identified and short details of draft condition, cargo and nature of the port are given below.

Brief details of identified sites for development

1. DHOLERA

Dholera is situated on existing short route from Ahmedabad to Bhavnagar and is 30 kms. away from the nearest town of Dhandhuka. This port, in Malclon channel, can be developed for general cargo. At the suggested location, a draft of 10 mtrs. is available within a distance of 3 kms. from the off-take point on the shore - near village Jaswantpur. This will be an all weather direct berthing port for general cargo.

2. MAROLI

This is a virgin site, north of Bombay, having favourable features for development as an all weather port with protective structure like breakwater. The development plan envisages the port facilities in 10 mtrs. depth at 3 kms. from the shore to handle industrial and general cargo, the major portion of the approach is running on high bank and shallow waters.

3. VANSI-BORSI

This location is indentified for handling petroleum and liquid chemical cargo of immediate hinterland. it is suggested to provide adequate matching port facilities in 10 mtrs. depth at 5 kms. from the shore with break water arm. The proposed site is 13 kms. from the nearest broad gauge railway link at Navsari and is 30 kms. south of industrial town of Surat.
4. **HAZIRA**
Magdalla (Surat), located on the bank of river Tapi, is an existing intermediate port handling general cargo. On the right bank of this river and near Hazira lighthouse, Mega Industrial Houses have established their own captive port facilities. On the western side of these facilities, and near Suvali point, a deep draft port is suggested. The berthing facility for industrial cargo will be provided in 15 mtrs. contour at a distance of 3 kms. from the shore. A protective structure in form of a breakwater will also be necessary.

5. **DAHEJ**
Dahej, 42 kms. from the District Headquarters of Bharuch, is witnessing a massive industrialization with substantial capital investments. It is suggested to develop an all weather port for large ocean-going vessels at a location 2.0 kms. from the shore, where an adequate depth of 18 mtrs. is available. The port development envisages handling industrial cargo. Alternatively a 'lagoon' port is also possible with excavation on land and dredging of the channel for a 10 mtrs. deep harbour.

6. **MITHIVIRDI**
The site with a very favourable marine features, located 40 kms. south of Bhavnagar and 10 mtrs. north of the existing ship breaking yard at Alang, is suggested to be developed as an all weather port for steel and automobile exports. The port facilities will be provided in deeper elevation of 20 mtrs. available at an approximate distance of 3 kms. from the shore.

7. **SIMAR**
Simar is 27 kms. south-west of existing minor port of Jafrabad and 90 kms. east of Veraval. The availability of draft at the location is quite favourable having running of 20 mtrs. contour, just at a distance of 1 kms. from the shore to accommodate ocean-going vessels of 1,00,000 DWT. This port is suggested for development to handle LNG, Coal and other fuel requirements for power generation to be located in the vicinity of the port. This site has a natural protection of "Diu" Island. Power can be
"evacuated" or "displaced" by Power grid system catering to the rest of the country.

8. **POSITRA**

Positra, situated near intermediate port of Okha, is at the entrance of Gulf of Kutch having natural protection from south-west monsoon conditions. It will consist of Positra-1, an exclusive modern container port at the historic Dwarka Beyt Island with 12 mtrs. draft. Positra-II will be a petroleum and coal port with a draft of 18 mtrs. The nearest railway broad gauge link is only 15 kms. from the port site.

9. **ROZI (BEDI)**

The existing intermediate port of Bedi currently handles 2.5 million tones of cargo per annum by lighterage operations. It is proposed to develop an all weather direct berthing port near the anchorage to handle bulk carriers at a distance of 5 kms. from Rozi Pier at a depth of 15 mtrs. to be exclusively developed as an "Agriculture Port" with modern handling facilities.

10. **MUNDRA**

Mundra, 70 kms. west of the major port of Kandla, is proposed for development as an all weather direct berthing port to handle general cargo. The location near Navinal Lighthouse having a draft of 20 mtrs. at a distance of approximately 2.5 kms. is suggested for development of port facilities to accommodate large ocean going vessels of 40,000 tonnes. General cargo like salt, cement, minerals, food grains etc. can be handled at this port and it is the nearest location to Rajasthan.

In today's globalisation scenario, Dubai and Singapore have been developed as "Free Ports". Looking to the strategic Maritime location of Gujarat coast, one of the new port locations can ideally be developed as a "Free Port". Government of Gujarat will request Government of India to declare one of these ports in Gujarat as "Free Port". Out of the identified 10 port locations, 4 ports will be developed by the State Government and 6 ports will be open for total private investment.
2) Ports to be developed by Gujarat Maritime Board. The following ports will be developed by Gujarat Maritime Board alongwith consortium of State Government public sectors and/or consortium of private sector companies.

- **Rozi (Bedi)**: Agriculture Port
- **Positira**: Container
- **Dahej**: Industrial Port
- **Mundra**: General Cargo Port
- **Vansi-Borsi**: Petroleum & Liquid Chemical Port
- **Maroli**: Industrial Port

The ports will be privatised through a global tender bid. Gujarat Maritime Board will do a preliminary techno-economic feasibility report of all these five locations except Dholera, through a global bid to facilitate prospective bidders. Dholera, being an ancient port and privatization bids were invited in the past, no techno-economic feasibility will be done for this location. Dholera port will be the first port to be opened up for privatisation by global tendering. For remaining locations based on the preliminary techno-economic study, global tenders will be invited for privatization.

General guidelines are given below:

These port locations are to be given BOMT (Build, Operate, Maintain and Transfer) basis. The investment in infrastructure projects like ports being capital intensive, with higher gestation period compared to other sectors of investment, Government of Gujarat is very particular that the port projects taken up by private entrepreneurs should be profitable proposition to them.

The viability of port project depends upon the location, the maritime conditions, scale of investment and the kind of cargo to be handled. The port project has to be assured at a reasonable rate of return after accounting for capital recovery and interest repayment. Hence, it is essential that each port project is evaluated based on an investment analysis; consisting of capital cost, revenue receipts, revenue expenditure and capital recovery. Gujarat Maritime Board will study the financing pattern adopted
by the World Bank and the Asian development Bank and other Financial Institutions
to evolve a comprehensive package.

**Highlight Loading/Unloading**

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<td>360.24</td>
<td>376.76</td>
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<td>501.05</td>
<td>447.09</td>
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<td>534.56</td>
<td>555.56</td>
<td>611.04</td>
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<td>874.28</td>
<td>974.93</td>
<td>1080.93</td>
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<td><strong>Total</strong></td>
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<td>893.48</td>
<td>971.28</td>
<td>1080.76</td>
<td>1324.42</td>
<td>1475.98</td>
<td>1528.02</td>
<td>2059.81</td>
</tr>
</tbody>
</table>

**Source**: Gujarat Meritime Board  
Table: 10 B

The overview of Traffic handled at Major Ports, Non Major Ports of India is as under.

GMB has handled traffic of 205.51 MMT during the year 2009-10 compared to the traffic 153 MMT handled for the year of 2008-09.

GMB has attained a considerable Growth Rate of 34% in the year of 2009-10 compared to previous year. This is an achievement for the Gujarat State economy and GMB as well.

Looking to the table appended hereunder, Total National Traffic Growth Rate is 13.14% approximately. Major Ports Traffic Growth Rate is 5.90% and the growth rate of Non Major Ports is 35.07%.

**Import Growth Rate is 33.73% and Export Growth Rate is 37.39%**.  
**Source**: Gujarat M. Board 2009-10

**TABLE 11**

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Ports</th>
<th>Traffic (in MMT)</th>
<th>Growth Rate (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Major Ports</td>
<td>558.22</td>
<td>5.90%</td>
</tr>
<tr>
<td>2</td>
<td>Non Major Ports</td>
<td>258.32</td>
<td>35.07%</td>
</tr>
<tr>
<td>3</td>
<td>National Traffic</td>
<td>816.55</td>
<td>13.14%</td>
</tr>
<tr>
<td>4</td>
<td>GMB Ports</td>
<td>205.51</td>
<td>34.32%</td>
</tr>
<tr>
<td>5</td>
<td>Kandla Port</td>
<td>78.47</td>
<td>8.66%</td>
</tr>
</tbody>
</table>

**Source**: Gujarat M. Board 2009-10
Cargo handling at non-major ports up 12.34% in FY 2011

The non-major ports in Gujarat have registered a traffic growth of 12.34 per cent over last year with cargo handling rising from 206 million tonnes in 2009-10 to 231 million tonnes in 2010-11.

This traffic growth was also significant compared to growth rate of 1.1% achieved in this FY upto February 2011 by the major ports administered by the central government, a statement issued by Gujarat Maritime Board (GMB) said.

Major traffic growth was achieved by the ports at Mundra (old), Mundra (new), Bhavnagar, Sikka, Dahej by registering a growth of 55 per cent, 28 per cent, 523 per cent, 8 per cent and 14 per cent.

Mandvi port observed a complete change in the traffic as total traffic handled was 2.15 lakh tonnes at the port against almost nil traffic reported in the previous year. The container traffic has also shown significant growth at Mundra and Pipavav with 38 per cent growth in total tonnage handled. Meanwhile, the total port capacity of the Gujarat's non-major ports grew by 16 per cent this year, reaching 284 million tonnes per annum compared 244 million tonnes last year.

This capacity addition was achieved due to expansion of Magdalla jetty with a capacity of 15 million metric tonnes per annum (MMTPA) by Essar group, coal terminal at Mundra to 15 MMTPA, Fifth berth by Reliance group at Sikka with 5 MMTPA, solid cargo terminal at Dahej with 3 MMTPA, block wharf at Okha with 1MMTPA and revival of KRIBHCO jetty with 1 MMTPA.

Greenfield Ports

GMB under its Port Privatisation Model has been actively promoting and developing Greenfield Ports. It has identified 11 Greenfield sites to develop all weather direct berthing ports in participation with well known private port players. These capital incentives port projects are being developed under BOOT policy (Build Own Operate Transfer) and will be transferred back to GMB after completion of 30 years BOOT period.
Developed Greenfield Ports

Pipavav Port:
The Port of Pipavav has been developed in joint venture with GMB and Gujarat Pipavav Port Ltd. (GPPL) The Port is currently being developed single handedly by GPPL under BOOT Policy. It became operational since 1996 and takes pride for the presence of International players like Mearsk. The Port of Pipavav also takes pride in being the first port in India to receive double-stacked container trains, which has a capacity of carrying 180 TEUs as against 90 TEUs carried in a single stack train. GPPL has taken up its expansion plan vigorously with several developmental projects. Of which, development of 385 mt container berths has been completed, which will augment container handling of the port upto 1.07 Million TEUs. In the year 2008-09, the port handled total 2.02 million tones cargoes and containers 0.2 million TEUs.

MUNDRA PORT
Gujarat Adani Port Ltd. (GAPL) – now, Mundra Port SEZ Ltd. (MPSEZL) is developing the Mundra Port under the BOOT Policy. The port has been operational since 1998 with 4 multipurpose berths and with a berthing efficiency of 80000 DWT. GAPL has established broad gauge rail link of 57 km. which is operational since 2002. The port has also facilities of double-stacked container rail. The port has handled about 25.78 million tons cargo and 1.15 million TEUs containers during the year 2008-09.

DAHEJ PORT
Dahej Port has been envisaged by Petronet LNG Ltd. and GMB. The port has been operational since 2004 with a terminal handling capacity of 10 MMTPA LNG handling. The port has handled 6.46 million tones of LNG during the year 2008-09. The company is also constructing a solid cargo berth at its port which is expected to be completed by June 2010/I.

Chemical Port Terminal
Further augmenting its role Dahej Port has developed a Chemical Port Terminal at its base, in 2001.
HAZIRA PORT
Hazira Port is being developed by Hazira Port Pvt. Ltd., a company promoted by international Oil and Shipping player called Shell Gas B.V. The port which started its operation in 2005 is in plans to develop a non LNG terminal. The Port handled LNG cargo of about 1.56 million tones in the year 2008-09.

GMB traffic

TABLE 12
GMB traffic From 2003-04 to 2007-08

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Import</td>
<td>555.56</td>
<td>611.04</td>
<td>703.99</td>
<td>874.30</td>
<td>974.93</td>
</tr>
<tr>
<td>2</td>
<td>Export</td>
<td>337.92</td>
<td>360.24</td>
<td>376.76</td>
<td>450.12</td>
<td>501.05</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>893.48</td>
<td>971.28</td>
<td>1080.75</td>
<td>1324.42</td>
<td>1475.98</td>
</tr>
</tbody>
</table>

Source: Gujarat Maritime Board

Intermediate and Minor Ports
The Intermediate and Minor Ports of Gujarat handled a total cargo of 1528.14 lakh tonnes during the year 2008-09 as against 1475.98 lakh tonnes handled during the preceding year, showing an increase of about 3.53 %. The main items of imports through intermediate and minor ports are Crude Oil, Neptha, Coal, Iron ore, Rock phosphate, Fertilizer, Ammonia, Machinery, Ethylene, Paraxylene, Clinker, Cement, Steel Coils, LPG, propylene etc. The main items of exports through these ports are Neptha, Petrol, Clinker, Cement, Oil cakes, Bauxite, Salt, Soda Ash, Foodgrain etc. During the year 2009-10 (April – December 2009) intermediate and minor ports have handled the total cargo of 1497.34 lakh tonnes.

Liberalization policy in ports and benefits to Gujarat
The Government of India has accepted the liberalization policy. The main goal of the liberalization policy is to develop important sectors through private investment. The Government of Gujarat has implemented the same in port sector. The state of Gujarat has formulated a port policy in December 1995 to fulfill the requirement of import/export demand. As per the port policy, Gujarat Maritime Board has identified 10 green field sites for development as direct berthing deep water ports.
Gujarat's ports have not just enhanced its industry's efficiency, but also spawned a slew of new industries like ship-building. In contrast to the rest of India, where it is the government that predominantly owns and manages ports, Gujarat has implemented various forms of port liberalisation since the 1990s. This has helped it become the country’s fastest growing state.

Gujarat’s economy has grown at an average of 10.14 per cent per year from fiscal year 2001 to fiscal year 2006, the last five years for which data are available. This is comparable with China’s average growth rate since 1978, and is distinctly faster than the growth of the other Asian tigers in the 15 years before the Asian financial crisis of 1997.

**TABLE 13**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Gujarat</td>
<td>10.10</td>
<td>8.20</td>
<td>5.10</td>
</tr>
<tr>
<td>W Bengal</td>
<td>6.30</td>
<td>7.00</td>
<td>4.70</td>
</tr>
<tr>
<td>Haryana</td>
<td>8.30</td>
<td>5.10</td>
<td>6.40</td>
</tr>
<tr>
<td>Karnataka</td>
<td>5.80</td>
<td>5.90</td>
<td>5.30</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>6.50</td>
<td>5.20</td>
<td>5.60</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>7.10</td>
<td>8.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>4.90</td>
<td>6.00</td>
<td>5.40</td>
</tr>
<tr>
<td>Punjab</td>
<td>4.20</td>
<td>4.80</td>
<td>5.30</td>
</tr>
<tr>
<td>ALL INDIA</td>
<td>7.00</td>
<td>6.50</td>
<td>5.50</td>
</tr>
</tbody>
</table>

*Source: Gujarat Maritime Board*
TABLE 14

LARGEST PORTS, BY STATE
(millions of tons loaded, 2006–07)

<table>
<thead>
<tr>
<th>State / UT</th>
<th>Major ports</th>
<th>Minor ports</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All India</td>
<td>463.80</td>
<td>171.90</td>
<td>649.20</td>
</tr>
<tr>
<td>Gujarat</td>
<td>53.00</td>
<td>123.60</td>
<td>176.60</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>97.20</td>
<td>11.80</td>
<td>109.00</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>82.10</td>
<td>0.60</td>
<td>82.70</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>56.40</td>
<td>18.60</td>
<td>75.00</td>
</tr>
</tbody>
</table>

Source: Gujarat Maritime Board

The only major port that the central government built in Gujarat was at Kandla, in the remote Gulf of Kutch. This port had only a meter-gauge railway and so could not connect with the major broad-gauge railways of the hinterland. Road links were also poor. So international traffic to and from North India, which in the 18th and 19th centuries passed mainly through Gujarat’s ports, passed in the 20th century mainly through Mumbai, Kolkata, and Visakhapatnam.

However, the state’s resourceful politicians found a way out. The Constitution nowhere defined the size of a major or minor port. Major ports were simply those covered by a central government law. Thus, Gujarat found that it could keep expanding its “minor ports” without limit, even if they became larger than some major ports! The state now has as many as 40 minor ports including so-called captive ports built by big industries.

For most of the last decade, India’s biggest port has been Visakhapatnam in Andhra Pradesh. But in 2004–05, the minor port of Sikka in Gujarat overtook Visakhapatnam to become India’s top port. The latest data show that Visakhapatnam once again became number one in 2006–07, with 56.3 million tons of cargo compared with Sikka’s 55.9 million tons. However, projections suggest that Sikka will soon regain the top spot, and handle 127 million tons by 2020.
The state’s deeply indented shores provide 1,600 kilometers of coast, the most of any state. Almost all India’s coastline is hit by seasonal monsoons, necessitating the construction of costly breakwaters (jetties without breakwaters have to stop loading in the monsoon months). The Gulf of Kutch in Gujarat is the only coastal area in India that is monsoon-free, and so ports and jetties located there can function all year without breakwaters.

The Gulf of Kutch also has the deepest water: a natural draft of 17 meters without dredging is available at ports like Mundra and Posittra, deep enough to accommodate the biggest container ships and large bulk carriers. Very large crude carriers of up to 400,000 tons can anchor at single-point moorings in deep waters many kilometers from the shore, and unload their cargo through pipelines. No other part of India’s long coastline can accommodate such large vessels.

**Contribution to Development**

One way of measuring the value added by the state’s port-led development policy is to look at the proportion of Gujarat’s international trade that serves the hinterland of North India, and the portion that serves the state’s own industries. One study estimates that as much as 70 per cent of the state’s imports are used within the state, and only 30 per cent go to the hinterland. This suggests that Gujarat’s ports have not been gateways to North India as much as gateways to Gujarat’s own industries. It suggests that ports have contributed, and will continue to contribute, a great deal to the addition of value within the state and to its overall growth.

Three of India’s biggest cement companies — Grasim, Gujarat Ambuja Cement, and Sanghi Industries — have a total of seven captive jetties in the state, and other major Indian and international corporations have set up captive jetties or specialised terminals as well. By far the biggest captive jetties are those of Reliance Industries Ltd at Sikka, which currently load 52 million tons per year of crude oil, refined products, and chemicals. According to projections made by Crisil, additional port capacity to be created by 2020 will be 127.57 million tons at Sikka, 97.86 million tons at Mundra, 45.23 million tons at Pipavav, and 37.07 million tons at Dahej. To put these figures in perspective, Visakhapatnam, India’s biggest major port, handled no more than 55.8 million tons in 2005–06.
The new ports have also helped bring forth new industries. The most important example of this is the emergence of a global pipeline hub at Anjar, near Mundra port, which caters to the burgeoning oil and gas industry worldwide, as well as to Indian needs for water and sewerage pipes. Five companies have already set up a combined pipeline capacity of 1.5 million tons per year, and this is being doubled. These companies make the entire range of gas, oil, and water pipes, including the extra-wide and thick pipes required for the deepest ocean waters.

Heavy plate, which is needed for manufacturing oil and gas pipelines, is currently being imported from Europe. To overcome this dependence, Welspun Gujarat Stahl Rohrer has set up a captive plate mill, and plans to set up a captive steel plant too. Jindal Saw has set up a blast furnace to produce iron for ductile pipes. And other companies are also contemplating steel-making facilities. So, the pipeline hub is becoming a steel hub, too. The new steel plants use imported coal and iron ore, so their port location is ideal. Pipe factories have also been built at Dahej. BK Goenka, CEO of Welspun Gujarat Stahl Rohrer, estimates that India now accounts for almost a quarter of world steel pipe exports.

Another example of port-induced industrialisation is the ship-building industry. For a long time, Gujarat was famous for ship-breaking rather than ship-building. It boasted the biggest ship-breaking yard in the world at Alang. Alang is now declining, but new shipyards and repair facilities are sprouting. ABG Shipyards is setting up a major shipbuilding facility at Dahej, capable of constructing very large crude carriers.

The Adani group is setting up another major shipyard at Mundra, capable of building Panamax-size bulk carriers. SKIL Infrastructure Ltd is setting up a major shipyard at Pipavav, where it earlier built a private port. L&T has long been building offshore platforms and support vessels at Hazira. Smaller facilities for building and repairing ships are operated by Alcock Ashdown in Bhavnagar, and Orum Shipyards in Porbandar.
Gujarat’s future port policy appears to have two prongs. One is to become India’s main gateway to the North Indian hinterland. The second is to create Special Economic Zones adjacent to its new ports to attract export-oriented industries. Gujarat has created special purpose vehicles (SPVs) for building rail links. The state government, private port players, and the railways all participate in these SPVs. Through SPVs, broad-gauge links have been built between the new ports at Mundra and Pipavav and the Delhi-Mumbai rail artery, thus providing national connectivity to the minor ports.

To meet India’s burgeoning traffic needs, the railways now plan to build a new, dedicated Delhi-Mumbai freight corridor. Gujarat is getting ready to link its ports to this new rail corridor. By doing so, it hopes to get the lion’s share of hinterland traffic. It can also hope to add at least 10 per cent in value to hinterland cargo through consolidation, packaging, and processing. Gujarat has pioneered the concept of port liberalisation in India and used this to become the country’s fastest-growing state. These results hold salutary lessons for other Indian states.