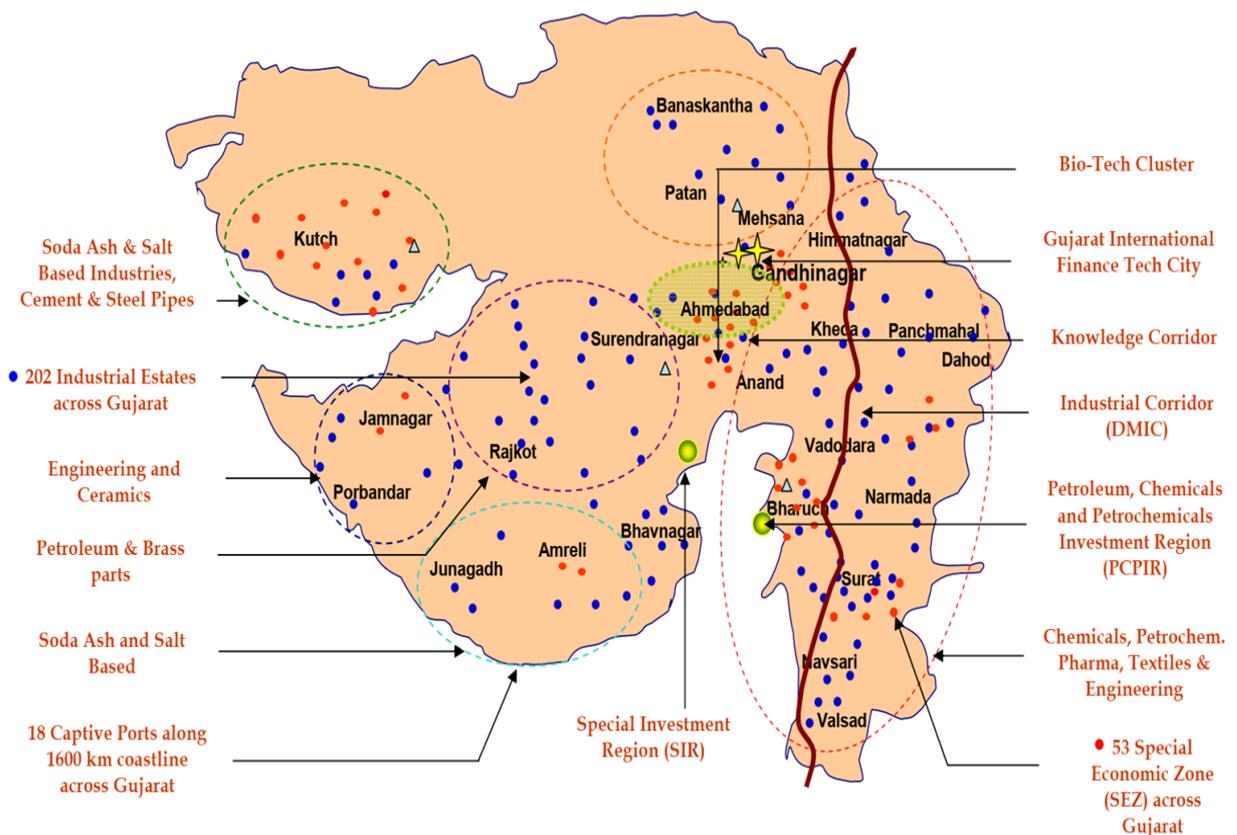


The Blue Economy in Gujarat

Exploring the Socio Economic Political and Ecological Implications on the Coastal Communities

A WORLD CLASS BUSINESS DESTINATION



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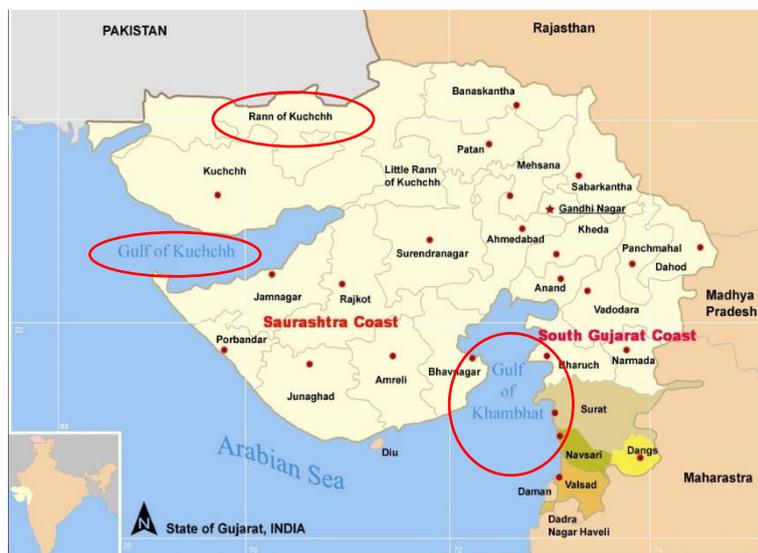
CONTENTS

INTRODUCTION	2
STATUS OF COASTAL AND COMMUNITIES	3
COASTAL INFRASTRUCTURE DEVELOPMENT PROJECTS	5
Gujarat Infrastructure Development Board (GIDB)- BIG 2020.....	5
Ports -Gujarat Maritime Board (GMB).....	9
Gulf of Khambhat Development Project	11
ADOPTION OF BLUE ECONOMY(BE): Gujarat	13
Gujarat's BE Influential Policies and Legal Frameworks: An Overview.....	13
Port-led Region Development – Gujarat Port Policy Reforms	13
Gujarat a Global Business Destination - Industrial Policy 2020	13
Sagarmala- Port led Prosperity	14
FIELD OBSERVATIONS	19
<i>Focus Group Discussions (FGD) with Kandla Small-Scale Fishers</i>	20
Focus Group Discussions (FGD) with Fishers near Alang Shipbreaking Yard	21
<i>Focus Group Discussions (FGD) with Bharuch Estuarine Traditional Fishers</i>	21
FINDINGS AND ANALYSIS	22
SOCIO-ECONOMIC IMPLICATIONS	22
<i>Strategic Exclusion and Eviction from coastal region</i>	22
<i>Economically Unviable Projects</i>	22
ECOLOGICAL IMPLICATIONS	23
<i>Destruction of Gulf Ecosystem</i>	23
<i>Degradation of Coastal Ecosystems</i>	23
<i>Denial of Fish Stocks</i>	24
POLITICAL IMPLICATIONS	24
CONCLUSION	25
RECOMMENDATIONS	25
<i>References</i>	26

CHAPTER II

INTRODUCTION

Gujarat has a wide range of marine and inland aquatic resources. It has longest coastline of 1,650 km which accounts for 19.70 per cent of the total coastline of the country and about 46 per cent of the western coastline of India. It has a continental shelf area of 1,84,000



sq.kmand an Exclusive Economic Zone (EEZ) of 2,14,000 sq.km. The Gujarat coast can be broadly divided into five coastal regions. These include, (i) Gulf of Kachchh, (ii) Gulf of Khambhat, (iii) Saurashtra Coast (iv) South Gujarat Coast and (v) Rann of Kachchh. Out of the three gulfs in India, the Gujarat has two Gulf of Kachchh and the Gulf of

Khambhat. There are 12 coastal districts namely Valsad, Navasari, Surat, Bharuch, Anand, Bhavnagar, Amreli, Junagadh, Porbandar, Jamnagar, Rajkot and Kutch in Gujarat. According to the CMFRI Marine Census 2010, Gujarat has 247 marine fishing villages, of which maximum number of 68 villages are located in Gulf of Kutch.

Gujarat is gifted with Inland fishery resources in the form of rivers, canals, estuaries, ponds, reservoirs, brackish water impoundments, waterlogged areas and so on. The total length of the rivers and tributaries of the state is around 3865 km, area of reservoirs is 3.48 lakh ha and estuarine waterbody covers 212.30 km² of area. The major rivers such as Narmada, Tapi, Sabarmati and Mahi enrich the both inland and coastline of Gujarat. Gujarat is having second largest brackishwater potential area

Inland Fishery Resourcesⁱ	
Rivers & canals (Km)	3,865
Reservoirs (Lakh ha)	2.43
Tanks & ponds (lakh Ha)	0.71
Flood plain lakes/derelict waters (lakh Ha)	0.12
Brackish water Area-Khar lands (lakh ha)	3.76
Potential Area (lakh ha)	1.87
Estuarine Area (lakh ha)	0.21
Brackishwater fish landing centres	82

(376000 hectares) in country next to West Bengal (405-500 hectares) in 14 coastal districts that contains 1600Km of coast line. Therefore, it is estimated that 71 inland fishing villages with 2.31 lakh fishermen population. During the 2019-20, the 1.57 (in lakh M.T.) was accounted as the Inland Fish Production in Gujarat. The state has taken necessary steps in order to achieve the targets fixed for both inland and marine fish production in State. However, in the last few

decades, fisheries sector of Gujarat has undergone a several massive changes, recently *Blue Revolution Centrally Sponsored Scheme* further added fuel to the existing export market led development of fisheries sector.

STATUS OF COASTAL AND COMMUNITIES

Gujarat's coastal ecosystems namely the Rann of Kachchh, the Saurashtra coast, Gulf of Kutch, Gulf of Khambhat and the South Gujarat coast has a distinct variation in the wetland and landforms which contributes variation in climate, substrate constituents and topography. The coastal wetlands constitute the major portion (92.3%) of the total wetland area in Gujarat (27,175 sq. km). These coastal wetlands are a unique marine biodiversity, with a large mangrove forests ecosystem occupying the creeks and tributaries all along the coastal belt of Gujarat. This green coastal cover act as an eco-barrier and protects the Gujarat coast regions from extreme weather events.

Considering the significance of the coastal wetlands, the government of India and the Gujarat states has marked and declared the coastal region as marine national park and sanctuaries for conservation. The Gulf of Kutch Marine National Park is the first National Marine Park of India which was established in 1982 under the Wildlife (Protection) Act, 1972 of India. The Marine Park has a total area of 162.89 km² with 42 reef Islands on the Jamnagar coast in the Marine (Gulf of Kutch) National Park. Hence, the coastal region is one of the coastal and marine eco-sensitive regions of India.

The *Gulf of Kutch* situated in the northwest corner of India and spread over an area of 7300 km² is considered a highly productive and diversified ecosystem along the western coast of Gujarat. The southern coastal belt of Kutch has a network of islands and inlets covered with mangroves and surrounded by coral reefs whereas the northern region with numerous creeks and rivulets sustains large stretches of mangroves and mud flats having abundant resources of shrimp, fin fishes, sponges, corals, and algae. The *Gulf of Khambhat*, also known as the Gulf of Cambay, is a bay on the Arabian Sea coast of India, bordering the state of Gujarat. About 200 km long, the Gulf of Khambhat is with rich coral reefs, mangroves, mudflats, creeks, Sea grass, & Sea weeds, estuaries, sandy strands to saline grasslands, marshy areas and rocky shores. Both Gulfs serve a livelihood for the traditional fishers who carry out indigenous and traditional means of fishing for this life subsistence.

Gulf of Kutch, the Pagadia fishing is a traditional form of fishing in the intertidal waters of Kutch, the fishers(Muslims) use only nets; Pag from Pagadia means foot, indicating they go as deep into the water as their feet can take them. 'Pagadia fishing' is in practice even today by

the traditional fishermen of this region. The fisher's traditional knowledge of the sea, with the creeks of the area and intertidal zone accumulated through living on the Kutch for ages made the fisher custodians of the Kutch. During 1960s, the introduction of synthetic fibers nylon modernised the fishing gears by replacing the traditional fishing gears by synthetic fibers nets. During the 1980s, the motorised boats were used in pagadiya fishing to reach the sea. The fishermen started to sail 8 or 10 km out to sea in diesel-powered boats, and they started to use gill and bag nets in the intertidal zone of creeks, estuaries and mudflats that are ideal for traditional fishing. Late 80's, trawl fishery gained momentum to harness prawn beds in the Gulf of Kutch. However, the mid 90's commercial trawling (bottom trawls) were introduced to exploit the prawn banks for international markets and fishing harbours were constructed along the Kutch region.

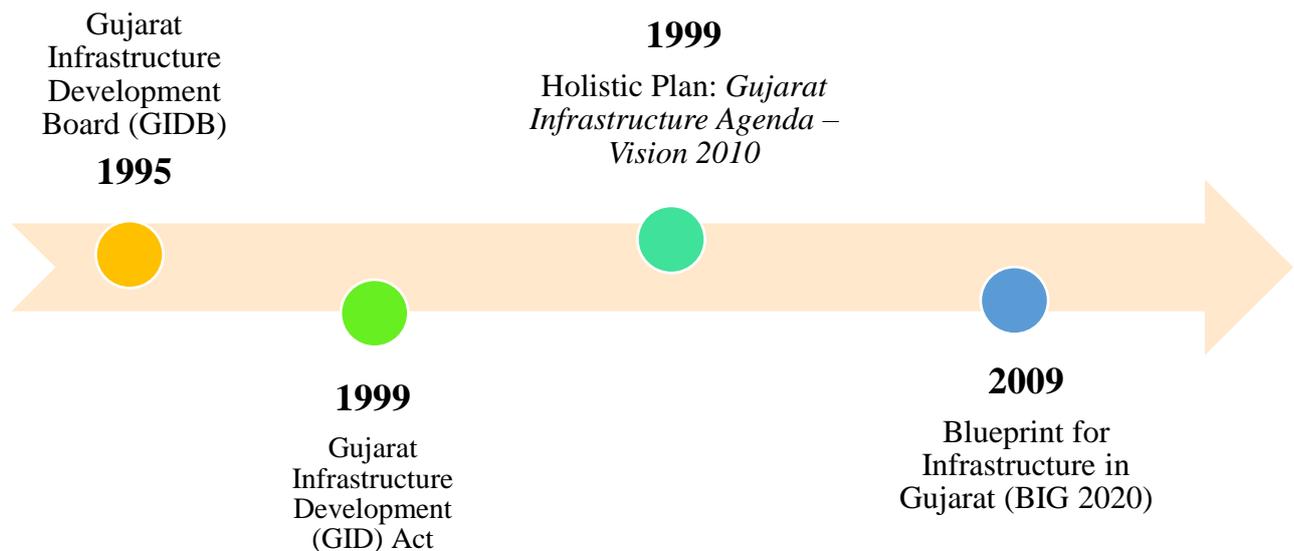
Gulf of Khambhat constitutes several inlets and creeks with the confluence of rivers like the Shetrunji, Narmada, Mahi, Dhadhar and Tapi. The coastal region of Bhavnagar region has a mixture of habitats including sandy supratidal zone, muddy (and somewhere rocky) middle intertidal zone and highly muddy lower intertidal zone with sparse mangrove patches. The intertidal zone region of the inlets, creeks and tidal influence are of Khambhat remains home of mudskippers. Globally, the 34 species of mudskippers were identified, and seven of them were available in India of which five species were reported from the Gujarat Coast (Pilo et al. 1996; Barman et al. 2000). In the Gulf of Khambhat, two species of mudskippers were also reported from the mudflats of Nada and Gandhar (Shukla et al. 2014). The Bhavnagar region fishers practice an indigenous fish method to catch the mudskippers. They use three types of fishing nets, nylon multifilament net, HDPE (high-density polyethylene) net and nylon monofilament net and three indigenous types of catching methods i.e. harvesting by using net, direct catch through digging the burrow (hand catching) and stick traps around mudskipper holes. This method is commonly practiced in the Bhavnagar coast but it may not be the case in other parts of the Gulf of Khambhat. However, mudskipper Fishing can be done only during the winter season, while less during monsoon, as mud shifted away to lower intertidal zone due to rainfall in monsoon. Further, the traditional Net catching method using non-mechanized boats is widely used for catching other fishes in the entire Gulf of Khambhat region. Their whole family works in fishing; the women and children sort and dry the fish which the men have caught, and they also sell the fish at local markets and from house to house. However, the discharge of the effluents from the industries, high sea erosion, and other infrastructure projects on the gulf of Khambhat had pushed the Bhavnagar fishers to the fringes of the poverty and

threat their traditional means livelihood for subsistence. The research team observed that traditional sustainable means of fishing methods are diminishing in the both gulfs and from interactions with fishers, it is evident that their life and livelihood depend of the gulfs were under serious threat.

COASTAL INFRASTRUCTURE DEVELOPMENT PROJECTS

Gujarat Infrastructure Development Board (GIDB)- BIG 2020

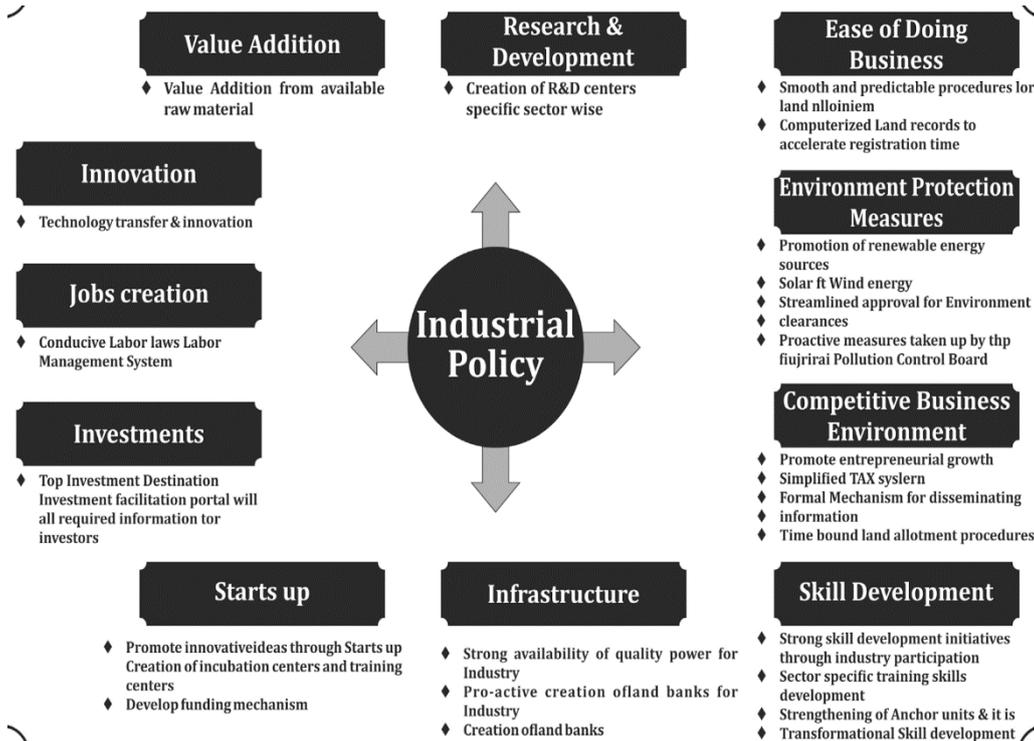
In the neoliberal era, Gujarat envision that development of infrastructure is essential to industrial and economic growth, so as to facilitate the development of infrastructure there needs an elaborate legal and organisational framework. In 1995, Gujarat established the Gujarat Infrastructure Development Board (GIDB) to facilitate higher flow of funds into infrastructure sector and to ensure coordination among various government agencies. GIDB is unique and acts as a catalyst with challenging responsibility of putting Gujarat on the global investment arena through proactive initiatives and facilitating private Sector participation for their development of the state. In 1999, the Gujarat Infrastructure Development (GID) Act was enacted which provides legal framework and roadmap for Public-Private Partnership (PPP) and the GIDM came up with a *Gujarat Infrastructure Agenda – Vision 2010*, it was the first “*Holistic plan*” for Infrastructure development in Gujarat. The document was a comprehensive plan for Infrastructure Development in the State of Gujarat.



In 2005, GIDB started preparation of vision document for Gujarat infrastructure development, released as the *Blueprint for Infrastructure in Gujarat (BIG 2020)*ⁱⁱ on 2009. The

vision of the BIG 2020 is that *to make Gujarat a globally preferred place to live in and to do business through accelerated, balanced, inclusive and sustainable growth driven by robust social, industrial and physical infrastructure*. The BIG 2020 document offered a “Package of Infrastructure Projects”, which presented integrated goals, strategy and resources. The projects had been carefully scrutinised for their forward-backward linkages, support systems, funding needs, policies, and legislations, so as to lead to the sustainable growth of infrastructure in the State. The infrastructures such as Dedicated Freight Corridors, Delhi Mumbai Industrial Corridors, Fast Passenger Corridors, MOUs signed at Global Investors’ Summit in 2007 are incorporated as significant future development projects of Gujarat. The BIG investment covers sectors such as Energy (Power and Gas) sector, SIR Dholera Industrial Nodes & SEZs within DMIC & other than SIR Dholera, Industrial Parks and SEZ outside DMIC, Roads, Ports, Railways Logistics parks & services, Airports Urban Infrastructure, Water Supply, and Information Technology Related Projects with an estimate investment of around **Rs. 11,80,912 crores**ⁱⁱⁱ planned for the period up to the year 2020. Further, it also came up with the phasing of the investments across the period and identifies investments to be made by the Government and the private sector.

The **Gujarat’s Industrial Policy 2015**^{iv} envisioned a blueprint stating *Gujarat: Shaping India's Economic Growth*, making Gujarat as an attractive “Total Business Destination”, expedite the overall country’s economic growth, thereby increasing the standard of living and prosperity among the people of Gujarat by giving them the opportunity for skilled employment and nurtured enterprises. The policy incorporates the nation’s thrust to Domestic Manufacturing “Make in India” which boost domestic manufacturing and local business. The policy adopts a Zero Defect, Zero Effect approach, Leveraging the demographic dividend and abundance of natural resources, will result in cost-Effective production and manufacture products with little defects making them export-friendly, without negatively impacting the environment making them sustainable in the long run. The Policy steered up with strategies for achieving growth through sound infrastructure as the backbone of healthy economy.



Highlights of the Gujarat's Industrial Policy 2015

- ➔ Categorisation of Large/Mega Projects such as MSME - less than Rs. 10 crores, Large projects - Above Rs. 10 crores to Rs. 1000 crores, Mega Projects - Above Rs. 1000 crores to Rs. 4000 crores and Ultra Mega projects - Above Rs. 4000 crores in order to facilitate incentives schemes and structures for effective establishments of new units and substantial expansion of existing units.
- ➔ The establishment of private investors Industrial parks, in at least an area of 20 hectares, suitable for a minimum of 10 units, will be incentivised by 25% of the total infra cost to be borne by GoG/GIDC.
- ➔ Leverages for Delhi Mumbai Industrial Corridor (DMIC) projects, with focus development of Special Investment Regions (SIRs) in Gujarat
- ➔ Ensures four lane linkages roads for entry and exit to ports, promotes setting up Logistics Parks including warehousing, container freight station, cold storage, container handling equipment and also establishes multi modal connectivity to SIR, SEZ, Ports, Airports

The Government enacted the **Gujarat Special Economic Zones (SEZs) Act, 2004^v** and introduced the **SEZ Scheme** in order to boost manufacturing, augment exports and generate employment and also to facilitate a hassle-free operational regime and encompassing state of the art infrastructure and support services. Besides this, the **SEZ Rules, 2005** and **SEZ**

SEZ Act and Gujarat SEZ Policy

SEZ incentives

- **Income Tax Incentives**
- 10 year corporate tax holiday on export profit – 100% for initial 5 years and 50% for the next 5 years
- **Other Benefits**
- Exemption of electricity duty – 10 Years*
- Duty free procurement of capital goods (including second hand capital goods), raw materials and consumable spares from domestic market
- Facility to realize and repatriate export proceeds within 12 months
- Facility to retain 100% foreign exchange receipts in the export earners foreign currency account

For Developers of SEZs

- **Income Tax Incentives**
- 100% tax holiday for a period of any 10 consecutive years out of 15 years beginning from the year in which the SEZ is notified
- Exempt from dividend distribution tax
- Tax exempt on Interest of long term finance
- Long-term capital gains arising on transfer of shares in developer company tax exempt
- No minimum alternate tax (MAT)
- **Other Benefits**
- Full freedom in allocation of developed plots to approved SEZ units on purely commercial basis

Common Incentives

- **Indirect Tax Incentives**
- Nil customs duty
- Nil excise duty
- Exemption from central sales tax
- Exemption from service tax
- Exemption from securities transaction tax
- Exemption from tax on sale of electricity for self generated and purchased power

Regulations and Gujarat SEZs amendment Act, 2007

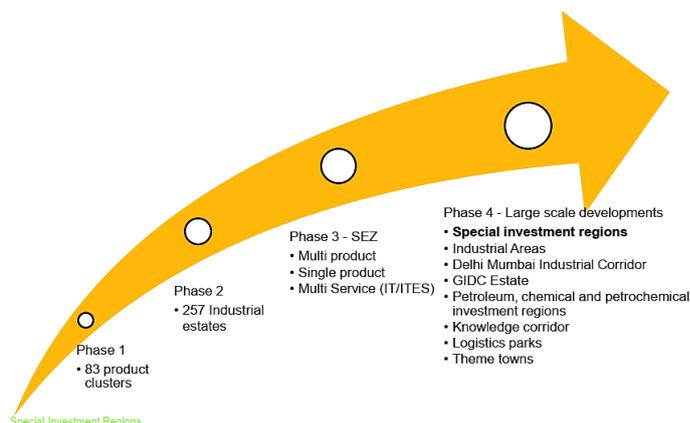
are in place. Under the Act, assistance is provided both the developer and co-developer of SEZ for development of infrastructure facilities and providing services. Tax concessions are provided to the units coming up in the SEZ. The State Government has also introduced labour reforms and carried out amendments in some of the provisions of the Industrial Disputes Act, 1947 offering complete flexibility in the

employment of labour by units located in SEZs. Further, several Government Resolutions related to SEZ were passed to enhance the leverages for SEZs. The Gujarat has approved **57 SEZs** which include multi-product SEZs and sector-specific SEZs covering textiles, pharma, engineering, chemicals, ceramics, gems and jewellery and IT/ITES sectors.

In 2009, Government of Gujarat enacted **Special Investment Regions (SIRs) Act^{vi}** with the objective to establish large-scale investment regions and industrial areas as global

economy hubs with world-class modern industrial infrastructure. With the immediate effect, Gujarat Industrial Development Corporation (GIDC) envisioned setting up **11 Special Investment Regions** in Gujarat catalysing unique economic growth in the state. The State has empowered to declare any region as Investment Regions or an Industrial

Land bank availability - Phased development in Gujarat



Area and it is responsible to establish, develop, operate and regulate SIRs. An SIR has a minimum area of 100 sq. km. (10,000 hectare). An Industrial Area has a minimum area of 50 sq. km. (5,000 hectare). GIDB is declared and designated as Apex Authority for the SIRs under section 5 of SIR Act, 2009 and also Section 6 of the Act provides for powers and functions of the Apex Authority (GIDB). The GIDB had sphered the SIRs with phase-wise implementation master plan with a board objective of developing 1000 hectares of suitable land for SIRs.

Ports -Gujarat Maritime Board (GMB)

Gujarat is situated in strategic maritime location. The Gulf of Cambay and Gulf of Kutch provides natural navigational safety and logistical advantage to northern and central parts of India and proximity to west Asia, Africa and Europe since the ages. In order to prosper the maritime trade, Gujarat state established the Gujarat Maritime Board (GMB) in 1982, which was the first maritime board of the country. The GMB vision is “to enhance and harness ports and international trade as vehicles for economic development. GMB envisioned with the concept of integrated port-led development of its minor ports, supported by last mile rail/road connectivity, an effective tool to attract the right private investors. Further, several pioneering models of privatization such as privatizing port services, private jetties, joint venture ports and Greenfield ports led the Gujrat to prosper in the maritime trade industry. The GMB port development initiatives^{vii} are figured out below

Policy Initiatives of Gujarat for the Port Sector

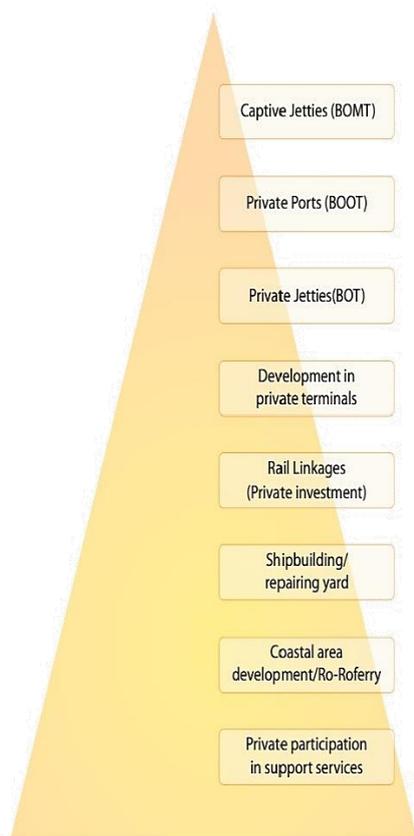
Policy initiatives	Implication for Investor
1982 Formation of GMB	All ports in Gujarat (except the Major Port) come under the purview of GMB
1987 Captive Jetty Agreement	Allows private companies to operate their own jetties in GMB Ports
1995 Port Policy	Allows public private participation in Gujarat Ports
1997 BOOT Policy	Provides operational flexibility with tariff freedom, low water-front royalty
1999 GID Law	Gives legal framework & roadmap for PPP
2004 SEZ Act (Gujarat)	Paves way for provision of minor ports and related services in Special Economic Zones in Gujarat - developer to fix and collect Tariff
2008 Captive Jetty Expansion	Paves way for expansion of existing captive jetties
2010 Shipbuilding Policy	Allows private companies to develop shipbuilding parks
2015 Ship Recycling Regulations	Revamping of charges payable, plot sizes and plot lease timelines
2017 Guidelines for Reclamation of Land	Provides provision for private companies to develop port/maritime structure on reclaimed land

Regulatory Interventions Initiated

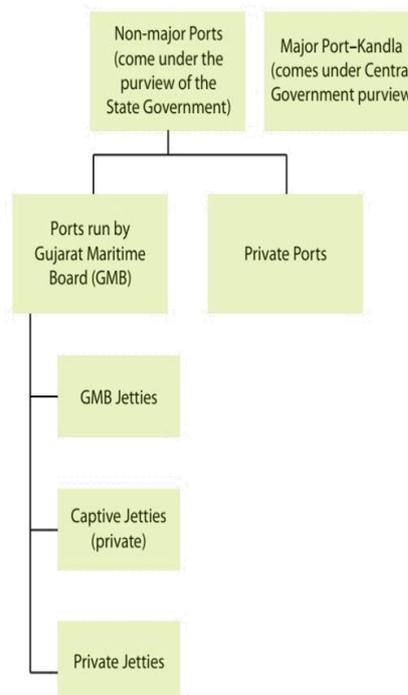
- ▶ Revision of Port Policy, 1995
- ▶ Land Allotment Guidelines
- ▶ Stevedoring Guidelines
- ▶ Revision of SOPC, 2012 (Schedule of Port Charges)

In 1995, the Gujarat Port Policy^{viii} was the first of its kind in India, which pioneered private sector participation in ports. The Port Private Business encourages and promotes private investors to establish **Captive Jetties (Build Own Maintain Transfer)**, **Private Ports (Build Own Operate Transfer)**, **Private Jetties (Build Own Transfer)**, **Development in private terminals**, **Rail Linkages (Private Investment)**, **Shipbuilding and Ship Repair Yards**, **Coastal area development/ Ro-Pax Project** and **Private participation in support services**. As a result, Gujarat was anchored now with number of private sector ports and attracted India's largest quantum of private investment. The Port Privatisation Model was seen as successful model by the state and replicated and extended the model to other sectors such as power, rail and road infrastructure as well as social sectors like hospitals and education. The PPP initiative has enabled the government to optimise the utilisation of precious public funds for welfare and development activities, aimed at inclusive growth of Gujarat.

GUJARAT PORTS : PORT PRIVATIZATION MODELS



TYPES OF PORTS



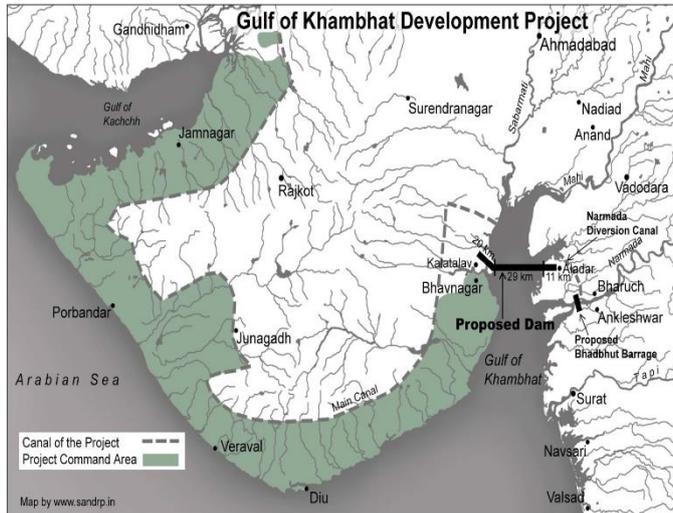
●	Major Port
◆	Private Sector Ports
■	GMB* Ports

Gulf of Khambhat Development Project



The Gulf of Khambhat Development Project (Kalpasar)

Government of Gujarat



The Gulf of Khambhat Development Project, well-known as Kalpasar project^{ix} is a very ambitious project of the Gujarat state government where a large dam would be built in the sea near the Gulf of Cambay (Khambhat) to tap river water. The Gulf of Khambhat is chosen because it has the capacity to create a reservoir by construction of a **Gulf Closure Dam** which can store about 10,000 million

cubic meter water (25% of total Gujarat 's surface water resources of Gujarat) inflows of the rivers (Narmada, Dhadhar, Mahi, Sabarmati and some of the Saurashtra rivers), so 30 km long dam (one of the longest in the world) across the Gulf of Khambhat between Bhavnagar districts. Therefore, this Closure dam the storage is calculated as more than double the Sardar Sarovar (Narmada Reservoir) capacity. The Government necessitates, this ambitious project to prevent the tidal salinity ingress and soil erosion and also improve in Groundwater quality in Saurashtra and Central Gujarat regions. Further, the dam will pave way for supply drinking water, water supply for industries and irrigation, potential development of fisheries, reclamation of saline land around the fresh water reservoir, generation of tidal power and transport link bridge on barrage will shorten the 18 km in transit between Dahej to Hajira (Surat) resulting in saving of time and energy. The Gulf of Khambhat Development Project is projected as Water Resources Project involving creation of fresh water reservoir in the Gulf of Khambhat for meeting demand of irrigation, domestic and industrial water supply, the mega project has been divided and implements as two projects Kalpasar Project "Kalpasar dam" across Gulf of Khambhat and



Bhadbhut Barrage Project (a barrage on Narmada river). This project was estimated as Rs. 53,000 crores in which the tidal power component was Rs.33000 crore in the year 1998, but now it is INR 90,000 crore or US\$12.75 billion (2015-16 estimates with 8% annual inflation) excluding the cost of tidal power plant^x

TIMELINE- BRIEF HISTORY OF KALPSAR PROJECT^{xi}	
1969	Gujarat State Gazette (Bhavnagar District), here is a mention about construction of 25-mile-long earthen dam and ten thousand feet long waste weir to prevent sea tide water ingress and store rain water.
1975	Prof. E. M. Wilson of United Nation Mission presented a report to the Central Electricity Authority for construction of a dam between Ghogha and Dahej, with and without tidal power generation
1986	Central Design Organization (CDO) of Irrigation Department of Government of Gujarat prepared the design & estimate for constructing 46 km long dam to store 3377 MCM of water.
1988	Central Electricity Authority suggested to Government of Gujarat to construct two separate basins for tidal power and fresh water storage
1988-89	M/s Haskoning of the Netherlands prepared a Reconnaissance Report of the Gulf of Khambhat Development Project with different dam alternatives
1996	After 8 years of the Reconnaissance Report, Government of Gujarat entrusted the work of preparing a Pre-feasibility report to M/s Haskoning. The report, submitted in the year 1998, recommended to carry out six specific studies before full feasibility report
2004	The state started spending for feasibility surveys. However, the survey works was delayed amid questions about feasibility
2014-17	The entire Gulf of Khambhat area was undergoing Bathymetric and Land Survey for determining sea bed levels under the supervision of National Institute of Ocean Technology (NIOT, Chennai)
2019	<ul style="list-style-type: none"> • 25 of the 43 feasibility studies for the Ecological, Environmental, Social and Financial impact, were completed; • 8 more were underway; remaining 10 surveys will take 3 to 5 years to complete (2021-23) • Tenders for the "Bhadhut Barrage" issued

From the above outlook, the State of Gujarat seems to be a pioneer and visionary state in introducing various investment liberal policies and corporate friendly Acts to advance Gujarat as a global industrial hub. However, the so-called economic progression models had regrated the significance of the unique the marine and coastal ecosystem of the Gulf of Kutch and Khambhat.

ADOPTION OF BLUE ECONOMY(BE): Gujarat

Gujarat is a fast-growing industrial state, with envisioned policies and acts to facilitate the corporate investors in order transform Gujarat as a well-developed economic prosper state of India. The coastal infrastructure projects as well as their facilitating policies and acts seems to be existing roadmap for the nation's blue growth model implementation a large scale. The BE Research Team reviewed the Gujarat Policies and Acts which acting as the driving tools for the implementation of Blue growth of model. Further, they identified Sagarmala – Port led economic prosperity projects implemented along coastal regions of Gulf of Kutch and Gulf of Khambhat as the Blue Economy component for review and analysis.

Gujarat's BE Influential Policies and Legal Frameworks: An Overview

First of all, the Gulf of Kutch and Khambhat and its coastal region is an ecologically sensitive region. The uniform industrial policies and acts are not capable of addressing the ecological subsistence of the gulf and its dependent coastal communities.

Port-led Region Development – Gujarat Port Policy Reforms

In 2017, the GMB comes up with an **Integrated Maritime Policy**^{xii} in the lines of **Blue Growth** to facilitate coherent approach to maritime issues and better coordination of different sectors and actors. The key long-term strategy of the policy is *Blue Growth*, to attain sustainable growth as a whole in the marine and maritime sectors, which have high potential for sustainable jobs and growth, such as aquaculture, marine biotechnology, ocean energy, seabed mining. In addition, the *Maritime Spatial Planning* as a tool to ensure an efficient and sustainable management of activities at sea and *Integrated Maritime Surveillance* to enhance authorities over view of what is happening at sea are devised as the key strategies of the Port Policy 2017. Further, the GMB has brought several other discussion papers on Port Policy 2017. Recently, the GMB also released the Memorandum of New Captive Policy, 2019^{xiii} which unlocks the value of existing port infrastructure by allowing existing captive jetty holders to handle third party cargo and opportunity for new players. Therefore, the Gujarat is the first state in India to privatise the port sector and further advancing reforms in the sector to promote the Blue Growth in maritime sector.

Gujarat a Global Business Destination - Industrial Policy 2020

As the Post COVID economic reform, Gujarat introduced **Gujarat Industrial Policy 2020**^{xiv} focusing on strengthening integrated value chains, innovation and research. The policy envisioned to make Gujarat a Global Business Destination for next-generation towards sustainable manufacturing & service industry driven by state-of art infrastructure, employment

generation, inclusive & balanced regional development and thereby contribute significantly to “Aatma nirbhar Bharat”.

Following the Industrial Policy 2020, the Gujarat Government brought out *Guidelines for Industrial Park Policy 2020^{xv}* in order to assist the private developer for developing industrial infrastructure within the area of industrial park and also *Guidelines for Logistic Park Policy 2020^{xvi}* to provide assistance for the private developer for developing logistic park with all required infrastructure and logistic services within the logistic park.

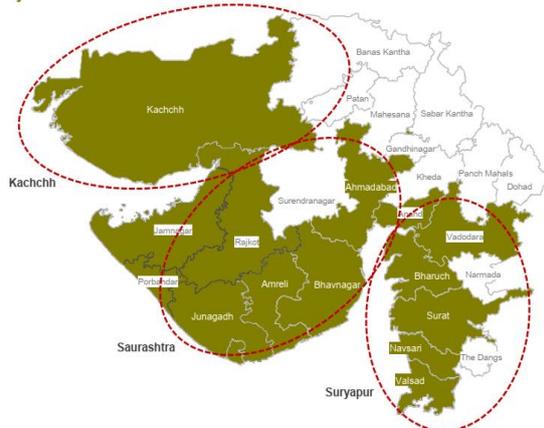
Sagarmala- Port led Prosperity

In 2016, the government of India envisioned the Sagarmala Programme to enhance the performance of the country's logistics sector. The programme devised under four components namely Port Modernization & New Port Development, Port Connectivity Enhancement, Port-led Industrialization, Coastal Community Development and Coastal Shipping & Inland Waterways. The core agenda of the programme is to modernize India's Ports so that port-led development can be augmented and coastlines can be developed to contribute to India's growth. It also aims at "transforming the existing Ports into modern world-class Ports and integrate the development of the Ports, the Industrial clusters and hinterland and efficient evacuation systems through road, rail, inland and coastal waterways resulting in Ports becoming the drivers of economic activity in coastal areas”.

Gujarat is the first and pioneering state in India to privatise the port sector. Gujarat has one major port at Kandla named **Deendayal Port** which is regulated by the Government of India and 48 non-major ports which also include the biggest Ship Recycling Yard at Alang and

another at Sachan which are Gujarat State (GMB) administered ports. As discussed above, the Gujarat’s advancement in industrial growth devised through port-led region development strategies like private investors, Special Investment Regions and Special Economic Zone.

Gujarat coastal economic zones



Under Sagarmala programme, Gujarat envisioned three Coastal Economic Zones (CEZs)^{xvii}; Kutch with focus on petrochemicals, cement & furniture, the Saurashtra region with focus on apparel and

automotive sector and finally South Gujarat with focus on marine industries are being planned for development under Sagarmala.

Even, Gujarat has defined *Logistics Parks Guidelines* to facilitate transport connectivity and linkages to the SIR, SEZ and Port regions. The Sagarmala perspective plan states that the GMB will be creating a *smart ecosystem* under one umbrella at a single location for all maritime, shipping and logistics activities. Gujarat core thrust is that modern world class infrastructure to enhance and maintain suitable economic growth.

A comparative analysis of Gujarat's Economic growth strategies and Centre's sagarmala programme illustrates that the some of **GMB ports** are identified as linkage ports under sagarmala, **SIRs and SEZs of GIDB** were classified as three Coastal Economic Zones¹(CEZ) Kutch, Saurashtra and Suryapur under Sagaramala's Port-led Industrialization component. Gujarat's **Logistics Park** is classified under Port connectivity component and all the **corporate responsibility activities** are clubbed under Coastal Community Development component. Therefore, Sagarmala programme rightly fit into the approaches and business model of the Gujarat state government.

Kandla Port, also known as the **Deendayal Port Trust** is located on the Kandla Creek of Gulf of Kutch (Kutch District), near the city of Gandhidham. It was declared as a Major Port on April 8, 1955. It is a natural, all weather port, fully protected from waves during the monsoon period and is connected to deep water by a dredged channel. Under Sagarmala, Kandla port is expanding with more berths and facilities such as Development of Oil Jetties and Bunkering Facility, Barge Berths at Bunder Basin, and mechanisation of Berth five to handle Agri Products, a detailed master plan was prepared and work is under progress. The Kandla port also building an **Industrial park (in an area of 292 acres)** to facilitate the port based industrial development while supporting the theme of Make in India and also a **Smart Industrial Port City (SIPC)** with an area 850 acres at the of cost Rs. 11,147 Crores within Gandhidham Kandla Adipur Complex located at Gandhidham (Kutch).

¹spatial economic regions comprising of a group of coastal districts or districts with a strong linkage to the ports in that region. CEZs are also envisaged to tap synergies with the planned industrial corridor projects

13 berths and 6 Oil berths in Kandla Creek

4 Mechanised Coal berths at Tuna Tekra

3 SPM and 2 Product Jetty at Vadinar

No. of Berths



Existing Facilities



Ongoing Developments - 1



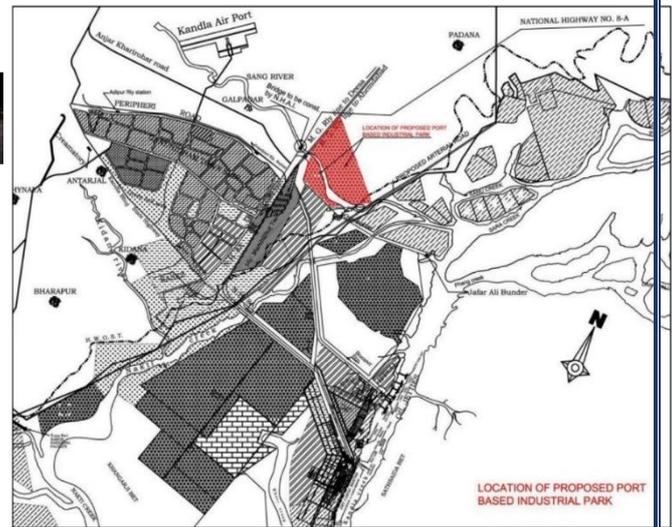
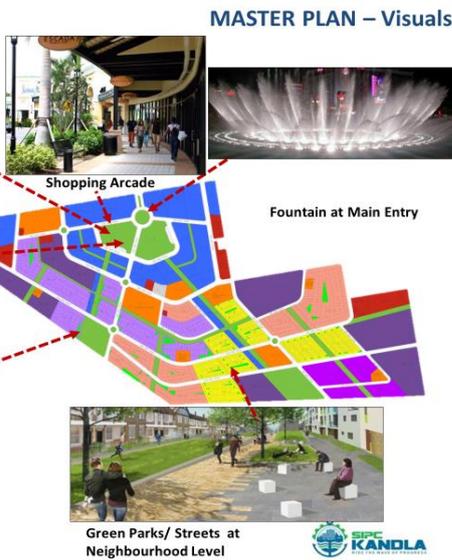
Green parks at Neighbourhood Level



Iconic Buildings - Sport Facilities



Green parks at Cluster Level



Location of Proposed Port based Industrial Park

Mundra port is the largest, privately developed port and a multi sector SEZ established by Adani Ports and Special Economic Zone Ltd (APSEZ) which is spread over 100 sq.km. in Kutch. The Port comprises a total of 30 berths, including 12 dry cargo berths, four liquid berths (including Berth B-1 common for LPG and liquid cargo), 10 container berths, one LNG berth, two SPMs and one barge berth.

Mundra is the India's largest cargo handling port, recently (2019) APSEZ^{xviii} has announced further expansion with a development thrust industrial sectors like logistics, light engineering, iron and steel industry, food and agro processing, mineral based and textile industries at the cost Rs 57,594 crore. It is located near to the Kandla port (one hours travel by road) in the Northern Gulf of Kutch, close to major maritime routes, and a better convenient gateway for

international trade. On the other side, the Mundra falls within the seven-kilometer intertidal zone where these pagadia fishermen were involved in active fishing between April/May to August.

Petroleum, Chemicals and Petrochemicals Investment Region (PCPIR)^{xix} is situated in Dahej, Gulf of Khambhat. Dahej PCPIR is one of the 4 PCPIRs declared by Ministry of Chemicals and Fertilizers, Govt. of India under PCPIR Policy, 2007. PCPIR is specially delineated investment region of 453 sq. km. for manufacturing of petroleum products, chemicals and petrochemicals. Three new LNG terminals and a greenfield airport have also been planned in/around the PCPIR. GIDC has developed a Chemical Zone in Saykha.

PCPIR

Petroleum, Chemical & Petrochemical Investment Region



Petroleum, Chemical & Petrochemical Investment Region

PCPIR

» Location

Gujarat PCPIR (GPCPIR) is a specifically delineated Investment Region planned for the establishment of production facilities for petroleum, chemicals and petrochemicals. PCPIR located at Dahej, is spread over the blocks of Vaoga and Bharuch, South Gujarat. It is surrounded by the Gulf of Khambhat in the west, Narmada river & Alyabet Island in the south, villages of Vaoga and Bharuch block in the east and Bharuch-Dahej railwayline in the north.

» Utilities

Water

Existing

- GIDC supplies 33 MGD raw water drawn from Narmada river.
- GWSSB provides drinking water through Narmada Canal.
- Obtain through Dahej Industries Association.

Proposed

- 100 MGD additional water supply network.
- Separate water supply network of 35 MGD in SEZ.
- Desalination Plants & Water Recycling.

Power

Existing

- Power available from Gujarat Ujji Vikas Nigam Ltd. from 220 KV sub-station, linked with the state grid by 220 KV circuit line.

Proposed

- 1500 MW gas based by Torrent Power (construction started).
- 2640 MW coal based by Adani Power (construction started).

Gas

Existing

- GPC's state-wide gas grid handles over 13 MMSCMD through its 2000 km network. This covers the PCPIR.
- Gujarat Gas network close to GPCPIR, at Ankleshwar (3 MMSCMD).

Proposed

- All gas suppliers to extend network.

» PCPIR Snapshot

Location	Dahej in Bharuch district, South Gujarat
Area	453 sq. km.
Focus Sector	Chemical & Petrochemical
Investment Already Made & Committed	Rs.90,000 crore (USD 20.5 bn)
Infrastructure Development	Rs.3,200 Crore (USD 727 mn)
Anchor Tenant	ONGSC Petro additions Limited (OPAL)

» Connectivity

Road

Existing

- 50 km of four-lane Dahej-Bharuch State Highway connecting six-lane Delhi-Mumbai National Highway and National Expressway.

Proposed

- Ahmedabad-Vadodara National Expressway to be extended to Mumbai (PCPIR loop planned).
- 6-laning of Dahej-Bharuch road.
- Up-gradation of 8 km of port linkage.
- 42 km of State Highways within PCPIR to be upgraded to four-lane.
- Construction of 25 km of coastal roads.
- Up-gradation of Dahej-Vaoga-Bharuch Road.
- Escape Route (for security purpose).
- Link Road linking PCPIR to NH-8.

Rail

Existing

- Connected to Delhi - Mumbai Broad Gauge railway line at Bharuch.

Proposed

- Bharuch-Dahej rail line (62 km) - Conversion to broad gauge (under construction).
- Delhi-Mumbai Dedicated Freight Corridor (DFC) will touch the PCPIR on the eastern side.

Airport

Existing

- 250 km from International airport at Ahmedabad.
- 90 km from domestic airport at Vadodara.
- 65 km from domestic airport at Surat.

Proposed

- Greenfield airport for PCPIR.
- Airstrip at Ankleshwar.

Port

Existing

- Old Port of Gujarat Maritime Board.
- Liquid Chemical Terminal (1.80 MMTPA) of GPCPIR.
- LNG port (1.0 MMTPA) of LNG Petronet.
- Liquid Fuel jetty (1.50 MMTPA) of Reliance.
- Solid cargo jetty (4.50 MMTPA) of Birla Copper.
- Solid cargo port of Adani Group (3 MMTPA). To be expanded to 12 MMTPA.

Proposed

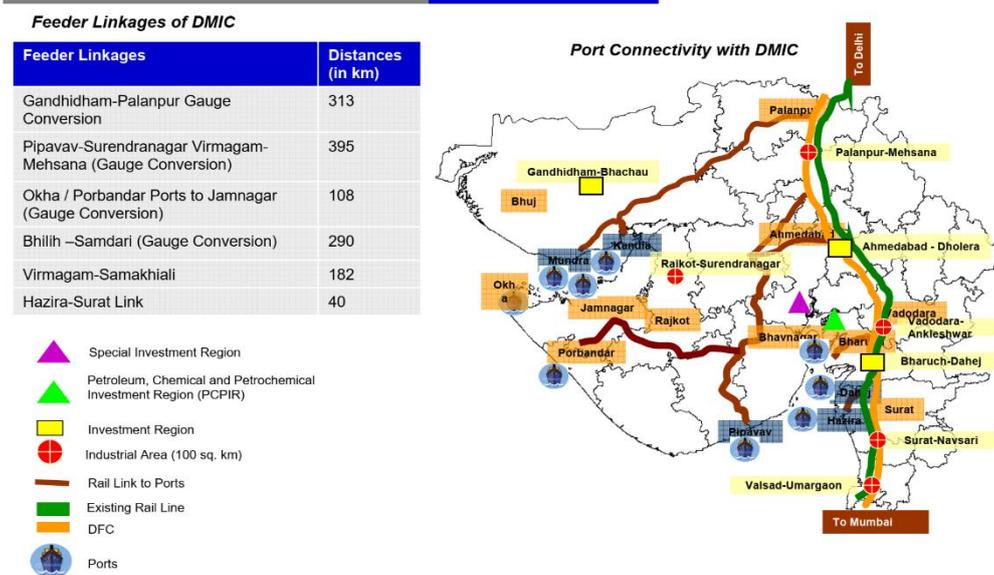
- 40 MMTPA ports by Sandesara Group (Solid Cargo, Liquid Cargo and Container Port).
- Marine Shipbuilding Park by GMB.
- Ro-Ro Ferry Service and Common Use Jetty by GMB with investment of Rs. 200 crore.



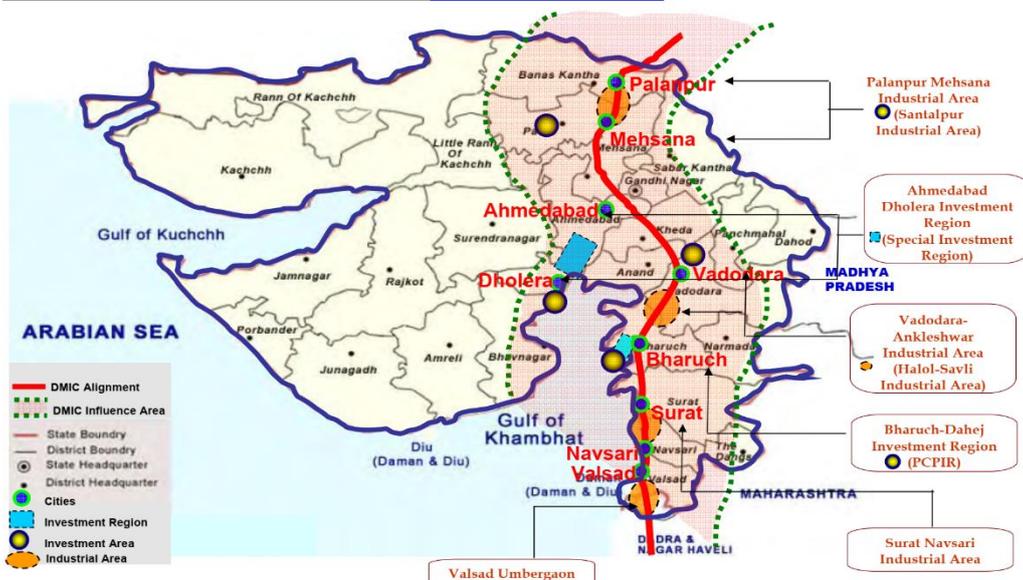
The Delhi - Mumbai Industrial Corridor (DMIC), Dedicated Freight Corridor (DFC)^{xx}, Bullet Train and the Express Highway linking Baroda to Mumbai will enhance the Dahej region. The Dahej PCPIR is located close to the Kalpasar project.

In addition, Dedicated Freight Corridor (DFC) and the Delhi Mumbai Industrial Corridor (DMIC)^{xxi} has been implemented as logistics and connectivity projects between Delhi and Mumbai (which passes through Gujarat) ensures four lane good quality roads for entry and exit to ports, establish logistics parks including warehousing, container freight station, cold storage, container handling equipment and also airports at appropriate nodes around Delhi-Mumbai Freight Corridors .

Port Connectivity to Dedicated Freight Corridor



DMIC Investment Regions



In the 1982, the Alang-Sosiya Ship Recycling Yard^{xxii} stretches 10 km off the Gulf of Khambat was started with 5 ships. Now, Alang is one of the world's biggest ship breaking yard and Asia's biggest ship recycling yard with hundreds of ships getting scrapped each year. Under

Coastal Community Development, GMB has provided Skill development training and environmental education awareness were to ship recycling workers of Alang. However, the recycling yard develops a huge ecological impact on the Gulf of Khambhat.

To sum up above review, it is evident that the Gulf of Kutch and Khambhat coast regions were declared as Coastal Economic Zones packed with several port led industrial parks, Port based SEZs, and number of SIRs. The research team observed the industrial and infrastructure growth along the coastline during the intensive travel from the Gulf of Kutch to Khambhat. Further, the research team explored the implications Blue Economy Growth Model in line with the existing developments on both the gulfs of Gujarat with lens of traditional fishers and their lives on the coast of gulf of Kutch and Khambhat.

CHAPTER III

FIELD OBSERVATIONS

With the above review on the secondary sources and observations, the research team conducted focus group discussions with fisher and coast communities in the Gulf of Kutch and Khambhat.



Focus Group Discussions (FGD) with Kandla Small-Scale Fishers

In Kandla, the Research team visited the premises of Deendayal Port Trust and Mundra Port which is being expanded under the Sagarmala Scheme. The Kandla traditional Pagadia Fishers and other traditional fishers shared that massive mangrove deforestation in Kandla and



Mundra port was carried out for the port expansion and other port-related activities. These traditional fishers generally engage in seasonal fishing in the Kutch region, henceforth their settlements are temporary in nature along the intertidal zone of the Kandla creek. Since, the establishment of the Kandla port, the port authorities recorded the

fisher settlements as encroachers in the port premises and basic amenities were denied to them. The fisher's livelihood is totally dependent on the Kandla creek and other intertidal zones of the Gulf of Kutch. However, Mundra and Kandla port establishments and their further expansions had denied the basic rights to coastal land and to the sea. The pagadia fishers were not been considered or not part of any resettlement processes, for whom life and livelihood are facing great threat on everyday basis.

Without addressing the resettlement issues raised by the primary stakeholders, the Adani Group drew the attention of the State for its inability to mobilise the imported coal due to price hike and lesser domestic supply. The Adani Power had been accounting in earnings since January-March 2014 quarter for higher power tariffs for the Mundra power project to compensate for changes in the price of imported Indonesian thermal coal and a shortfall in domestic supplies. The shares of Adani Power and Tata Power continued to tumble as the SC blocked the higher prices charged by these power companies. Adani Power shares were down by 5.11% and Tata Power shares too were down 0.76% on BSE.

Tata Motors in a statement said that the company is studying the SC order in 2017, *“The Company will continue to pursue all alternatives options at Coastal Gujarat Power Ltd (CGPL), including sourcing of competitive coal from other relevant geographies and also use low grade and blended coal options to contain the onslaught of under recovery at Mundra Ultra Mega Power Plant^{xxiii}.”* Reportedly, the court allowed plea against Tata Power and Adani Power's compensatory tariff. The apex court's ruling rejected the compensatory tariff and put an end to a decade old issue.

Focus Group Discussions (FGD) with fishers near Alang Shipbreaking Yard

The team visited Sartanpar and interacted with fishers impacted by Alang Shipbreaking Yard promoted under Sagarmala Scheme in the massive intertidal zones in the Gulf of Khambhat. Fishers mentioned that marine pollution due to shipbreaking activities are causing a decline in fish catch. The presence of intertidal zones is a unique aspect of Gulf ecosystems. Fishers narrated numerous instances where ships brought to the yard were left to sink and damage the seabed, and blocking all the estuaries flowing into the shallow sea.

Focus Group Discussions (FGD) with Bharuch Estuarine Traditional Fishers

The PCPIR which is now further expanded as Coastal Economic Zone “*Dahej Petrochemical Zone*” under Sagarmala Scheme. The fishers shared that the Trussers construction (a form



pipeline jetty) to avoid the EIA clearance in the proposal quoting that no land reclamation has been involved. However, piling and boring activities involve land reclamation and environmental degradation eventually takes place in the intertidal zone. These degrading, coastal destruction and huge effluents discharges in the gulf of Khambhat impacted on the livelihoods of traditional

mudskipper fishers and traditional fishers whose livelihood are dependent on the brackish waters of the gulf of Khambhat. Further, the air pollution was immensely resulting in respiratory disorders. The fishers shared that they were denied access and fishing rights in the estuarine ecosystem. These traditional fishers are categorised as marine fishers and there are no specific welfare or fisheries development schemes to address their sectoral needs.



In addition, the Gujarat’s dream project Kalpasar is implemented on the same region which blocks the confluence of river and sea. This will destroy the ecosystem and will be a deathknel to the livelihood of the traditional fishers.

To conclude, the Gujarat visit was an eye-opener for the research team. The state has all the components of BE and this seems to be the pre-model BE state for the rest of India. However, being India’s longest coastal state with 1600 km, it was not possible to visit most of the state’s coast.

CHAPTER IV

FINDINGS AND ANALYSIS

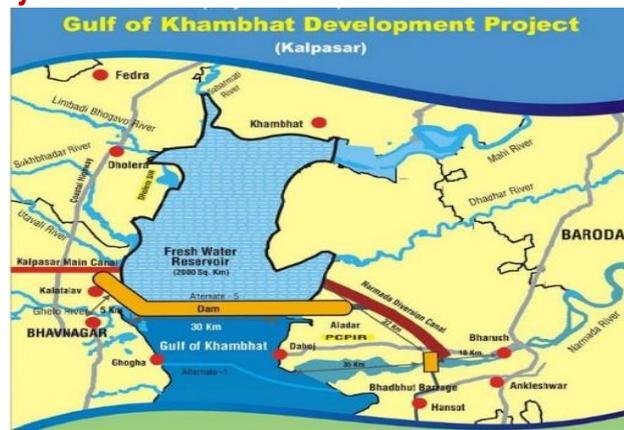
With the above all field observations and secondary data analysis, the BE Research team documented the Socio Economic, Ecological and Political implications of Blue Economy in the coast of Gujarat.

SOCIO-ECONOMIC IMPLICATIONS

Strategic Exclusion and Eviction from coastal region

The most of the traditional fishers of Kutch and Khambhat solely depend on the intertidal or tidal influenced areas (brackishwater) for their subsistence and also, they adopt traditional non- mechanised methods to catch fishing. These regions are highly influenced by the river and sea discourse, so these fishers will do seasonal fishing, for instance offseason in one place and summer season in another place. The Governments officials strategically use this fishing phenomenon to exclude the fishers from planning process and label the fishers as encroachers of the port premises. The traditional seasonal fishers in Mundra region had opposed the strategic exclusion both physically and legally. In cases of Kandla port, the eviction notices were served to fishers legally stating that they have encroached the port premises. Since they resisted, the port authorities further denied their access roads to their settlements and barred the basic amenities of living. Hence, the gross violations of indigenous collective rights and individual rights of the fishers were evident from the legal course of action by the states, leaving the fishers under threat of life and livelihood.

Economically Unviable Projects



In the Kalpasar project, the 14 years later spending more than 300 crores the State Government response to the legislative assembly questions is that “*once the feasibility of the project is established, it will be completed at the earliest. In spite of 21 feasibility reports, 10 studies and 19 more in the pipeline, there is no clarity on the viability of the project*”- says the Deputy Chief Minister of Gujarat Nitin Patel. (response dated on 21-02-2018)

This the clear example of Gujarat government state power looting the natural capital, financial capital by deregulating its own state laws and policies, inspite of the minimum norms to be followed under the Environmental Protection Act and its subordinate legislations; EIA, CRZ Clearance, Air and Water Pollution act in addition to undemocratic ways of off clearing the settlements of the riverine and coastal communities along the estuaries which is an act of Ultra virus to the principle of Right to Life and Livelihood (Art: 21A) and Art 45 under Directive Principles of State Policies and violates regulatory mechanisms by the MoEF & CC.

ECOLOGICAL IMPLICATIONS

Destruction of Gulf Ecosystem

The massive coastal infrastructure projects along the coastline of gulfs show high rate of erosion. The National Centre for Sustainable Coastal Management, Chennai and Space Applications Centre Ahmedabad study reports concluded that, "*The coastal regions under very high-risk category are along the north western parts of the Gulf of Khambhat, the northernmost parts of the Gulf of Kutch and western parts of the Kutch coast. The Coastal Vulnerability Index (CVI)^{xxiv}, anticipated sea-level rise, showed that 45.67 per cent of the Gujarat coast is under high to very high-risk category²*". Further, the report clearly reveals that Gulf of Khambhat is endangered under the execution of Kalpasar Project. The Bharuch fishers also expressed the same stating that once the closure dam is constructed estuarine fishers will be excluded in future.

Degradation of Coastal Ecosystems

The Adani Ports and Special Economic Zone (APSEZ) comprises Mundra Port and adjacent industrial complex with its nearer coal-fired power stations and an Adani Wilmar palm-oil refinery outside the APSEZ premises. However, this Mundra industrial complex being located on unique feature, on the coastline with the vast intertidal zone comprising a network of creeks, estuaries and mudflats. In 2013, the investigation committee documented numerous violations of environmental guidelines, including widespread destruction of mangroves, blocking of creeks, potential contamination of groundwater by saline discharges, and problems with disposal of ash³.

² <https://www.indiatoday.in/india/story/despite-spending-rs-30-71-cr-gujarat-govt-unclear-on-viability-of-kalpasar-dam-project-1174787-2018-02-21>

³ https://www.adaniwatch.org/coastal_ecosystems_and_livelihoods_devastated_by_adani_s_massive_mundra_port_complex_and_power_station

“The mangroves have been destroyed and it has created an environmental disaster. But if you



Photograph by the author. Source: www.ajay.com

ask the Gujarat Pollution Control Board or the state environment and forest department how many notices they have served to the company, you will find none. The fisherfolk and common people affected by this degradation cannot fight such a big company. The irreversible and irreparable damage has been done to the area by the Adani

Port and it is difficult to monitor the extent of the damage today⁴” - says Mahesh Pandya (Ahmedabad-based environmentalist)

Denial of Fish Stocks

Traditional fishers of Kutch and Khambhat shared that massive intertidal zone and mangrove ecosystems destruction for port-based infrastructure developments resulted in a gradual decline in fish catch which in turn deprive their daily livelihood. They said that more ports and more ship movements disturbed the fish school movement towards the shore and induced changes in tidal currents. Further, the untreated discharges of the large number coast-based industrial parks, SEZ and SIR in the nearshore waters had polluted the entire coastal and brackish water ecosystems to a larger extent. During the low tide, one can clearly see the different chemical sediments in the region. Further, the team also experienced a pungent smell along the coastline from Kutch to Khambhat, sometimes the smell became stronger when we crossed closer to the industrial parks and SEZs.

POLITICAL IMPLICATIONS

The State's enacted Laws, Amendments and Government Resolutions overthrew and diluted the central laws and regulations which are against the principles of Constitution of India as well as the State's integrity over unity. The Privatisation Port Model and Corporatized Industrial Infrastructure Investments models such as Industrial Parks, SEZ and SIRs permits corporates to have monopoly and accumulation of powers. The State has deployed its security forces to protect and guard the territories of the corporates. In addition, the corporates were also given powers to employ own security forces to protect their property. These trade incentives facilitate the Corporates by the states for exploiting the homelands at the cost of their citizens.

⁴ <https://magazine.outlookindia.com/story/mundra-the-port-of-no-call/297572>

CHAPTER V

CONCLUSION

It is apparent from the Gujarat coastal development and investment projects had induced a threat of eviction and alienation of fisher rights from their livelihoods and from their habitats. The Blue Growth initiatives have occupied the Gulfs of Gujarat through extraction of natural capital and exclusion of the traditional communities for capital accumulation of the Indian MNCs and Global Corporates.

It is a stark reality to understand the advocacy of promoting digital capital, demonetisation, liquidity of cash and availing reserve capital from the Reserve Bank by the present State for mere protection of Indian MNCs and Global Corporates by looting the Natural Capital at the cost of lives and livelihoods of coastal communities and manufacturing consent from the fraternal ruling powers and exploiting the informal sector to go for digital money instead of liquid cash for transactions and appropriated their hard earned savings and the investments of the so-called middle class through shares, fixed deposits.

This act is a glaring example of the ongoing trade deficits and fiscal deficits not only in Gujarat but the entire Nation, leading to economic recession and promoting oligarchy to diffuse the social fabric of the diversified communities of India.

RECOMMENDATIONS

- ➔ It is high time to demand the centre to enact a Central Legislation in the lines of Forest Act in order to protect the customary and governance rights of the marine and coastal communities over marine and coastal commons.
- ➔ Cumulative Impact Assessment of SEZs, SIRs and Ports and related industrial projects along the Gulfs of Gujarat to be carried out using International Protocols and Standards and calling for a moratorium on further expansions till the completion of the study and with the application of Polluter Pay Principle and Precautionary Principle⁵ by the Supreme Court of India, 1996, as it is evident from the National Centre for Sustainable Coastal Management, Chennai and Space Applications Centre Ahmedabad study report that “47% coast of Gujarat is an endangered coast”.
- ➔ Kalpasar Project must be withdrawn for its ecological, financial and economic unviability by the suo-motto intervention of the Supreme Court as there is no regard for ecological integrity and their services.

⁵ Vellore Citizens' Welfare Forum vs. Union of India 1996(5) SCC 647
Indian Council for Enviro-Legal Action vs. Union of India 1996(3) SCC 212

→ When the developed world is considering Ecology as a stakeholder, India in spite of its ratification of UNCLOS, Biodiversity Convention, Paris Convention, permits the investors to exploit the ocean and coastal commons in a ruthless manner for the expansion of global capital and governance in alliance with Indian MNCs to disastrous consequences not only for humanity but for the entire Planet Earth. So, the Ecological Integrity needs to be protected by revisiting the policies, norms, legislations and bringing in amendments or new laws.

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