

Blue Economy and Coastal Rehabilitation in Gujarat: A Study in Fisheries Sector

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Abstract

The Blue Economy which is conceptually the sustainable development deals the oceanic and coastal sustainability a coastal community. The blue economy is dealing the governance and holistic approaches the need and requirement of the coastal requirement in fishing sector. The law governing fishing regulation and policy frameworks aligned with the maritime vision 2030. This paper discusses the blue economy legal framework in context with Coastal rehabilitation of the coastal community in state of Gujarat with reference to Veraval and Somnath.

Key Words: Blue Economy, Coastal Community, Fisheries, Gujarat, Fishing Laws.

Introduction

The concept of blue economy is broader in focus than the concept of ocean economy which is limited to exploitation of oceanic resources and opportunities offered by the oceans. The activities under the blue economy aim to promote the productivity of the ocean while protecting its health. The current focus of the ocean economy is the extraction of minerals, fishing, shipping, etc. Whereas, the blue economy embeds the concept of inclusive growth and sustainable development at the core of each developmental initiative in and around the ocean and other water resources. "Human development activities, however, have seriously taxed the resilience of the marine and coastal resource base. FAO data indicates that 87% of global fish stocks are fully or over-exploited (FAO 2012).

To illustrate both approaches, the oceanic economic policies may be centered on the development of critical infrastructure such as ports, shipyards, deep sea mining, oceanic energy, fishing, processing industries, etc. or economic development of the coastal and fishermen community etc. The blue economic policies go many steps further to include the element of efficiency, environmental impact and protection, social impact and inclusion, financial impact and inclusion, employment creation, sustainable extraction of mineral resources, re-engineering and re-thinking on the development of infrastructure on the coast and in the ocean, issues with regard to water pollution and discharge of petroleum and hazardous chemicals into deep seas, maritime activities, maritime safety and security, maritime co-operation, tourism etc. The blue economy approach is a concerted focus on all intertwined aspects of the ocean to achieve sustainable development.

II. Review of Literature

The Development of blue economy in India calls for policy initiatives to augment the opportunities offered by the 7516.6 kilometers long coastal line hosting a population of 171 million in coastal districts and 0.44 million population in island territories. The First Indian Ocean Rim Association (IORA) Blue Economy Dialogue was held in Goa in 2015. India being the strategically important player in the Indian Ocean Region (IOR) needs to take a lead in incorporating in the domestic policy and communicating the blue economy vision to the

island nations in the IORA.

“It has pioneer status on deep-sea mining of Poly-Metallic Nodules (PMN), an allotted area of 75000 km² in the Central Indian Ocean (CIO) by International Sea Bed Authority (ISBA) for exploration of PMN”. The right to undertake exploratory surveys in 10,000 km² area in CIO for hydrothermal mineralization and documented availability of large resources of gas hydrates is poised to gain substantially through adoption of blue economy as a priority area of investment. The Ocean Policy document, 1982 of the erstwhile Department of Ocean Development -DOD now the Ministry of Earth Sciences (MoES), understandably has no mention on blue-economy and the conceptual notes contained in the said document are redundant under the emerging international scenarios and emergent regional priorities. Nevertheless, the initiatives of DOD/MOES over the past two decades have facilitated the mapping of resources- both living and non-living in the Indian EEZ and contingent sea, delineation of potential areas for mining, development of infrastructural capabilities, technological innovations, and expertise required to perform the challenging tasks of exploration and exploitation of ocean resources with least long-term impacts on the environment and marine ecosystems.

The existing Indian practices on the ocean policy and its development lack of uniformity towards the governance and practices. The Major Port Act 1963 deals with policies and governance of the Major Ports in India, which are under the control of the Government of India. Indian Ports Act, 1908 which deal with private ports, minor ports, law applicable on the foreign vessel coming to Indian ports or vessel at India ports. The Merchant Shipping Act, 1958 provides registration, certification, safety, security, pollutions by Indian ships and consolidates the law relating to merchant shipping.

The sustainable development in maritime sectors is the need of the hour adopts policies from ocean economy to blue economy. It should be incorporated in the development of maritime clusters in India to create complete ecosystems of maritime sectors in country to make its more attractive & efficient. India has to develop the ocean policy in the form of blue economy. National Ocean Policy documentation for sustainable economic gains from the ocean sector is a challenging task given the existing technological uncertainties, market trends, fluctuating demand and supply quotients, and a loose legal and policy framework. “Whereas, the Maritime activities in the territorial waters of India is a state subject, beyond which and within the EEZ it is dealt by several Ministries and Departments like the Ministry of Earth Sciences, Ministry of Agriculture, Ministry of Commerce, Ministry of Surface Transport, Ministry of Environment & Forest, Department of Biotechnology, Ministry of External Affairs, Ministry of Defence, Ministry of Law, etc.”, and in the international waters it is governed by the legal instruments contained in protocols to which India is a signatory. In the given scenario, there is a need for unification of effort and approach, revalidation of the existing legal and policy framework, and establishing proper inter-departmental linkages in the ocean sector. The present proposal is a step forward in this direction.

Blue Economy Initiatives:

The quantum of economic opportunities that prevail to explore the oceanic resources for the betterment of mankind is abundant. However, one needs to remember that the economic opportunities come with a threat of the degradation of ocean ecosystems. Henceforth, the blue economy comes into picture as a tool that ensures economic, social and environmental goals are satisfied together. In other words, it calls for sustainable exploitation of ocean resources causing the least possible damage to the ocean ecosystem.

The Goa Declaration, 2015 deliberates at length key aspects of blue economy that included accounting framework, fisheries & aquaculture, renewable ocean energy, ports, shipping, and manufacturing services, and deep sea-bed mining. The contributions of blue economy to a country's GDP vary greatly from nation to nation. India's blue economy contribution to its GDP is not assessed so far by the government. However, its significance can be well understood from the fact that in fishing and aquaculture India ranked 7th in a 2012 global ranking of major producing countries conducted by FAO of the United Nations. According to the National Fisheries Development Board, India's fishing industry employs as many as fourteen million people. According to UNCTAD – Review of Maritime Transport 2015, India ranks 17th in the world in terms of ship ownership.

International Scenario

The concept of a Blue Economy or economic gains from the ocean sector is gaining momentum worldwide. Growing demands on food, energy and minerals and a declining trend in land resources, are expected to tilt the economic viability towards the ocean and its resources in the coming decades. A critical assessment on India's blue-economy potential assumes significance in the light of the Perth communiqué released after IORA's 14th meeting of COM, which inter-alia notes "Member Countries are committed to strengthening of Blue Economy, through sustainable development of fisheries, judicious exploitation of minerals, harnessing renewable energy and encouraging coastal tourism to stimulate growth and improve food and energy security as a common source of growth, innovation and job creation." The Countries like USA, UK, France, Australia and China have completed or nearing completion of national assessments on blue economy as also many of the IORA Member States viz; Bangladesh, Sri Lanka, Indonesia and Mauritius are in the process of completing the documentation on blue economy by this year end.

The assessment of the blue economy ensures safe, secure and sustainable development of maritime sectors. It prepares the nations to face Network Centric Warfare (NCW) a threat does not affect the sustainable development of maritime sectors. There is need to enhance cooperation with ASEAN, Japan, Australia, Bilateral/Multilateral cooperation, defense agreements, training between member countries, resolve fisheries dispute with Sri Lanka and invest in more projects. The blue economy approach also strengthens policy Look and Act – East, South, and West to enabler maritime security.

III. Research Objective:

- a. To understand the blue economy and ocean governance and strengthen the blue economy through fishing activities.
- b. To examine the existing administrative and legal mechanism and identify the policy of check and balance for the pathway of maritime business in Gujarat.

IV. Major Research Questions

- a. What do you mean by the fishing and how does it contribute to blue economy in Gujarat coastal line?
- b. How the legal and administrative mechanism can be helpful for fishing sustainability in state of Gujarat?

V. Research design

- a. Location of the project: This research is carried out in the selected districts in the state

of Gujarat Veraval and Somnath fisheries market.

b. Sample of the research: The representative sample size will be part of the authorities dealing with legal and administrative activities subject matters fishing activities in the specific purposive sampling will be used for the collection of the data.

c. Respondents: Respondent's were the authorities from the Fisheries Department Government of Gujarat. And selected fishing communities and fisherman involved in fisheries activities

d. Research methods: The research is doctrinal as well as non-doctrinal in nature. The doctrinal part is to analyse the various rules, regulations and notifications applicable for fishing activities in the State of Gujarat. The non-doctrinal will be field work study, the research method for data collection using purposive sampling and data will be semi-structured in-depth interviews and observations of the field.

VI. Laws related to the Blue Economy

Challenges in the Fishing Sector: Despite Gujarat being a major fish-producing state, fisherfolk face challenges such as industrial pollution, which affects marine life. Additionally, coastal infrastructure projects have led to concerns about strategic exclusion and eviction of fishing communities.

National Blue Economy Policy: The Ministry of Earth Sciences has drafted a National Policy on Blue Economy, focusing on marine fisheries, aquaculture, fish processing, and ocean governance. This policy aims to optimize maritime resources for sustainable coastal development. The laws aim to sustainably manage ocean resources, protect marine ecosystems, and support economic growth. Fisheries legislation in India includes acts that regulate fishing, protect fish, and promote the development of fisheries. Some of these acts include: This act protects, conserves, and develops fisheries. It prohibits fishing in sanctuaries, and allows the government to regulate fishing in protected waters. National Inland Fisheries and Aquaculture Policy (NIFAP) – This policy outlines strategies for sustainable inland fisheries and aquaculture development. Indian Fisheries Act, 1897 – One of the earliest laws regulating fishing practices, including penalties for illegal fishing methods. Environment Protection Act, 1986 – Ensures environmental safeguards for fisheries and aquaculture operations. Coastal Regulation Zone (CRZ) Notification – Regulates activities along coastal areas to protect marine ecosystems. Marine Fishing Regulation Acts – Enacted by various states to manage marine fisheries and prevent overfishing.

The Indian Marine Fisheries Bill, 2021

This bill promotes the development of fisheries resources in India's exclusive economic zone. It also aims to ensure that Indian fishing vessels use fisheries responsibly in the high seas. The Indian Marine Fisheries Bill, 2021 was introduced to regulate and manage marine fisheries in India. It aimed to ensure sustainable development, responsible utilization, and conservation of marine resources while promoting the livelihoods of traditional and small-scale fishers.

The Indian Fisheries Act, 1897

This regulatory mechanism on fisheries were deals the inshore water as well as rivers. Which prohibits poisons in the fishing, its primary preventing the destruction fishing practices, such as explosive and poison to catch fish. Its also supplements the fishing related laws in different state.

The Merchant Shipping Act, 1958

It's a law which deals and regulates the shipping affairs and India. Deals the registration, safety, environment and employment concerns as well. Where the fishing laws directly delas the maritime fishing trade.

Other fisheries legislation in India- India has several fisheries-related legislations aimed at regulating and conserving fishery resources. Indian Fisheries Act, 1897: One of the earliest laws, it prohibits destructive fishing practices like dynamiting and poisoning water bodies. Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Act, 1981: This law regulates fishing by foreign vessels in India's maritime zones. Marine Fishing Regulation Acts: Various maritime states in India have their own regulations to manage marine fisheries.

Coastal Aquaculture Authority Act, 2005: Governs coastal aquaculture activities to ensure sustainable practices. Wildlife Protection Act, 1972: Includes provisions for the protection of aquatic species. Environment Protection Act, 1986: Regulates activities that may impact aquatic ecosystems.

The field study explored the socioeconomic, livelihood, and rehabilitation concerns of fishermen, in the fishing industry in relation to the blue economy. The Blue economy, focuses on and conservation of maritime resources, job opportunities, and ocean ecosystem health. The data were collected, through in-depth semi-structured and unstructured interviews and observational methods. The field study-based was further explored the process of fish export and community engagement in fishing activities and their contributions to the fishing industry.

Figure: 01 Life of Fishing community blue economy in perspective of job opportunity

S. No	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total of (2015-19)
1	Andhra Pradesh					2	2
2	Goa		1				1
3	Gujarat						0.00
4	Karnataka	Committed liability			1	1	2
5	Kerala						0.00
6	Maharashtra		3				3
7	Odisha				1		1
8	Puducherry						0.00
9	Tamil Nadu		1				1
10	West Bengal						0.00
	Grand Total	0.00	5	0.00	2	3	10

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying
- : NA

The fishing community plays a crucial role in the blue economy, which focuses on sustainable ocean-based industries. In India, the fisheries sector alone provides livelihoods to about 16 million fisherfolk and fish farmers at the primary level, with nearly twice that number engaged along the value chain. The blue economy contributes around 4% to India's GDP and supports 95% of the country's trade through maritime routes.

Fishing activities in Veraval and Somnath in the State of Gujarat.

Veraval and Somnath, located in Gujarat, are well-known for their thriving fishing industry. Veraval, in particular, is home to a bustling fishing harbor that plays a crucial role in the region's economy. The town has a strong maritime heritage, with numerous fish processing and export businesses operating in the area.

In addition to commercial fishing, the region also has businesses specializing in fishing equipment, such as A One Fishing Net, which provides fishing nets and supplies. The coastal location of these towns makes them ideal for fishing-related activities, and they contribute significantly to Gujarat's seafood industry.

Figure: 02 Fishing at Veraval and Somnath in the State of Gujarat: Administration and policy frameworks.

S. No	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	A & N Islands	100					100
2	Andhra Pradesh	1300			1340	1500	4140
3	Arunachal Pradesh	92		48	100		240
4	Assam		75	50	200		325
5	Bihar				1000		1000
6	Chhattisgarh	400			200		600
7	Gujarat	100	100				200
8	Himachal Pradesh	133			200	200	533
9	Jammu & Kashmir	133		200	200	657	1190
10	Jharkhand	1000	417		1000		2417
11	Kerala		167		132		299
12	Madhya Pradesh	195	167				362
13	Maharashtra		65				65

14	Mizoram	200		43	50	80	373
15	Manipur			34			34
16	Nagaland	270				1800	2070
17	Rajasthan		20				20
18	Tripura	250		140	1493		1883
19	Uttar Pradesh	327		313		1400	2040
20	Uttarakhand	309	666		600		1575
21	West Bengal			122	300		422
	Grand Total	4809	1677	950	6815	5637	19888

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying
 -: NA

Fishing in Veraval and Somnath is deeply rooted in the coastal economy of Gujarat, with policies and administrative frameworks shaping its sustainability and growth. The Central Marine Fisheries Research Institute (CMFRI) has a Veraval Regional Station that plays a crucial role in research and development for marine fisheries and mariculture. This station focuses on sustainable marine fisheries management, resource assessment, and the development of mariculture technologies such as sea cage farming and seaweed farming. It also collaborates with national and international organizations to enhance fisheries policies and practices. Additionally, the Veraval Fishing Harbour Project Phase-II is a government initiative aimed at improving infrastructure for fishing activities in Gir Somnath. This project supports inland waterways and ports, ensuring better facilities for fishermen and stakeholders. Local fishermen in Veraval and Somnath are experts in weaving fishing nets, a skill passed down through generations. The fishing season typically begins in August after a 61-day monsoon fishing ban, which is enforced to allow fish populations to replenish.

VII. Occupational Rights in Fishing

Fishermen have specific occupational rights that protect their livelihood and access to marine resources. Here are some key aspects:

Legal Protections: The Fishermen (Protection and Welfare) Bill, 2022 aims to safeguard the rights of fishermen in India, ensuring welfare measures and protection. Marine Fishing Regulations: Coastal states in India have enacted Marine Fishing Regulation Acts (MFRAs), which designate fishing zones exclusively for traditional fishermen using non-mechanized boats.

International Disputes: Fishermen often face challenges due to maritime boundary disputes, such as the ongoing India-Sri Lanka fishing conflict, which has led to arrests and boat seizures.

Social Security:

Fishermen often face economic and social challenges, and various schemes exist to support their welfare. In India, the National Scheme of Welfare of Fishermen provides financial assistance for housing, community halls, and tube wells, ensuring better living conditions. Additionally, the Pradhan Mantri Matsya Sampada Yojana (PMMSY) focuses on livelihood support, insurance coverage, and skill development.



Figure: 03 Social Security in Fishing

S. No	Name of the States	2015-16	2016-17	2017-18	2019-20	2019-20	Total
		Physica (No.;	Physical (No.;	Physical (No.;	Physica (No.;	Physica (No.;	
1	A & N Islands	14839	14839	14839			44517
2	Andhra Pradesh	404242	405347				809589
3	Arunachal Pradesh	10000	7000	1000			18000
4	Assam	164939	157325	157325			479589
5	Bihar	300000	300000	300000			900000
6	Chhattisgarh	210000	210000	210000			630000
7	Daman & Diu	9500	9500	9500			28500
8	Delhi			400			400
9	Goa	12721	11847	11840			36408
10	Gujarat	218270	218270	218270			654810
11	Himachal Pradesh	12153	12901	13413			38467
12	Jammu & Kashmir	15000	15000	15000			45000
13	Jharkhand	114500	126000	126000			366500
14	Karnataka	204689	204689	204689			614067
15	Kerala	237501					237501
16	Lakshadweep	12052	12052	12052			36156
17	Madhya Pradesh	175199	180988	184933			541120
18	Maharashtra	323838	323838	323838			971514
19	Manipur	12000	12000	1000			25000
20	Mizoram	10000	10000	1000			21000
21	Odisha	1111111	1150000	1150000			3411111

22	Puducherry	54367	54367	54367			163101
23	Punjab	1500	5000	5000			11500
24	Rajasthan	10833	11027	11220			33080
25	Sikkim	7000	7000	1000			15000
26	Tamil Nadu	716308	666380	666380			2049068
27	Telangana	276799	326154	326154			929107
28	Tripura	1000	1000	1000			3000
29	Uttar Pradesh	193000	193000	193000			579000
30	Uttarakhand	2000	2000	1000			5000
31	West Bengal	221563					221563
	Grand Total	5056924	4647524	4214220	0.00	0.00	13918668

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying
 - : NA

Kerala has also assessed social protection measures for fish workers, aiming to improve their financial security and working conditions. These initiatives help safeguard fishermen against economic instability and provide essential benefits. Ever since the Coastal Zone have been recognized as a significance area of the Coast line. Which has the historical perspective of the coastal relation between the various stakeholders. It is important for the coastal communities as well as the coastal state. It's also facilitating the domestic and international maritime and shipping business. The Gujarat Coastal line is biggest coastal line in India. The conclusion and suggestion are divided in two parts as perspective for consideration of concerns of the socio-legal concerns of the fishing community and field visit observation-based consideration.

VIII. Consideration of the Fieldwork Observations

The Blue economy and fisheries sector an important role in the economy development through coastal activities. The researcher and during field visit conclusions on the basis of the observation and interaction with the coastal community of the site of the project Veraval and Somnath in the state of Gujarat:

The coastal fishing management blue schemes policies need to the implemented with the coordination on the concern of the fishing community welfare. The coastal community social rights of the fisherman must be given the priority to the coastal rehabilitation, coastal environment and rights of the coastal society and livelihood of the fisherman Need of the utilization of the blue economy schemes of the government of India in the coastal area. Coastal environment sustainability needs to comply with the social development utmost significance amongst the all-maritime coastal area and fishing activities.

Suggestion for Implementations of the Blue Economy Development of the Schemes in the Fishing Sector. After the analysis of the various provisions related to the blue economy Coastal

Rehabilitation in Gujarat and fishing field visit observation, the following suggestion can be made: -

Need of Blue Economy Coastal Management Plan and the Blue Fishing and Fishing Communities:

As per the applicable various blue economy laws, policies, coastal development. Fishing laws and coastal sustainable development policies and practices.

Need of Blue Economy Safeguarding in Fishing:

The Blue economy where the coastal community need to interlinkages with the marine coastal regulation and its management. The coastal zone which is very sensitive related to various coastal communities their livelihood and occupational rights.

Need of regulated coastal tourism fishing community:

The Blue economy being an important an aspect of the ocean economy development coastal governance. The need of the coastal tourism laws, rules and regulation to govern the coastal management. The coastal tourism which impacts on the fishing community and coastal life, coastal activities and coastal initiatives in the coastal area. During the field visit interaction at coastal area it has been seems that the government would like to promote the tourism at coastal area but how it's can be done still need to be work upon.

Blue economy schemes and coastal development programme must be strengthening:

The multiple coastal regulation zone and diverse coastal activities must be in aligned with economic and community an interest with respect to environment, security, coastal livelihood and occupational rights of the fishing communities.

The coastal activities clearance must be given with proper discussion with the coastal community:

The authority and coastal governance must be based on co-relation and coastal relations dealing with the subject of the coastal community and their interests.

Integrated and customized implementation of blue economy development plan:

With regards to the coastal management plan in the state of Gujarat as per the applicable coastal governance, coastal environment and coastal security must be integrated and customized an accordance to the coastal eco-system and coastal activities.

The implementation of the policy should be flexible looking the welfare of the coastal community aligned with blue economy:

As per the nature of the coastal activities. The Coastal Community Participations (CCP) as stakeholders must be look into the policy implementation concern.

IX. Conclusion

The outcome of this project is based on the analysis of the various laws, policies, practices interlinked with the blue economy it's significance of coastal management, coastal governance, Coastal fishing and Coastal sustainable development. The fieldwork-based study related to the implementation of the blue economy schemes coastal activities and fishing and rights of the fishing communities with in-depth an interview and discussions.

The outcome of this research is also based on the observation of this project researcher during

the visit of Veraval and Somnath in the state of Gujarat as the site of the field study. This project is concluded with the suggestion which is an integral part of the research outcome for the effective implementation of the blue economy scheme in the state of Gujarat.

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