Chapter-22
Government Policies and Initiatives for Blue Economy and Sagarmala

Dr. Nilima Rajaram Mirajkar
Associate Professor, Department of Economics
Doshi Vakil College, Goregaon ,Raigad

Abstract

The Sagarmala Project, initiated by the Government of India on July 31, 2015, is a comprehensive program aimed at revitalizing and optimizing India's maritime infrastructure with an expected completion timeline of 2025. In the context of India's rapid economic growth, the maritime sector plays a crucial role in national economic development. Although Indian ports handle nearly 95 percent of the country's EXIM trade by volume, the share of merchandise trade in GDP remains relatively low at around 42 percent.The Sagarmala Programme focuses on port-led development through modernization of ports, improved connectivity, port-based industrialization, and sustainable development of coastal communities. This research study examines the role of government policies and initiatives in strengthening the Blue Economy through the Sagarmala programme.The study highlights how improved maritime infrastructure can reduce logistics costs, enhance trade competitiveness, generate employment opportunities, and promote sustainable economic development in coastal regions. The research also examines challenges related to environmental sustainability, policy coordination, and the socio-economic impact on coastal communities.

Introduction

The Sagarmala Programme, launched by the Ministry of Ports, Shipping and Waterways, represents a strategic initiative aimed at promoting port-led development in India. The program focuses on four major pillars: port modernization, connectivity enhancement, port-linked industrialization, and development of coastal communities.

India possesses a vast coastline of approximately **7,517 kilometers**, along with **14,500 kilometers of navigable waterways**. These natural advantages provide significant opportunities for strengthening maritime trade and developing the Blue Economy.

Research indicates that the Sagarmala programme has the potential to generate annual logistics savings of **₹35,000–₹40,000 crores** through improved efficiency in the transportation of key commodities. Additionally, the program is expected to contribute nearly **2 percent to India's GDP** and generate **approximately 10 million employment opportunities**, particularly in coastal regions.Despite India's ports handling around **95 percent of EXIM trade by volume**, the share of maritime transport in the freight modal mix is less than **6 percent**, which is significantly lower than countries such as China (24 percent) and Germany (11 percent). The Sagarmala initiative aims to address these inefficiencies by strengthening port infrastructure and improving connectivity.

Through strategic investments in maritime infrastructure and coastal economic zones, the Sagarmala Programme seeks to transform India into a global maritime hub.

Review of Literature

International Studies

1. **Gabriel Figueiredo De Oliveira & Pierre Cariou (2015)**
   Studied the impact of competition on container port efficiency and concluded that competition significantly improves port performance.
2. **Yapa Mahindra Bandara & Hong-Oanh Nguyen (2016)**
   Analyzed factors influencing port infrastructure tariffs and their impact on port competitiveness.
3. **Xin Shi & Huan Li (2016)**
   Examined port hinterland development using Shenzhen Port as a case study.
4. **Eva Osekowska, Henric Johnson & Bengt Carlsson (2017)**
   Developed maritime vessel traffic models for improving port efficiency.
5. **Axel Merkel & Johan Holmgren (2017)**
   Conducted efficiency analysis of maritime ports and highlighted the importance of technological advancement in port operations.

Objectives of the Study

1. To study port modernization and expansion of existing ports.
2. To examine the development of new Greenfield ports.
3. To analyze the development of port-proximate industrial clusters and Coastal Economic Zones.
4. To examine reduction in logistics cost and transportation time.
5. To study sustainable development of coastal communities and coastal tourism.
6. To analyze connectivity between ports and hinterland through multimodal logistics.

Research Methodology

Study of Government Policies and Initiatives for Blue Economy and Sagarmala

The research methodology explains the procedures and techniques used to analyze government policies and initiatives related to the **Blue Economy and the Sagarmala Programme**. The present study is mainly based on secondary data and qualitative analysis.

1.Research Design

The study adopts a **descriptive and analytical research design**. It aims to describe and evaluate the role of government policies and initiatives in promoting the Blue Economy and port-led development through the Sagarmala programme. This design helps in understanding policy frameworks, infrastructure development, and economic impacts.

2. Nature of Data

The study is based on **secondary data**. Relevant information has been collected from various published and reliable sources such as:

- Government reports and policy documents
- Research papers and academic journals
- Economic Survey reports
- Ministry of Ports, Shipping and Waterways publications
- Books, newspapers, and official websites

- Reports related to Blue Economy sectors such as fisheries, maritime transport, coastal tourism, and renewable ocean energy.

3. Sources of Data

Data for the study have been collected from the following sources:

1. Government publications and policy documents on Blue Economy and Sagarmala.
2. Reports of the Ministry of Ports, Shipping and Waterways.
3. Economic Survey of India and NITI Aayog reports.
4. Research journals, articles, and conference papers.
5. Books and online academic databases.
6. Websites of international organizations related to maritime development.

4. Methods of Data Analysis

The collected data were analyzed using the following methods:

Descriptive Analysis: To explain the objectives, scope, and policies of the Blue Economy and Sagarmala programme.

Comparative Analysis: To compare various government initiatives and their impact on maritime development.

Policy Analysis: To evaluate government strategies for sustainable coastal development and port modernization.

Interpretative Analysis: To interpret the economic, social, and environmental impacts of these initiatives.

5. Scope of the Study

The study focuses on the role of government policies in promoting the Blue Economy in India, particularly through the Sagarmala programme. It covers areas such as:

- Port modernization and connectivity
- Coastal infrastructure development
- Fisheries and marine resources
- Coastal community development
- Maritime trade and logistics improvement.

6. Tools and Techniques

The study uses simple analytical tools such as:

- Tables and charts
- Graphical representation of data
- Comparative policy analysis

These tools help in presenting the information clearly and understanding the impact of policies on maritime economic development.

Ports of Indian State	Port Authorities and Management	Logistics and supply chain Manager	Technology Providers	Industrial Association	Local Business Owners or Traders	Local community representatives	Total Sample
Maharashtra State							
Vadhavan port	9	7	8	12	6	12	54
Rewas Port	6	10	12	6	8	7	49
Total(A)	15	17	20	18	14	19	**103**
Gujarat State							
Deendayal port	11	6	7	8	10	5	47
Bhavnagar port	9	10	9	6	7	14	55
Total(B)	20	16	16	14	17	19	**102**
Grand Total	35	33	36	32	31	38	**205**

State wise selection in scope for cement industry with respect to declining limestone reserves:

The Indian cement industry has witnessed substantial growth, increasing from a capacity of 160 million metric tonnes per annum (MTPA) in 2004 to 362 MTPA in 2014. Presently, India stands as the world's second-largest cement producer, projecting a demand of 700 to 800 million tonnes by 2025, based on a GDP growth rate of 7 to 8 percent annually. Logistics, constituting 25 to 30 percent of cement costs, pose challenges for global exports due to inefficiencies.

Traditionally, cement capacity in India has been established through inland plants near limestone reserves. However, the depletion of limestone in coastal states like West Bengal, Kerala, Odisha, Tamil Nadu, and Maharashtra necessitates a shift in approach. To meet the additional 100 MTPA capacity requirement, coastal clinkerisation clusters in southern Gujarat and central Andhra Pradesh are proposed. These clusters, with grinding units strategically located at ports near demand centres such as Mumbai, Cochin, Chennai/Ennore, and Kolkata, can address logistical challenges. Limestone-rich districts identified for these clusters include Kutch, Junagarh, and Bhavnagar in Gujarat, and Guntur, Nalgonda, Kurnool, and Cudappah in Andhra Pradesh. This strategic plan aims to optimize resources and address environmental concerns while meeting the burgeoning demand for cement in India.

State-wise Connectivity and Reduced Logistics Costs in the Cotton Export Sector of the Textile Industry:

India has a raw material–based competitive advantage in apparel manufacturing—it is the third-largest cotton producer in the world and Gujarat is the highest cotton producing state in India. The cotton produced in Gujarat and Maharashtra region currently moves to North India and finished products are then exported through Gujarat ports.Amreli, Bhavnagar, Jamnagar, Rajkot, Surendra Nagar, and Ahmedabad are among the highest cotton-producing districts in India. An export-based apparel cluster in the region using the cotton produced in the districts could reduce the overall

movement of cotton and corresponding logistic costs. This can improve the competitiveness of apparel exports from the country.

State(s)/Region(s) covered by the study, if applicable:

Selection of Study Area: The research will be conducted in two ports each from Maharashtra State and Gujrat State which are selected for expansion and new development under SagarMala project of Central Government.

Capacity expansion at major ports					
S. No.	Name	Existing Capacity (MTPA)	Ongoing expansion	Additional capacity from Master Plan projects	Capacity (MTPA)
1.	Kandla	121.4	24.5	55.0	185.9
2.	Mumbai	44.5	29.5	4.0	48.5
3.	JNPT	79.4	60.0	45.0	124.4
4.	Mormugao	43.8	0.0	35.0	78.8
5.	Kamarajar(Ennore)	37.0	42.0	3.0	82.0
6.	Chennai	86.0	0.0	12.0	98.0
7.	V.O. Chidambaranar	44.6	38.9	30.6	75.2
8.	New Mangalore	77.8	6.7	5.5	90.0
9.	Cochin	49.7	4.1	2.0	51.7
10.	Visakhapatnam	96.8	38.8	8.0	143.5
11.	Paradip	119.8	65.6	10.0	195.4
12.	Kolkata Port Trust	70.9	10.8	12.0	82.9
	Total capacity (MTPA)	**871.5**	**320.9**	**222.1**	**1,414.5**

Six mega ports are planned under Sagarmala:

1.Sagar Island -West Bengal

2. Paradip Outer Harbour- Odisha.

3. Sirkazhi -Tamil Nadu

4. Kanyakumari- Tamil Nadu Major Transhipment Port at Kanyakumari.

5. Belikeri -Karnataka.

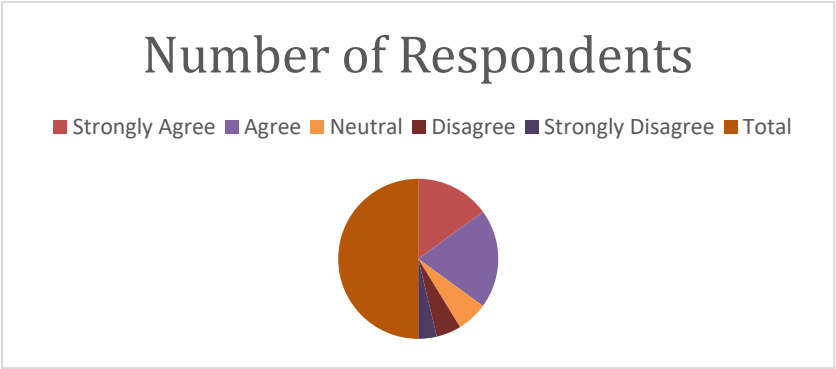
6. Vadhavan- Maharashtra

The Sagarmala initiative stands as a colossal port-centric infrastructure endeavor, spanning a vast 7,500 km coastline and 14,500 km of potentially navigable Additional Table for Primary Data Analysis (Sample)

Opinion of Respondents	Number of Respondents	Percentage
Strongly Agree	60	30%
Agree	80	40%
Neutral	25	12.5%
Disagree	20	10%
Strongly Disagree	15	7.5%
Total	**200**	**100%**

Interpretation:

70% of respondents agreed that Sagarmala improves maritime trade efficiency.



Suggested Graph for Primary Data

Pie Chart: Respondents' Opinion on Sagarmala Impact

- Strongly Agree – 30%
- Agree – 40%
- Neutral – 12.5%
- Disagree – 10%
- Strongly Disagree – 7.5%

Findings of the Study

1. Growth of Port-Led Development

The **Sagarmala Programme** has significantly encouraged **port-led economic development** in India. The initiative focuses on modernizing existing ports, constructing new ports, and integrating them with industrial clusters. Through this approach, ports are not only used for cargo handling but also serve as centers for industrial growth and economic activities. The development of port-based industries such as petrochemicals, logistics parks, and manufacturing units has strengthened regional economies, especially in coastal states. This model has helped improve India's maritime trade capacity and competitiveness in global markets.

2. Improved Logistics Efficiency

One of the key achievements of the programme is the **improvement in logistics efficiency**. Modernization of port infrastructure, digitization of port operations, and improved road, rail, and inland waterway connectivity have reduced cargo handling time and transportation costs. Earlier, logistics costs in India were relatively high compared to developed economies. With better connectivity between ports and hinterland regions, goods can now be transported faster and more efficiently. This has helped boost international trade and increased the competitiveness of Indian exports.

3. Growth of the Coastal Economy

The **Blue Economy** concept has played a major role in strengthening India's coastal economy. The development of marine-based sectors such as fisheries, aquaculture, marine tourism, offshore energy, and shipbuilding has created new economic opportunities. Coastal tourism activities, cruise tourism, and beach-based recreational

industries have expanded in many coastal regions. In addition, modernization of fishing harbors and fish processing facilities has improved the income and productivity of fishermen and related industries.

4. Infrastructure Development

The study finds that the programme has led to **large-scale infrastructure development** across the maritime sector. Major investments have been made in port modernization, development of new terminals, and establishment of **Coastal Economic Zones**. These zones aim to attract domestic and foreign investments by providing better logistics facilities and industrial infrastructure. Industrial corridors and port connectivity projects such as highways and dedicated freight corridors are also being developed to strengthen the supply chain network. This infrastructure expansion supports economic growth and enhances trade efficiency.

5. Environmental Challenges

Despite economic benefits, the expansion of maritime activities has raised **environmental concerns**. Increased port construction, industrial activities, and shipping traffic may lead to marine pollution, oil spills, and habitat destruction. Coastal ecosystems such as mangroves, coral reefs, and marine biodiversity are at risk due to rapid development. Sustainable management of marine resources and strict environmental regulations are therefore necessary to balance economic development with ecological conservation.

6. Impact on Coastal Communities

The development initiatives under the programme have generated **employment opportunities** in sectors such as port operations, logistics, tourism, and fisheries. However, traditional fishing communities in coastal areas sometimes face challenges such as displacement, restricted access to fishing zones, and changes in coastal ecosystems. Therefore, it is important to include local communities in development planning and provide them with skill development programs, alternative livelihood opportunities, and social protection measures.

7. Need for Policy Coordination

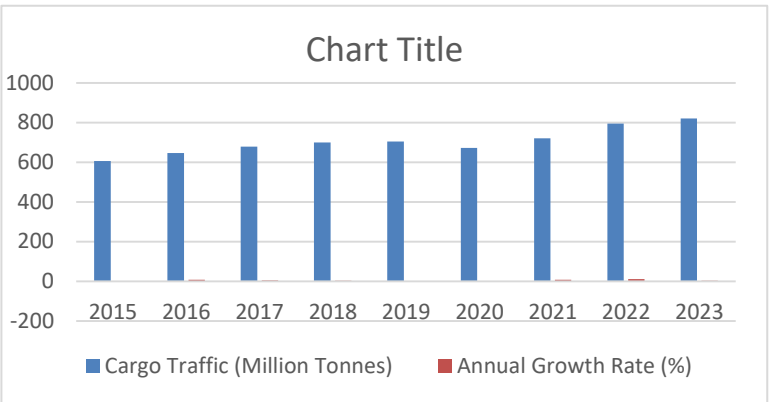
The successful implementation of maritime development projects requires **strong coordination between central and state governments**, as well as cooperation with private sector stakeholders. Since many projects involve land acquisition, environmental clearance, and infrastructure development across multiple jurisdictions, effective policy coordination is essential. Integrated planning and clear regulatory frameworks can ensure timely project implementation and maximize the benefits of the programme.

Table: Growth of Major Ports Cargo Traffic in India

Year	Cargo Traffic (Million Tonnes)	Annual Growth Rate (%)
2015	606	—
2016	647	6.7
2017	679	4.9
2018	699	2.9
2019	704	0.7
2020	672	-4.5
2021	720	7.1
2022	795	10.4
2023	820	3.1

Interpretation:

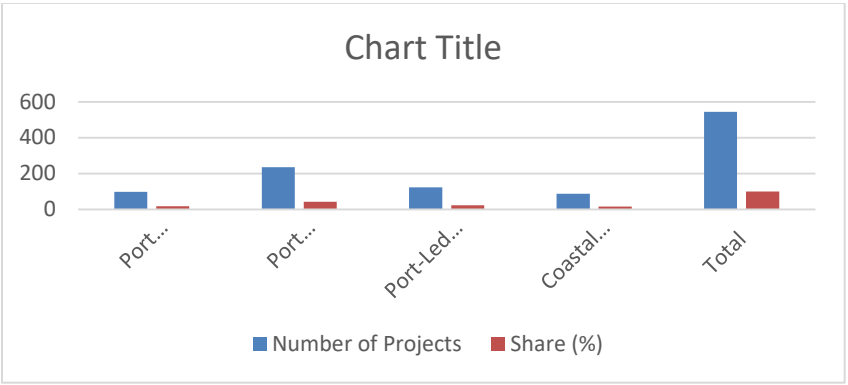
The table shows a steady increase in cargo traffic handled by Indian ports. The rise after 2020 indicates recovery and improvement in logistics efficiency under infrastructure initiatives such as Sagarmala.



2. Table: Distribution of Sagarmala Projects by Category

Category	Number of Projects	Share (%)
Port Modernization	98	18
Port Connectivity	235	43
Port-Led Industrialization	124	23
Coastal Community Development	88	16
Total	**545**	**100**

Interpretation:
Most projects under Sagarmala focus on **port connectivity**, which highlights the government's emphasis on improving logistics and transportation networks.



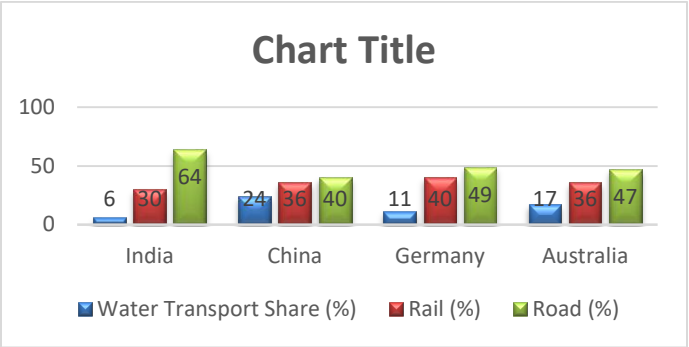
3. Table: Expected Economic Benefits of Sagarmala Programme

Indicator	Estimated Impact
Annual Logistics Cost Saving	₹35,000 – ₹40,000 Crore
Employment Generation	10 Million Jobs
Contribution to GDP	About 2%
Coastal Economic Zones	14 Proposed
Total Investment	₹8–9 Lakh Crore

4. Table: Freight Modal Mix Comparison (International)

Country	Water Transport Share (%)	Rail (%)	Road (%)
India	6	30	64
China	24	36	40
Germany	11	40	49
Australia	17	36	47

Interpretation:
India’s water transport share is significantly lower compared to other countries, highlighting the importance of the Sagarmala initiative.



Limitations of the Study

1. Limited availability of updated data on Blue Economy sectors.
2. The study focuses only on selected coastal regions.
3. Heavy dependence on secondary data.
4. Policy changes over time may influence outcomes.
5. Limited environmental impact analysis.
6. Limited stakeholder representation.
7. Time constraints.
8. Economic uncertainty in global maritime trade.

Suggestions for Blue Economy Development

1. Promote sustainable marine resource management.
2. Improve coastal infrastructure and logistics networks.
3. Introduce skill development programs for coastal communities.
4. Strengthen environmental protection measures.
5. Encourage private sector participation through PPP models.
6. Support fishermen and coastal communities through government assistance.
7. Improve coordination among government agencies.
8. Promote research and innovation in marine technology.

Conclusion

The Blue Economy and Sagarmala Programme represent a transformative initiative aimed at strengthening India's maritime sector and promoting sustainable economic growth. The programme has significantly improved port infrastructure, logistics efficiency, and maritime trade.

However, sustainable development requires a balanced approach that integrates economic development with environmental protection and social inclusion. Effective policy coordination, environmental safeguards, and community participation are essential for long-term success.

If implemented effectively, the Blue Economy and Sagarmala initiatives can position India as a global maritime power and contribute significantly to national economic development.

References

1. Ministry of Ports, Shipping and Waterways (2023). *Sagarmala Programme: Port-Led Development in India*. Government of India.
2. Prabhu, S., Arora, G., Jaspal, M., Pandey, A., & Gavankar, A. (2025). *Sea of Hope: The Blue Economy Imperatives for the Global South with Reference to India.*
3. Balaji R. (2024). *India's Blue Economy Priorities: Maritime Sector*. Current Science, 126(2), 177–184.
4. National Maritime Foundation (2024). Research and policy discussions on Blue Economy and maritime development in India.
5. Bhawana Sharma (2024). *Blue Economy Initiatives and India's Maritime Diplomacy.*
6. International Collective in Support of Fishworkers (2017). *Occupations of the Coast: Blue Economy in India and the Sagarmala Project.*
7. Government of India (2025). Reports on port modernization and maritime trade under the Sagarmala Programme.