

# Sustainable Development Goal 14: Safeguarding the Delicate Balance of Life Beneath the Waves : Assessing the Purpose & Progress of Agenda 2030

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## Abstract

Life below water is a complex, varied and important part of our planet. An aquatic ecosystem includes freshwater habitats like lakes, ponds, river, ocean and streams, wetlands, reefs etc. It plays a vital role in regulation of the climate, act as home to a vast number of species, and provide resources upon which human communities depend. This research paper delves into the assessment of Sustainable Development Goal 14 (Life Below Water) in the context of India. It discusses the components, threats and measures to alleviate the hazard of polluting marine environment. Examining in depth the history of UN on sustainable development goal 14, agreements and protocols signed, analyzing the conferences held in countries across the world including India, laws enacted by several countries across the world , pacts signed at international level. It explores the challenges, legal framework drawn, efforts and initiatives undertaken by the Government of India, roles played by the people in safeguarding aquatic ecosystems, including marine, ocean, and river bodies by collecting and compiling the relevant data from various national and International Agencies for analyzing and hypothesizing the poor condition of Life Below Water. Drawing from extensive research data collected in 2023, regarding India and the world, this study offers valuable insights into the current status of marine conservation and aquatic resource management in India.

## Introduction

An aquatic ecosystem is a vital component of our planet, encompassing the diverse range of species from microscopic zooplankton to gigantic whales in oceans and seas that cover over 70% of the Earth's surface.

**Sustainable development in the marine world** is necessary for both ecological and economic reasons, as it supports food security, livelihoods and the overall well-being of mankind.

**Meaning of Sustainable Development :** An Economic development that is conducted without depletion of or damaging the environment and other resources so as to conserve them for utilisation by the future generations.

**Sustainable Development Goal 14 : Life Below Water:** Global Goal 14 is one of the 17 sustainable development Goals set out by the United Nations in 2015 which specifically focuses on the conservation

and sustainable use of oceans, sea, other water bodies and marine resources. Sustainable development in the context of marine ecosystems seeks to balance human activities with the preservation of marine life, harnessing marine resources to ensure their long term viability, to preserve their health and biodiversity for future generations. This includes responsible fishing practices, protection of marine habitats, reducing pollution, and addressing the impacts of climate change to ensure the long-term viability of this crucial ecosystem. The official wordings of SDG 14 is “conserve and sustainably use the ocean, seas and marine resources for sustainable development”.

## History

**The United Nations 2030 Agenda for Sustainable Development**, often referred to simply as the “2030 Agenda” is a comprehensive global framework adopted by United Nations Member States in September 2015. It outlines a shared vision for a sustainable and prosperous future for people and the planet.

**History of the development of SDG 14:** [3]

**Rio+20 Conference (2012):** The SDG 14 rooted from the UN Conference on Sustainable Development also known as Rio+20 Conference, when world leaders considered the need to address the challenges being faced by the oceans and coastal areas.

**The Ocean Compact** was founded in response to the Rio+20 Conference, which aimed to further motivated the international action.

**Inclusion in the 2030 Agenda:** This made a significant milestone in recognizing the importance of oceans in global sustainability goals.

**Global Commitment:** SDG 14 received strong support from all over the world including governments, non- governmental organizations, and businesses. It recognizes the interconnectedness of marine ecosystems with human well-being and the global economy.

**High-Level Ocean Conferences 2017** have been organised by the United Nations to promote the implementation of SDG 14, and investigative conferences to encourage governments, stakeholders, and the private sector to take solid actions to protect aquatic life.

## Challenges Before India :

**Marine Pollution:** Increasing levels of marine debris in India, primarily from plastic waste, untreated sewage,

industrial discharge etc. is worrying since the expected mismanaged waste in India in 2023 will be 7,300,752 tonnes of plastic. The country will also be responsible for releasing an average of 3,30,764 tonnes of microplastics into waterways. [1]

**Overfishing:** Over exploitation of marine resources and unsustainable fishing practices were depleting fish stocks and harming the livelihoods of coastal communities.

**Coastal Degradation:** Coastal areas in India were facing erosion due to factors like rising sea levels, climate change, and improper coastal management.

**Coral Reef Degradation:** The health of India's coral reefs, particularly in the Andaman and Nicobar Islands and the Gulf of Mannar, was at risk due to various factors, including climate change-induced coral bleaching and pollution

**Inadequate Waste Management:** The inadequate management of solid and plastic waste in coastal areas posed a severe threat to life beneath the waves.

**Climate Change Impacts:** Climate change-induced phenomena such as sea-level rise and extreme

weather events were affecting coastal communities and marine habitats.

**Lack of Sustainable Fisheries Management:** The absence of comprehensive and sustainable fisheries management practices hindered efforts to protect marine life and support the livelihoods of fishing communities.

**Inadequate Enforcement of Environmental Regulations:** The enforcement of laws and regulations aimed at protecting marine ecosystems and biodiversity often faced challenges related to governance and capacity.

#### **The scientific data and latest reports in terms of SDG 14 : Studies and Assessments [4]**

1. **Unsustainable fishing practices including overfishing** have led to the exhaustion of many fish stocks, threatening the means of living of coastal communities and marine biodiversity.
2. **Marine Pollution:** Human activities like agricultural, industrial, and urban drain pollution, have resulted in
3. contamination of coastal waters with plastics, chemicals, heavy metals causing adverse effects like killing of one million marine animals per year.
4. **Ocean Acidification:** The carbon dioxide (CO<sub>2</sub>) into the atmosphere, released from burning of fossil fuels, is absorbed by the oceans, resulting in ocean acidification. This negatively affects marine organisms.
5. **Habitat Destruction:** Dredging, land reclamation and coastal development cause destruction of critical coastal habitats like mangroves, seagrasses, and coral reefs, reducing the resilience of coastal ecosystems.
6. **Climate Change:** Rising sea levels and sea temperatures, because of climate change, are causing coral bleaching events, altered migration patterns, impacts on marine species distribution and alike disruptions in marine ecosystems.
7. **Marine Biodiversity Loss:** Human activities causing declines in marine biodiversity, including the loss of phenomenal species like sea turtles and whales and other lesser-known but important species.
8. **Plastic Pollution:** The proliferation of single-use plastics has resulted in widespread plastic pollution in the oceans, endangering marine life through ingestion and entanglement. Endangered aquatic animals that eat and get caught in plastic debris are more than 5.25 trillion macro and micro pieces of plastic in the oceans which is equal to 46,000 pieces per every square mile of ocean. That means Every day approximately eight million new pieces of plastic are dumped into the oceans. [2]
9. **Illegal, Unreported, and Unregulated (IUU) Fishing** activities frustrate efforts to sustainably manage fish stocks and marine resources
10. **Eutrophication** is the result of excessive drainage of nutrient from agriculture and wastewater discharge, causing accumulation of harmful algae and "dead zones" with depleted oxygen levels.
11. **Loss of Ecosystem Services:** These human-induced changes in marine ecosystems hamper the provisions such as food security, climate regulation, and coastal protection.

#### **The Key Aspects of SDG 14's Objectives, Crucial to Achieve the Targets Set Out in Agenda 2030:**

1. **SDG 14 has ten specific targets** that aim at various aspects of marine conservation and sustainable use. India aims to address various challenges and opportunities related to marine ecosystems across its extensive coastline .
2. **Marine Ecosystem Conservation:** To protect and restore marine and coastal ecosystems by

preventing and significantly reducing marine pollution of all kinds.

3. To establish the practice of **Sustainable Fishing** to end unreported, and unregulated (IUU) fishing, overfishing and effectively regulate harvesting to maintain fish populations.
4. Promote **Sustainable Fisheries Management** to ensure the long-term viability of fish stocks and supporting the livelihoods of coastal communities dependent by implementing science based regulations and practices like spearfishing.
5. **To control and Reduce Marine Pollution** particularly from land-based activities including marine debris, nutrients pollution and plastic waste through policies, awareness campaigns, and clean-up activities along the country's extensive coastline through initiatives like the "**Clean India**" campaign and regulations to curb the use of single-use plastics.
6. Owing to the factor of vulnerability of coastal regions to sea-level rise and extreme weather events, focusing on **Climate Change Adaptation Measures** to protect coastal communities and infrastructures, addressing climate change impacts on marine ecosystems by participating in international agreements like the **Paris Agreement** and taking steps to reduce **greenhouse gas emissions**.
7. By Investing in **Marine Research and Technology** monitor and manage marine resources adequately including efforts to combat illegal, unreported, and unregulated (IUU) fishing.
8. Application of the **Concept of Blue Economy** Aiming to harness the economic potential of marine and coastal resources while ensuring sustainability and equity, promote sustainable economic activities related to the ocean, such as **aquaculture, tourism, and renewable energy generation**.
9. To participate in regional and international efforts regarding **International Cooperation** to address issues like transboundary pollution, Trans-boundary marine issues, biodiversity conservation, sustainable fisheries management in the Indian Ocean region
10. Promoting **Sustainable Fisheries Management** to prevent overfishing and protect fish stocks, ensuring the livelihoods of coastal communities, through science-based management plans maintain or restore fish stocks to sustainable levels.
11. To Prohibit certain forms of **Fisheries Subsidies** that contribute to overcapacity and overfishing
12. To Increase the economic benefits to **Small Scale Fishing** like Small Island Developing States (SIDS) and Least Developed Countries (LDCs) from the sustainable use of marine resources.
13. **Transfer of Marine Technology** to developing countries to enhance the conservation and sustainable use of oceans.
14. To combat the adverse impacts of **Ocean Acidification** by taking appropriate actions.
15. **Marine Conservation Financing**: Getting financial support and cooperation from international partners to fund relevant projects and initiatives and utilize it to the fullest.

#### **India's initiatives & efforts toward achieving SDG 14 (Life Below Water) : Focus on the Conservation of Marine Ecosystems and Coastal Preservation [5]**

- **National Mission for Clean Ganga (Namami Gange)** aims to clean and rejuvenate the Ganga River and its tributaries, which play a vital role in the health of coastal and marine ecosystems by reducing pollution and promoting sustainable water management.
- **Swachh Bharat Abhiyan (Clean India Campaign)**: This nationwide campaign includes efforts to reduce

coastal and marine pollution by improving waste management and sanitation infrastructure along coastal areas.

- **Coastal Regulation Zone (CRZ) Notification:** India has implemented regulations under the CRZ Notification to manage and protect coastal areas, restrict certain activities, and promote sustainable development along the coast
- **National Plan for Conservation of Aquatic Ecosystems (NPCA):** This plan focuses on the conservation and restoration of critical aquatic ecosystems, including wetlands and coastal areas, to support biodiversity and ecological health.
- **Integrated Coastal Zone Management (ICZM):** India has been working on ICZM plans to ensure the sustainable development of coastal areas by balancing economic and ecological concerns.
- **Mangrove Conservation:** India has made efforts to conserve mangrove ecosystems along its coasts, recognizing their significance in mitigating coastal erosion and acting as nurseries for marine life
- **Marine Protected Areas (MPAs):** India has established several MPAs to conserve marine biodiversity and protect critical habitats. Examples include the Gulf of Mannar Marine National Park and Marine Biosphere Reserves.
- **Coral Reef Conservation:** India has initiated projects to conserve coral reefs in the Andaman and Nicobar Islands and the Gulf of Mannar, which are crucial for marine biodiversity
- **Research and Monitoring:** India invests in marine research, monitoring, and assessment programs to understand and address the challenges facing coastal and marine ecosystems
- **Sustainable Fisheries Management:** India is working to promote sustainable fishing practices, including the introduction of new technologies, capacity building, and regulation of fishing activities to prevent overfishing
- **International Collaboration:** India collaborates with neighbouring countries and participates in regional fisheries management organizations to promote cooperative management of shared marine resources.

### Legislative Framework & Policies of India in context of SDG 14: Life Below Water and its Sustainable Development 6

1. **Marine Pollution Control Laws** such as the Water (Prevention and Control of Pollution) Act, 1974, and the Coastal Regulation Zone (CRZ) Notification, 2019. These regulations help control pollution along the coastal areas and protect marine ecosystems.
2. **Biodiversity Conservation** through The Wildlife Protection Act, 1972, aims to conserve and protect marine biodiversity, including endangered species.
3. The Indian Fisheries Act, 1897 and the National Marine Fisheries Policy, 2017 control the **Conservation and Management of Marine Resources**, promoting sustainable fishing practices.
4. India is a signatory to **International agreements** like the **United Nations Convention on the Law of the Sea (UNCLOS)** and the **Convention on Biological Diversity (CBD)**, which guide sustainable marine resource management.
5. The framework of **Marine Spatial Planning** is being developed to ensure the sustainable use of marine resources while balancing economic and ecological concerns.
6. Various **research institutions and organizations work to study and conserve** marine life. The

National Institute of Oceanography (NIO) is an example.

7. Coastal states in India have their **Coastal Zone Management Plans**, aligned with the CRZ Notification, to regulate development along the coast while preserving coastal ecosystems
8. India promotes **Renewable Clean Energy Sources** like offshore wind energy to reduce reliance on fossil fuels and mitigate their impact on marine ecosystems.
9. **Participations** include Community-based initiatives, such as community-managed marine conservation areas, involve local communities in the sustainable management of coastal and marine resources
10. **Public awareness campaigns and environmental education programs** help educate people about the importance of marine conservation and sustainable practices.

#### **Treaties Agreements and Pacts related to SDG 14: [7]**

- **United Nations Convention on the Law of the Sea (UNCLOS):** UNCLOS, adopted in 1982, is the primary international treaty governing the use and conservation of the world's oceans and marine resources. It establishes rules for territorial waters, exclusive economic zones (EEZs), and the protection of the marine environment.
- **Convention on Biological Diversity (CBD):** Adopted in 1992, CBD includes provisions for the conservation and sustainable use of marine biodiversity. The Nagoya Protocol, a supplementary agreement to the CBD, addresses access to genetic resources and the fair and equitable sharing of benefits arising from their utilization, including in marine areas.
- **Fish Stocks and Highly Migratory Fish Stocks (UN Fish Stocks Agreement):** This treaty, adopted in 1995, focuses on the sustainable management of fish stocks in the high seas and straddling areas.
- **Port State Measures Agreement (PSMA):** adopted in 2009, aims to prevent, deter, and eliminate illegal, unreported, and unregulated (IUU) fishing by strengthening port controls on foreign vessels
- **Agreement on the Conservation of Albatrosses and Petrels (ACAP):** ACAP, adopted in 2001, focuses on the conservation of albatrosses and petrels, which are particularly vulnerable to bycatch in fisheries.
- **MARPOL (International Convention for the Prevention of Pollution from Ships):** MARPOL, adopted in 1973 and subsequent protocols, addresses various forms of marine pollution from ships, including oil pollution, sewage, and garbage.
- **International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC):** OPRC, adopted in 1990 and amended in 2000, aims to improve international co-operation and preparedness for responding to oil spills. Global Partnership for Marine Litter: An initiative that brings together governments, industry, NGOs, and academia to combat marine litter and plastic pollution
- **Regional Fisheries Management Organizations (RFMOs):** Various RFMOs, such as the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the Western and Central Pacific Fisheries Commission (WCPFC), work to manage and conserve fish stocks in specific regions.

### India's PROGRESS towards SDG 14 in 2023 : Key Treaties and Conventions Signed by India in this Context: [8]

- **United Nations Convention on the Law of the Sea (UNCLOS)** : provides the legal framework for the conservation and sustainable use of the oceans and their resources.
- **Convention on Biological Diversity (CBD)**: Includes provisions for the conservation and sustainable use of marine biodiversity and ecosystems.
- **Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing**: being a partner to this agreement, India aims to combat IUU fishing by strengthening port controls.
- **Convention on Wetlands**: India has recognized several wetlands, including coastal wetlands, as Ramsar Sites, aiming their conservation and sustainable use.
- **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal**: addresses the hazardous waste management, waste generated from maritime activities impact adversely.
- **Convention on the Conservation of Migratory Species of Wild Animals (CMS)**: includes marine species like marine turtles and cetaceans among its protected species, which India is a part of.
- **International Convention for the Control and Management of Ships' Ballast Water and Sediments**: India has signed this convention, to prevent the spread of harmful aquatic organisms through ballast water.
- **International Convention for the Prevention of Pollution from Ships (MARPOL)**: India is a participant to MARPOL, which addresses different types of marine pollution caused by ships, including oil pollution.
- **Regional Fisheries Management Organizations (RFMOs)**: India participates in various RFMOs, such as the Indian Ocean Tuna Commission (IOTC) and the South Indian Ocean Fisheries Organization (SIOFA), to promote sustainable fisheries management.
- **Bilateral Agreements**: India also enters into bilateral agreements with neighbouring countries, international treaties and conventions on relevant matters.

### As a coastal nation with a vast maritime area, India's efforts and commitments to implement SDG 14 (Life Below Water) under the United Nations Sustainable Development Agenda 2030 are: [9]

1. Establishment of sanctuaries such as Marine National Park, Gulf of Mannar, the Great Nicobar Biosphere Reserve and some Marine Protected Areas towards **Marine Conservation and Biodiversity**.
2. Efforts towards **Sustainable Fisheries Management** to prevent overfishing. Blue Revolution initiative which aims to increase fish production via responsible aquaculture practices.
3. **To Control Marine Pollution**, mainly from industrial and coastal activities initiatives like The Swachh Bharat Abhiyan ; Clean India Campaign extend to India's coastal areas to address fouling of beaches and marine habitats.
4. India engages in **International Cooperation, Agreements and Partnership** to address cross-border marine issues as part of the Indian Ocean Rim Association (IORA) and has collaborated on initiatives to promote maritime security as well as to combat piracy.

5. India invests in **Marine Research and Conservation** efforts through the National Institute of Oceanography and other institutions in the fields of marine ecosystems, climate change impacts, and sustainable fisheries.
6. For **Plastic Waste Management** in its coastal areas initiatives like the Single-Use Plastic Ban and campaigns like "Beat Plastic Pollution" is being taken to reduce plastic waste entering marine environments.
7. India is taking measures to adapt to rising sea levels and extreme weather events keeping in mind the **Impact of Climate Change** on coastal areas for Climate Adaptation

## Conclusion

While India has taken significant steps towards achieving SDG 14, challenges such as, marine pollution, illegal fishing, habitat degradation, persist. The scientific consensus emphasizes the urgency of addressing these issues to achieve SDG 14, It calls for efforts to mitigate the negative impacts of human activities and implement effective policies and practices that protect life below water and ensure the long-term health of marine ecosystems. SDG 14 recognizes the critical role that oceans and marine ecosystems play in supporting life on Earth and emphasizes the need to ensure their long-term health and productivity. These international agreements and initiatives play a crucial role in addressing the challenges of marine conservation, sustainable fisheries management, and the protection of marine ecosystems, all of which are essential components of SDG 14. The legislative and policy frameworks, combined with India faces ongoing challenges, including population pressures on coastal areas, habitat degradation, and pollution. Efforts to achieve sustainable development in the marine ecosystem are critical not only for environmental preservation but also for the livelihoods of millions of people who depend on healthy oceans for food, jobs, and cultural heritage. It requires research efforts, legislative and policy frameworks, continued commitments, international cooperation and collaborations, policy initiatives, integration of sustainable practices and community engagement to achieve the objectives to have a harmonious balance between human needs and the well-being of our oceans.

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