



The Global Environment Monitoring System for the Ocean and Coasts

Strategy Brochure





© The Ocean Agency / Ocean Image Bank

Island in Makassar, Indonesia

Why do we need a GEMS Ocean Strategy

This document outlines a strategy to guide the operations and workplan development of the newly established Global Environment Monitoring System for the Ocean and Coasts (GEMS Ocean) Programme. The strategy provides direction and sets priorities for the GEMS Ocean Programme. It is considered a living document whose practical implementation depends on active engagement, adequate financial support, and communication, as reflected in regular updates of operational work plans for annual approval. The co-design process to establish a meaningful and fit-for-purpose GEMS Ocean Programme, as the newest monitoring system in the UN Environment Programme's Science Division, which acts as the convener of the Programme, officially began in 2021. This collaborative process is both necessary and timely, as scientific, credible, and open data are urgently needed to assess the impacts of climate change, pollution, and extreme events and to sustainably manage the ocean's valuable resources and ecosystems.

DEAD ZONES
ARE RISING AT AN ALARMING RATE,
FROM 400 IN 2008 TO 700 IN 2019

"DEAD ZONES" ARE AREAS OF WATER THAT LACK SUFFICIENT OXYGEN TO SUPPORT MARINE LIFE

Source: Sustainable Development Goals Report 2021

ON AVERAGE, ONLY 1.2%
OF NATIONAL RESEARCH BUDGETS ARE
ALLOCATED FOR OCEAN SCIENCE

Source: Sustainable Development Goals Report 2021

Source: Sustainable Development Goals Report 2021



Bunaken National Marine Park, Sulawesi, Indonesia

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Background

Embedded in its Medium-Term Strategy (MTS) for the period 2022-2025, the United Nations Environment Programme (UNEP) recognizes three interlinked planetary crises for urgent understanding, prioritization, and action: climate change, biodiversity loss, and pollution, all of which have undeniable direct and detrimental impacts on our ocean and coasts. Direct human activities, climate pressures, and pollution from land, air, and water sources harm marine life and affect our ocean and coasts, undermine the well-being of coastal communities, and negatively impact human and ecosystem health. This has far-reaching consequences, especially for the approximately 40 percent of the world's population living within 100 kilometres of the coastline.

By adopting the dedicated Sustainable Development Goal on the ocean and its resources (SDG 14 "Life below water") in the 2030 Agenda for Sustainable Development, countries worldwide acknowledge the central role of marine and coastal resources in achieving prosperity and human and ecosystem health.



Source: Sustainable Development Goals Report 2021

Further, it is recognized that observing and monitoring systems are essential to better understand the impacts of society and human activities on marine ecosystems and the services they provide. Supplying decision makers and society at large with accurate, comprehensive, and robust environmental information is critical to raise awareness and enable them to take effective action and evaluate the benefits of their interventions over time.

Yet, the vast majority of the ocean remains unmapped, unobserved, and unexplored. Our understanding of the ocean and its contribution to sustainability largely depends on our capacity to conduct effective ocean research and sustained observations, supported by adequate infrastructure and investment. The aim of the GEMS Ocean Programme focuses on providing the world community with relevant data, information, and capacity to find innovative ocean and coastal management solutions that can accelerate action on the ground and ultimately be scaled up regionally and globally.



Automatic oceanographic maritime platform in the gulf of Trieste

GEMS Ocean and its Role at the Science-Policy Interface

On a positive note, the ocean monitoring and marine data landscape is already densely populated in some parts of the world with various monitoring and observing systems that set and define standards, collect data, and provide useful information on the state of the marine environment.

The flip side is that there are still many gaps that need to be filled especially in Small Island Developing States (SIDS) and Developing Countries and there is a general lack of capacity and integration that would facilitate more effective decision making at multiple scales. This discrepancy cannot be ignored, and GEMS Ocean sees its niche precisely in bridging this gap by operating, as per UNEP's mandate, at the interface between science and policy¹. Building on the information and analysis of existing monitoring efforts at national, regional, and global levels, including Multilateral Environmental Agreements (MEAs) and Sustainable Development Goals (SDGs) and working closely with other United Nations agencies and programmes as well as the Earth Observation, monitoring, and modelling community, GEMS Ocean aims at convening a multi-stakeholder partnership that delivers on UNEP's normative mandate and that will enable upscaling of innovative marine and coastal management solutions through tested regional Use Cases. Use Cases will be subject to a bottom-up prioritization, for example together with the Regional Seas, Large Marine Ecosystems (LMEs) and individual countries, and will follow user demands and needs.

Through this partnership approach, GEMS Ocean strives to address challenges such as coastal erosion, sea level rise, marine pollution, habitat degradation and overfishing, to name a few, in a more coherent and impactful way leading to improved conservation, management and sustainable use of ocean and coastal resources. Special emphasis will be given to the land-sea interface and the Source to Sea (S2S) system, which refer to the biophysical continuum between land and sea environments, connected through riverine systems and that influence continental shelves as well as the open ocean.

¹ More information about the framing and mandate of the GEMS Ocean Programme can be found here: <https://www.unep.org/explore-topics/oceans-seas/what-we-do/ocean-and-coastal-observations>.



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Mangroves, Australia

Acknowledgement

We are grateful for the constructive feedback and written comments provided by many of our partners that contributed to developing this strategy. Particular thanks to GEMS Ocean’s current core partnership, which includes the following: the Intergovernmental Oceanographic Commission of UNESCO (IOC), the Global Ocean Observing System (GOOS), UNEP’s Global Resource Information Database (GRID) centres of Geneva and Arendal, Future Earth, UNEP World Conservation Monitoring Centre (WCMC), UNEP’s Ecosystems Division and Regional Seas Programme, G7 Future of the Seas and Oceans Initiative (FSOI), World Resources Institute (WRI) and Mercator Ocean International (MOi).

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

G7 FUTURE OF THE SEAS & OCEANS INITIATIVE

MERCATOR OCEAN INTERNATIONAL

UN environment programme WCMC UN environment programme GRID Geneva GRID ARENDAL A UNEP Partner

GOOS The Global Ocean Observing System

futureearth Research. Innovation. Sustainability

WORLD RESOURCES INSTITUTE

Regional Seas



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Bunaken National Marine Park, Sulawesi, Indonesia

Vision



A global environment monitoring system that provides relevant open and easily accessible ocean and coastal data, analysis, and information, guiding actions to protect and sustainably use marine and coastal resources.

Mission



Co-design and convene a global Community of Practice across experts and society at large to provide capacity, analysis, innovation and synthesized information to decision and policy makers, civil society, international organisations as well as coastal communities worldwide in a holistic approach to keep the global ocean and coasts healthy and productive.

14 LIFE
BELOW WATER



CONSERVE AND SUSTAINABLY USE THE OCEANS, SEA AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

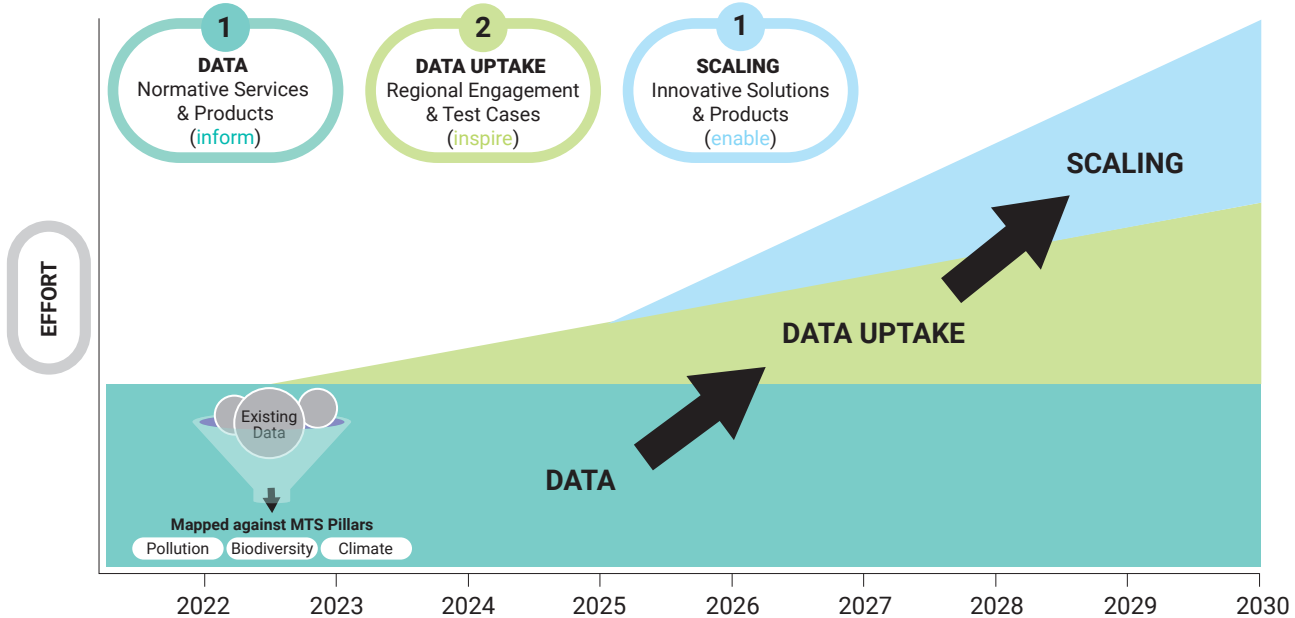


Credit: Getty Images/Ocean Image Bank

Maldives

Delivery model of the GEMS Ocean Programme

GEMS Ocean over time in the 2030 Agenda framework strives to bring global monitoring and regular assessment to a rolling format, while increasingly shifting the focus to on-the-ground engagement in the regions and subsequent scaling up of successful and innovative solutions. This approach can be summarized in what we currently refer to as the GEMS Ocean “Delivery Model”. Following the motto “inform, inspire and enable”, it aims to illustrate how we want to move from data to more action on the ground.



- The lower part on “Data” exemplifies that GEMS Ocean will filter the data already available on marine and coastal resources according to the three pillars of UNEP’s Medium-Term Strategy (MTS) 2022-2025 – biodiversity, climate and pollution - and make them easily accessible to facilitate data uptake. In doing so, the brands of the data and knowledge asset holders² will be made clearly visible at all times. Thus, one function of GEMS Ocean is to gather existing information from the data and knowledge asset holders, take stock of it, synthesize it, and make it available to member states and the public.
- The middle part refers to “Data Uptake”. Here, GEMS Ocean will focus on the needs in the regions and explore how it can best facilitate the use of marine and coastal data on the ground through a bottom-up approach. Key will be to work with a wide range of partners to identify needs, build capacity where required, and find (innovative) solutions to specific problems.
- In the upper part on “Scaling”, GEMS Ocean will play the role of a catalyst, highlighting what has worked successfully in the regions and advocating for further investment.

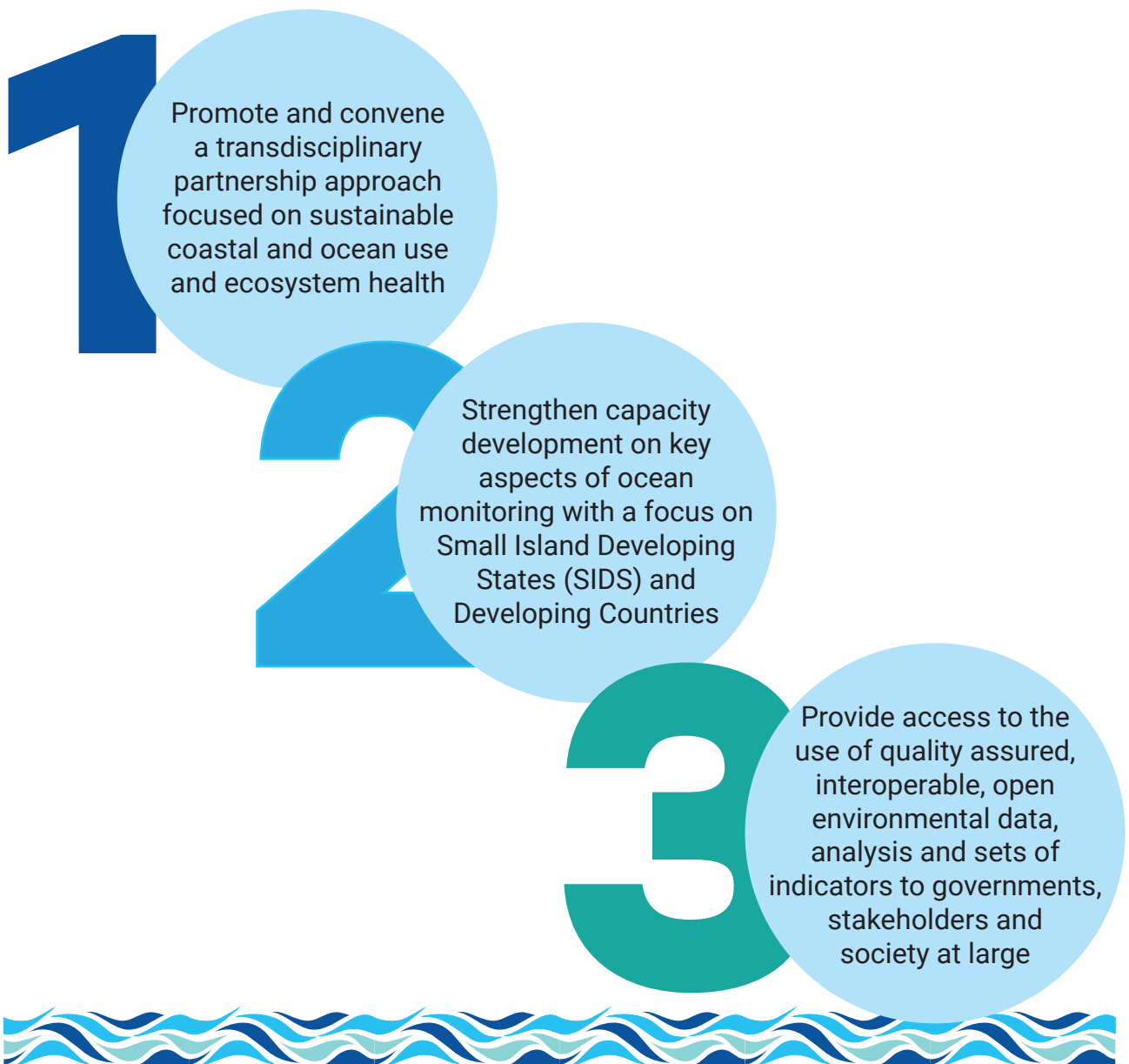
² The term “data and knowledge asset holders” refers to organizations and stakeholders that own, collect and manage data.



Barracuda fish

Focus

GEMS Ocean focusses on the three following strategic actions:





Island in Makassar, Indonesia

Membership and Governance Mechanism

GEMS Ocean Partnership

Membership is voluntary, but should be based on a common understanding of values. It is built on thematic expertise, motivation and commitment and is based on the Expressions of Interest (EoI) submitted by the parties. The level of engagement of each partner can vary, ranging from active participation to a more observational role. Members are strongly encouraged to contribute their specific expertise and networks, drawing on their existing or planned work programmes/flows and supporting with available relevant data and other capacities as appropriate. The partnership concept acknowledges ownership and visibility of data and knowledge asset holders across the board.

GEMS Ocean Operational Mechanism

Practical, operational, and methodological aspects of the GEMS Ocean Programme will be addressed by specific Thematic Working Groups (TWGs). The TWGs will be formed by small group of experts whose purpose is to find practical solutions to specific needs or issues. Participation in the TWGs is voluntary and based on the expertise, workflows, and interest of the partners. Currently, the following TWGs are planned: Capacity Development, Data and Services, Emerging Issues and Foresight, Engagement and Communication Outreach, Policy Support, Ocean Observations. In addition, there are plans to establish a “feedback loop” mechanism coordinated by GEMS Ocean to facilitate the ongoing identification and prioritization of needs on both the scientific and policy sides.



Coral reef, French Polynesia

GEMS Ocean Strategy, Coordination and Management

Overall, the strategic guidance, including review and approval of work plans, advice on resource mobilisation, agreement on data standards and relevant partner activities of the GEMS Ocean Programme will be provided by a steering mechanism, e.g., a Strategic Advisory Committee (SAC), which may be complemented by a Management Board focused on programme implementation. Membership in a SAC or a Management Board would be based on an agreed selection process decided by the members of the GEMS Ocean Programme. Responsible for the overall coordination of the GEMS Ocean Programme is the Global Programme Coordination Unit (GPCU), based in the UNEP Headquarters in Nairobi, Kenya.

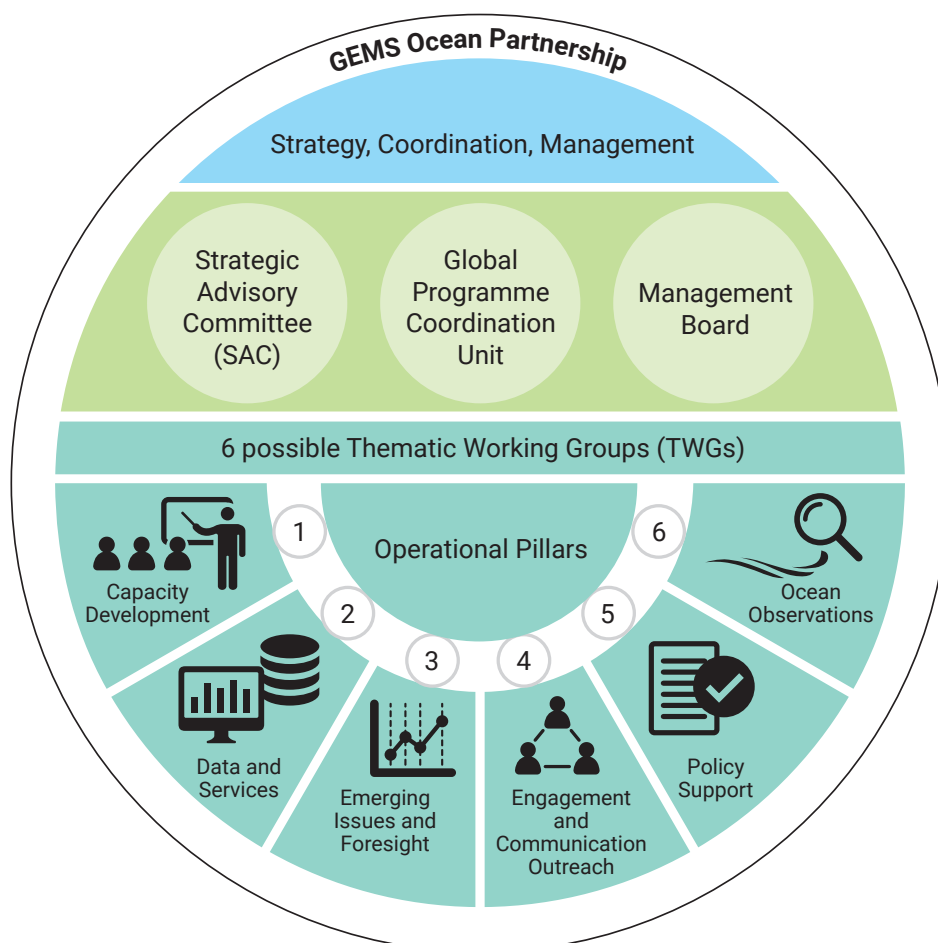


Illustration of potential structure of the GEMS Ocean Programme, including a proposed governance mechanism



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Palm trees and the sea, Maldives

Theory of Change

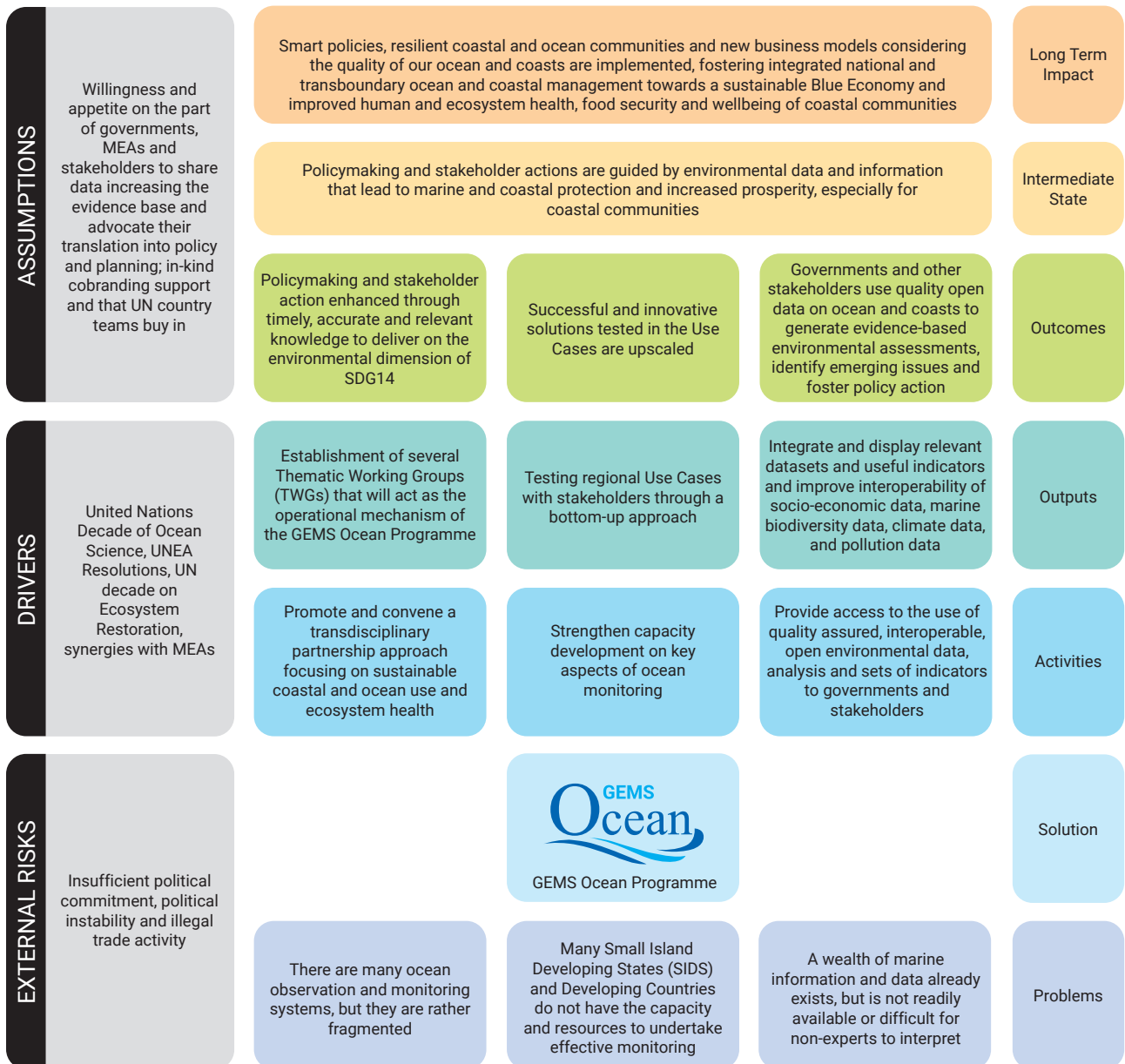




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Back cover: Ocean Image Bank



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