



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

Monitoring and Evaluation Framework Implementation Manual

Version 2.0

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Acronyms

DAB	Decade Advisory Board
DCC	Decade Collaborative Centre
DCO	Decade Coordination Office
DCU	Decade Coordination Unit
DIP	Decade Implementing Partner
EOV	Essential Ocean Variable
GOOS	Global Ocean Observing System
IOC	Intergovernmental Oceanographic Commission of UNESCO
IWG	Informal Working Group
M&E	Monitoring and Evaluation
NGOs	Non-Governmental Organizations
SDGs	Sustainable Development Goals
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNGA	United Nations General Assembly

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PART I: OVERVIEW OF THE MONITORING & EVALUATION FRAMEWORK

1. Introduction & Context

This manual provides guidance for the implementation of the Monitoring and Evaluation (M&E) Framework of the United Nations Decade of Ocean Science for Sustainable Development 2021-2030 (hereafter 'the Ocean Decade'). The M&E Framework for the Ocean Decade has been developed by a group of experts through an Informal Working Group (IWG) from a variety of institutions and fields and was discussed with the Interim Decade Advisory Board in April 2021.¹

There is clear recognition and understanding of the reliance of humankind on the vital life-supporting services provided by the ocean. It is a source of food, energy, wealth, biodiversity, climate solutions, aesthetic, cultural and recreational services that are essential for our wellbeing, among other many valuable services. Its contribution is expected to grow exponentially if well managed, but its complexity and important knowledge gaps limit our capacity to make the most out of its potential. The only path forward is through collective transformative solutions to the existing and future challenges that face the ocean and thus humankind. These solutions shall be varied in form and scale to best respond to not only global policy frameworks and aspirations, but also regional, national, and local contexts.

However, our collective ability to generate and implement such solutions is hampered by critical gaps in ocean science and knowledge. In this context, the Ocean Decade is an internationally coordinated effort to promote transformational, largescale change in the way ocean science is generated and used to advance urgent action on moving from the 'ocean we have' to the 'ocean we want', in alignment with the Sustainable Development Goals (SDGs); importantly with SDG 14 - Life Under Water. It was proclaimed by the 72nd Session of UN General Assembly (UNGA) on the 5th of December 2017, and its implementation is being led by the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

An [Implementation Plan](#) was developed by IOC-UNESCO in collaboration with representatives from Member States, United Nations agencies, philanthropy, industry and the scientific community over a three year period from 2018 to 2020. The Implementation Plan outlines key implementation and operational arrangements, institutions involved and their roles. The plan serves as the overarching guidance document for the Decade, including for its M&E. Implementation will be supported by contributions from Member States, specialized agencies, funds, programmes, and bodies of the United Nations, as well as other intergovernmental organizations, non-governmental organizations (NGOs) and relevant stakeholders.

The vision of the Ocean Decade is the science we need for the ocean we want. The Ocean Decade envisages a transformative shift from the 'ocean we have' to the 'ocean we want' by 2030 through generation and uptake of relevant, solutions-oriented ocean science that fulfils critical gaps in ocean knowledge for sustainable development (Figure 1).

¹ For more details on the Informal Working Group and the process for designing the M&E Framework please refer to Annex 1 of this manual.

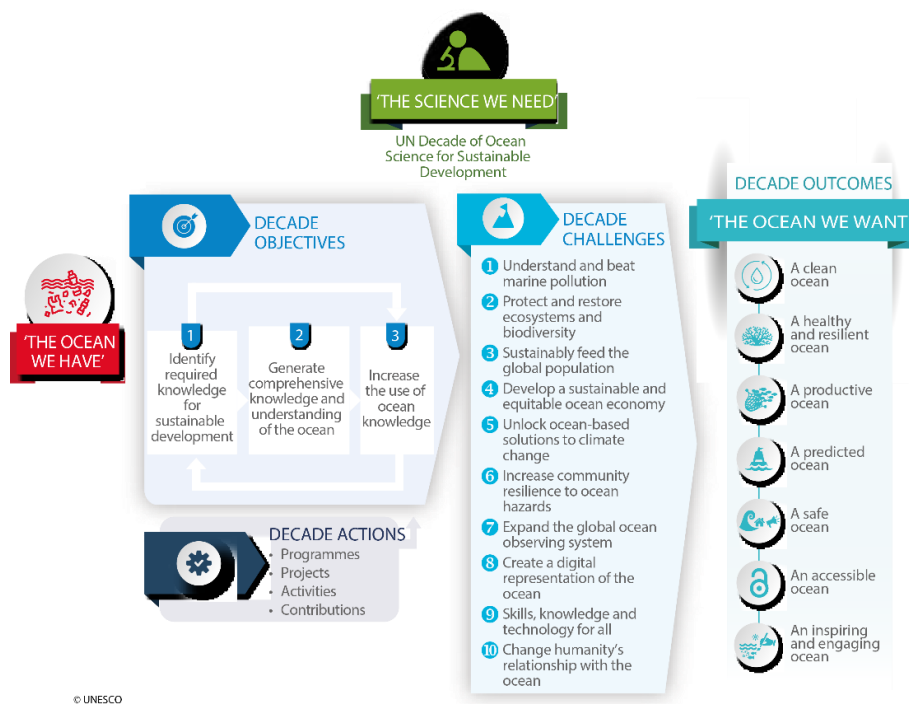


Figure 1: Moving from the ‘ocean we have’ to the ‘ocean we want’

The Decade Action Framework is structured around ten **Ocean Decade Challenges**, which set out the immediate priorities of the Decade. Challenges are categorised as ‘Knowledge and Solutions Challenges’ (i.e., Challenges 1 – 5), ‘Infrastructure Challenges’ (i.e., Challenges 6 – 8) and ‘Cross-Cutting Challenges’ (i.e., Challenges 9 and 10). The Action Framework is furthermore structured around three **Decade Objectives** (including 17 sub-objectives) that describe the steps in the science value-chain that are needed to meet the Challenges. Collective progress via Decade Actions towards fulfilment of the Ocean Decade Challenges will lead to significant contributions to the seven **Decade Outcomes**, which describe the characteristics of the “ocean we want” at the end of the Decade. Decade Actions will be co-designed and co-delivered by diverse groups of actors including generators and users of ocean science. Decade Actions are solicited by biannual Calls for Decade Actions and are categorised as (i) “Decade Programmes”, long-term regional or global actions towards one or more challenges, (ii) “Decade Projects”, discrete and focused undertaking at regional, national or subnational scales, that typically contributes to a Decade Programme, (iii) “Decade Contributions” that are in-kind or financial resources for the implementation of Decade Actions or implementation and coordination costs, and (iii) “Decade Activities”, standalone initiatives that contribute to a Project or Programme.

The Decade Advisory Board (DAB) provides strategic advice to the implementation of the Decade, while the day-to-day central coordination is carried out by the Decade Coordination Unit (DCU) within IOC-UNESCO Decentralised structures including Decade Coordination Offices (DCOs), Decade Collaborative Centres, and Decade Implementing Partners will support the Decade Coordination Unit at regional and national scales. Decade Actions (Programmes, Projects, and Activities) will be self-administered, while coordinated through the DCU and DCOs/ DCCs. Regional taskforces and National Decade Committees are voluntary structures that work to translate global priorities to the regional and national scale.

2. Why monitor the progress of the Ocean Decade?

The Ocean Decade M&E framework will be an essential tool to generate information needed to tell the story of transformative change in the undertaking, disseminating, and using of ocean science throughout the Ocean Decade. It will build the foundation for the narrative of the Decade by showing

the changes in ocean science-related initiatives globally and mobilize action to further accelerate Decade Actions and engage new partners. Additionally, the M&E Framework will be used for evaluating the progress of the Decade, which will make it possible to identify the adaptive strategies needed to improve implementation and identify gaps where Decade Actions should be concentrated.

Overall, the M&E efforts throughout the Decade will:

- **Provide stakeholders with information** on the benefits generated by the Ocean Decade and thus build collective momentum, and inspire action and engagement;
- **Underpin adaptive management of the Ocean Decade** by measuring performance against the agreed outputs;
- **Attribute the contribution of the Ocean Decade** in progress made towards achieving the agreed outcomes;
- **Focus on the benefits and costs** created through the increased uptake and use of science **against the identified Ocean Decade Challenges**;
- **Recognise that measuring ocean science** success needs to move **beyond peer-reviewed publications** as the primary measure of performance;
- Collect and analyse global, regional and country response indicators against agreed actions or processes which will be essential to **ensure accountability and transparency in monitoring the progress and identifying gaps**;
- Enable and inform stakeholders on where there may be **implementation gaps or particular challenges** that can be addressed during the Ocean Decade;

The M&E Framework will be used to report on the progress of the Decade through predefined reporting outputs and mechanisms (Figure 2). Specifically, implementation of the framework contained in this manual M&E will guide the coordination of the Ocean Decade by contributing to identifying gaps and priorities for each round of Calls for Decade Actions (i.e., for Programmes and Projects) and resource mobilization efforts. Information will also inform related strategic documents for the Decade including the Communications Strategy and the Resource Mobilisation Strategy and will inform the priorities of Decade informal working groups on data, private sector and philanthropic engagement, technology and innovation, and indigenous and local knowledge. The outcomes will be reported back to the Decade Actions so that they can understand their progress as part of the broader Ocean Decade efforts and adapt to emerging issues and contexts at their level. This will be achieved by informing the Review and Update processes for the Decade Action Framework that will be led by the DCU in 2023, 2025, 2027, and 2029.

Information will be collected annually and will be reported publicly through the review publications planned as part of the Implementation Plan, namely: the Annual Progress Report, the Resource Needs Assessment, the Mid-term Review, the 'State of the Art Decade' Triennial Reports.

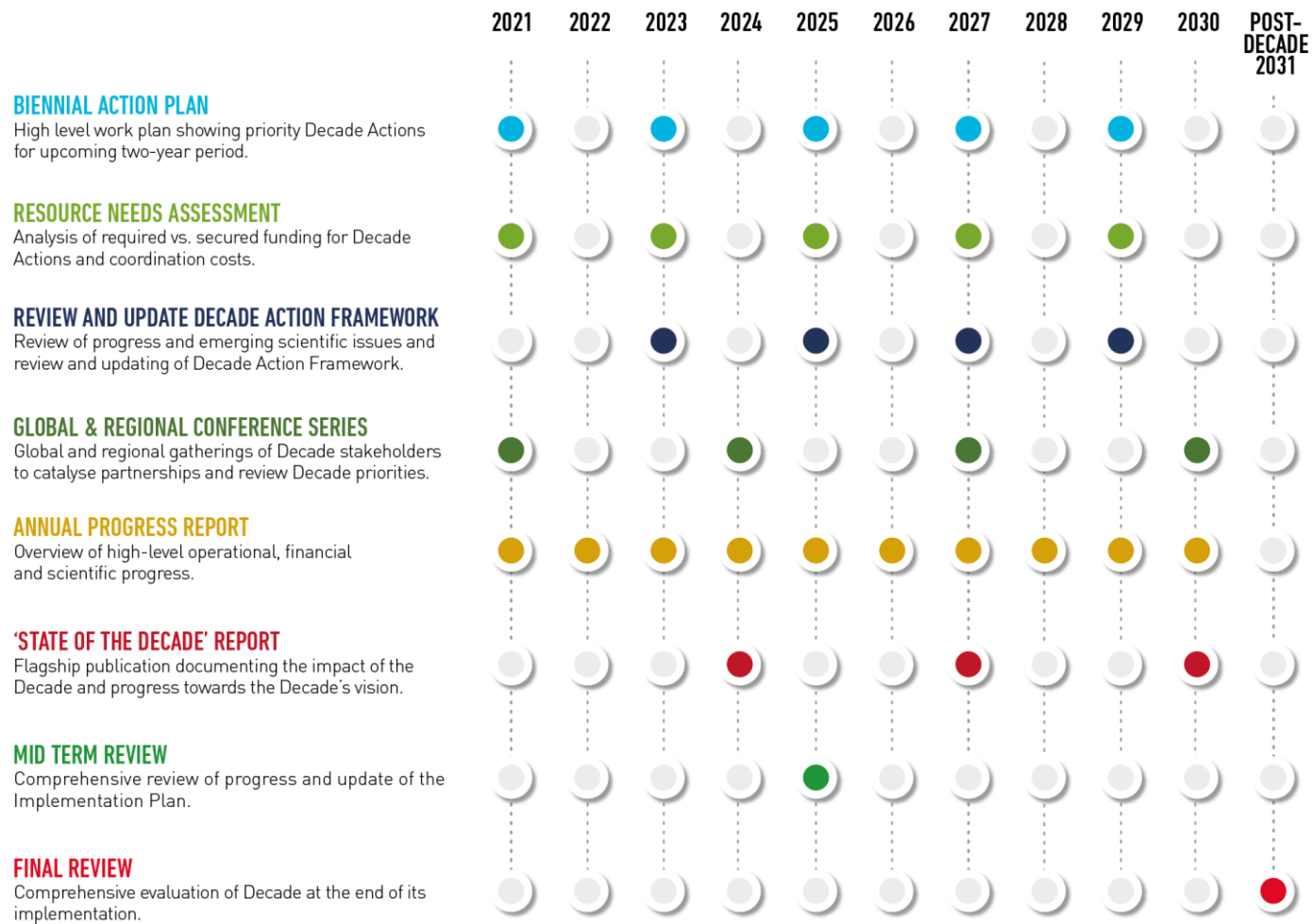


Figure 2: Review Milestones and Processes

3. Description of Monitoring and Evaluation Framework

3.1 Design Principles of the Monitoring and Evaluation Framework

The M&E Framework of the Ocean Decade builds on the Decade's Implementation Plan and Strategies, as well as relevant existing M&E efforts globally. The **design principles** which were identified by the M&E Informal Working Group to underpin the development of the M&E Framework are as follows:

- **Simple:** it is practical and achievable and does not place undue pressure or resource demands on stakeholders that are responsible for collecting and reporting on data.
- **Adaptable:** it is iterative and evolves over the course of the Ocean Decade.
- **Optimised:** it uses pre-existing methodologies as a starting point, building on systems and knowledge already in place and avoiding duplication.
- **Standardised:** it develops indicators comparable between marine sectors, countries, regions, basins, time, and other scientific disciplines to facilitate science-society linkages.
- **Impact-driven:** it uses indicators allowing stakeholders to identify the contribution of the Ocean Decade to ocean science and broader impacts.
- **Inclusive:** it incorporates the use of indigenous and local knowledge systems to inform the development of indicators as well as allowing all knowledge systems to be captured within the indicator data and tracks progress of the Decade in relation to generational, gender and geographical inclusivity and diversity.
- **Open:** it aligns with the wider principles of FAIR (findability, accessibility, interoperability, and reusability) data underpinning the Ocean Decade, meaning that M&E data is openly available to any stakeholders.
- **Blended:** uses a blend of quantitative indicators and qualitative, narrative-driven measurement to measure progress and includes the use of proxy indicators where more precise indicators do not yet exist for a particular issue.

3.2 Description of the Framework

The Framework (Figure 3) envisages monitoring and evaluation at several inter-related levels which align with the different elements of the Ocean Decade Action Framework.



Figure 3: Ocean Decade Monitoring and Evaluation Conceptual Framework

3.2.1 Measuring Progress at the Impact Level

Impact level evaluation focuses on tracking impact and progress in relation to Ocean Decade Outcomes and Ocean Decade Challenges.

The seven **Ocean Decade Outcomes** describe the characteristics “ocean we want” at the end of the Ocean Decade, including the desired state of the ocean and its interaction with society. Measurement of progress to fulfil the Decade Outcomes will therefore focus on the measurement of the state of the ocean and will not be directly attributable to the Decade. Each Outcome will initially revolve around a small number of headline indicators to provide a high-level overview of the Ocean Decade progress. Over time these will be complemented by regionally specific outcome indicators where necessary and available. The headline indicators will be existing indicators drawn from the UN Sustainable Development Goals (SDGs) of Agenda 2030,² and other global policy frameworks and initiatives and will be reported at the global level from available datasets. The selected indicators will evolve over time to take account of emerging global processes and frameworks. Recognizing that it is not feasible to monitor the directly attributable contribution of the Ocean Decade to such indicators, reporting at this level on the links between these indicators and the Ocean Decade will involve a mixture of quantitative and narrative driven reporting.

The **Ocean Decade Challenges** are the ten most immediate and pressing needs of the Decade. They are action-focused and are conceived as the entry points to achieve collective impact via the portfolio of Decade Actions. Measurement of progress against the Decade Challenges will therefore focus on tracking the actions and solutions that are directly attributable to the Decade and that are contributing to the desired state of the ocean characterised by the Decade Outcomes.

The Challenges include five *Knowledge and Solution Challenges* (1-5) and three *Essential Infrastructure Challenges* (6-8), and two *Foundational Challenges* (9&10) (Figure 1).

At the current time a relatively simple approach has been taken to monitoring progress against each Challenge, although evolution of this approach will be a major focus of future iterations of the M&E Framework (Box 1).

The current indicators aim to track broad trends in the volume and type of knowledge and solutions generated and adopted / used via the Decade Actions. To this end, currently *Knowledge and Solution Challenges* are monitored using indicators and quantitative evaluation linked to knowledge generation and uptake. *Essential Infrastructure Challenges* are monitored using indicators and quantitative evaluation linked to

sustainability and fit for purpose. The *Foundational Challenges* are monitored using a mix of tailored indicators that are also reported as part of the progress of the Ocean Decade enabling environment. Indicators for the Challenge level measurement of progress are designed to be fully attributable to the Ocean Decade and are thus measured at the level of Decade Actions or Decade structures.

Box 1: Measuring Progress Towards Achievement of the Ocean Decade Challenges

One of the major goals in the lead up to the Second International Ocean Decade Conference to be held in 2024 is to identify a quantifiable and specific strategic ambition for each of the Ocean Decade Challenges. In simple terms, the strategic ambition for each Ocean Decade Challenge will provide the answer to the question: “*What does success look like for this Challenge at the end of the Decade [or sooner]?*”

It is intended to implement a participatory and iterative process for each of the Challenges to identify a mix of quantitative and qualitative, measurable milestones. These milestones be tailored to each Decade Challenge and will allow progress towards a commonly agreed ‘measure of final success’ for each Challenge to be accurately measured over the course of the Decade.

Once defined, the indicators and methods to measure progress towards these milestones will be included in future iterations of the M&E Framework to complement the current set of more generic Challenge indicators.

² <https://www.un.org/sustainabledevelopment/>

3.2.2 Measuring Progress at the Operational Level

Progress at the operational level is measured using a range of quantitative indicators, which monitor progress of the implementation of the various structures, actions, and initiatives of the Decade. Information on these indicators is collected regularly by the Decade Coordination Unit, decentralised coordination structures, Decade Actions and other partners and disaggregated to ensure accurate reporting of geographic, gender and generational diversity in the implementation of the Decade.

3.2.3 Measuring Progress of the Enabling Environment

In the context of the Ocean Decade the enabling environment is defined as the conditions, structures, and resources that enable the vision and mission of the Decade to be achieved. The M&E framework focuses on monitoring of three key facets of the enabling environment namely, capacity development and behaviour change; engagement and outreach; and resource mobilisation. Progress is measured using a mixture of quantitative indicators, albeit often proxy indicators, and use of qualitative narratives of trends. Progress measured in relation to the enabling environment is intended to be directly attributable to the Decade and thus data is collected at the level of Decade Actions and Decade structures. More specifically progress of the enabling environment is measured as follows:

- *Capacity Development and Behaviour Change*: Indicators and narrative aim to measure the ocean science capacities being developed via the Decade, and the ways in which the Decade is catalysing behaviour change. They are tightly linked to the Global Ocean Science Report (GOSR) and the Decade's Ocean Literacy Framework for Action.
- *Engagement and Outreach*: The indicators for this category are drawn from the Ocean Decade Communication Strategy and with the developments of the Global Stakeholder Forum. These types of indicators are especially flexible to adapt to communications and technological trends during the Decade.
- *Resource Mobilisation*: Resource mobilisation will be monitored in terms of resources mobilised and leveraged for Decade Actions and coordination and will focus, as much as possible, on additional resources due to the Decade.

3.3 Trade-Offs and Assumptions

The Ocean Decade addresses a complex system of human, natural and physical interactions. The number of potential indicators by which the Ocean Decade's impact and operation could be measured is infinite. Therefore, the M&E Informal Working Group identified several **assumptions and trade-offs** that influenced the design of the M&E Framework and that will continue to influence its evolution:

- While numerous other relevant indicators exist, a relatively small number of indicators has been selected based on analysis of their capacity to generate the most critical information.
- The M&E Framework is only going to be as useful as its ability to be implemented, and it should be kept cost-effective and easy to implement. Ease of measurement, including resource requirements, has been a critical determinant in the selection of indicators. Much of the work in collecting primary data will sit with DCOs, DCCs, regional and national groups, and importantly, Decade Actions. All these partners have indicated their desire for the M&E obligations to be kept as light as possible.
- A strong emphasis has been placed on the use of existing indicators from existing sources. The quality of these existing indicators will rely on their sources.
- At the initial stages of development of the Manual, all indicators are compulsory. Over time, additional indicators may be added if deemed important, including newly developed indicators. These may be added as 'optional' indicators that become compulsory over time as methodologies are tested.
- Not all required indicators exist, and the M&E Framework will accommodate the research in developing these through the Ocean Decade structure for example through creation of working groups as part of the Ocean Decade Expert Roster or through targeted initiatives via Calls for Decade Actions.

- The framework may promote additional or complementary opportunities for training and developing standard protocols for certain indicators as necessary, especially to ensure robustness and comparability of information.
- Indicators that can describe a positive narrative about ocean science will promote action and should be considered even when these are lower profile indicators.
- A minimum degree of duplication of indicator data reporting between levels is unavoidable and can be rationalized in the reporting processes.

PART II: MONITORING THE OCEAN DECADE – A USER’S GUIDE

4. Quantitative Monitoring Indicators and Methodologies

Tracking progress against quantitative indicators will be a major component of the M&E framework for the Ocean Decade. For each of the levels of M&E identified in Figure 3 key information on quantitative indicators is contained in the following sections:

- i. Name and brief description of indicator
- ii. Source of indicator (if existing indicator)
- iii. Methodology for measurement as part of Ocean Decade M&E Framework
- iv. Responsibility for measurement
- v. Reporting period
- vi. Links to other indicators
- vii. Comments and observations to assist in monitoring efforts

The Annexes to the Manual contain the forms that will be used for reporting by partners. These forms [will be used by partners in their online form to submit reporting](#) to facilitate the sharing and analysis of data.

4.1 Impact Level – Decade Outcomes³

Indicator Number	Issue	Brief description	Source	Responsibility
Outcome 1: A Clean Ocean				
O1.1	Nutrient pollution	Global EEZ chlorophyll-a deviation from baseline	SDG 14.1.1 indicator	DCU
<i>Future indicator</i>	<i>Nutrient pollution</i>	<i>Index of Coastal Eutrophication (ICEP)</i>	<i>SDG 14.1.1</i>	<i>DCU</i>
<i>Future indicator</i>	<i>Plastic pollution</i>	<i>Floating plastic debris density</i>	<i>SDG 14.1.1</i>	<i>DCU</i>
Outcome 2: A Healthy and Resilient Ocean				
O2.1	Ecosystem management	Number of countries using ecosystem-based approaches to managing marine areas	SDG 14.2.1 indicator	DCU
O2.2	Ecosystem management	Coverage of protected areas in relation to marine areas	SDG 14.5.1 indicator	DCU
O2.3	Ocean acidification	Average marine acidity (pH) measured at agreed suite of representative sampling stations	SDG 14.3.1 indicator	DCU
<i>Future indicator</i>	<i>Ecosystem restoration</i>	<i>Area of marine and coastal areas restored</i>	<i>UN Decade of Ecosystem Restoration</i>	<i>DCU</i>
Outcome 3: A Productive Ocean				
O3.1	Fisheries sustainability	Proportion of fish stocks within biologically sustainable levels	SDG 14.4.1 indicator	DCU
O3.2	Sustainable ocean economy	Sustainable fisheries as a proportion of GDP in Small Island Developing States, Least Developed Countries, All Countries	SDG 14.7.1 indicator	DCU
O3.3	Sustainable ocean economy	Number of patents of relevance to ocean sustainability across all patent types	OECD Sustainable Ocean Economy database	DCU
<i>Future indicator</i>	<i>Sustainable ocean economy</i>	<i>Percentage of global EEZ covered by Sustainable Ocean Plans</i>	<i>Ocean Panel</i>	<i>DCU</i>
Outcome 4: A Predicted Ocean				
O4.1	Ocean observations	Proportion of the ocean monitored for EOVs	GOOS	DCU

³ Unless otherwise noted all indicators are measured on an annual basis.

Indicator Number	Issue	Brief description	Source	Responsibility
O4.2	Ocean observations	Number of countries with sustained monitoring for EOVs	OGC	DCU
Outcome 5: A Safe Ocean				
O5.1	Climate vulnerability	Climate vulnerability index	IPCC	DCU
O5.2	Risk preparedness	Percentage of at-risk communities that are tsunami ready	IOC - TSU	DCU
Outcome 6: An Accessible Ocean				
O6.1	Investment in marine technology	Proportion of total research budget allocated to research in the field of marine technology	SDG 14.a.1 indicator	DCU
O6.2	Data accessibility	Number of national oceanographic data centres	IODE	DCU
O6.3	Access to research infrastructure	Number of ocean science institutions / laboratories / field stations	GOSR	DCU
O6.4	Information generation	Number of ocean science peer-reviewed publications	GOSR	DCU
Outcome 7: An Inspiring & Engaging Ocean				
O7.1	Ocean literacy	Number of countries with ocean literacy integrated into the curriculum and formal education policies of formal education systems	IOC	DCU
O7.2	Gender diversity	Percentage of female researchers in ocean science	GOSR	DCU
O7.3	Generational diversity	Percentage of ocean researchers less than 34 years old	GOSR	DCU

4.2 Impact Level – Decade Challenges⁴

Indicator Number	Issue	Brief description	Source	Responsibility	Comments
Challenge 1 - Understand and Beat Marine Pollution					
C1.1	Generation of knowledge	Number of knowledge products produced disaggregated by (i) type of product i.e., peer reviewed publications, grey literature, other; and (ii) inclusion of indigenous and local knowledge	Decade Actions' records	Decade Actions	'Other' category to be specified
C1.2	Uptake of knowledge	Number of references of knowledge products by users disaggregated by type of use i.e., citation in peer reviewed journal, citation in grey literature, policy or strategy document, management plan, patent, educational or training tool, other	Decade Actions' records	Decade Actions	'Other' category to be specified
Challenge 2 - Protect and Restore Ecosystems and Biodiversity					
C2.1	Generation of knowledge	Number of knowledge products produced disaggregated by (i) type of product i.e., peer reviewed publications, grey literature, other; and (ii) inclusion of indigenous and local knowledge	Decade Actions' records	Decade Actions	'Other' category to be specified
C2.2	Uptake of knowledge	Number of references of knowledge products by users disaggregated by type of use i.e., citation in peer reviewed journal, citation in grey literature, policy or strategy document, management plan, patent, educational or training tool, other	Decade Actions' records	Decade Actions	'Other' category to be specified
Challenge 3 - Sustainably Feed the Global Population					
C3.1	Generation of knowledge	Number of knowledge products produced disaggregated by (i) type of product i.e., peer reviewed publications, grey literature, other; and (ii) inclusion of indigenous and local knowledge	Decade Actions' records	Decade Actions	'Other' category to be specified
C3.2	Uptake of knowledge	Number of references of knowledge products by users disaggregated by type of use i.e., citation in peer reviewed journal, citation in grey literature, policy or strategy document, management plan, patent, educational or training tool, other	Decade Actions' records	Decade Actions	'Other' category to be specified
Challenge 4 - Develop a Sustainable and Equitable Ocean Economy					
C 4.1	Generation of knowledge	Number of knowledge products produced disaggregated by (i) type of product i.e., peer reviewed publications, grey literature, other; and (ii) inclusion of indigenous and local knowledge	Decade Actions' records	Decade Actions	'Other' category to be specified

⁴ Unless otherwise noted all indicators are measured on an annual basis.

Indicator Number	Issue	Brief description	Source	Responsibility	Comments
C 4.2	Uptake of knowledge	Number of references of knowledge products by users disaggregated by type of use i.e., citation in peer reviewed journal, citation in grey literature, policy or strategy document, management plan, patent, educational or training tool, other	Decade Actions' records	Decade Actions	'Other' category to be specified
Challenge 5 - Unlock ocean-based solutions to Climate Change					
C5.1	Generation of knowledge	Number of knowledge products produced disaggregated by (i) type of product i.e., peer reviewed publications, grey literature, other; and (ii) inclusion of indigenous and local knowledge	Decade Actions' records	Decade Actions	'Other' category to be specified
C5.2	Uptake of knowledge	Number of references of knowledge products by users disaggregated by type of use i.e., citation in peer reviewed journal, citation in grey literature, policy or strategy document, management plan, patent, educational or training tool, other	Decade Actions' records	Decade Actions	'Other' category to be specified
Challenge 6 - Increase community resilience to ocean hazards					
C6.1	Generation of knowledge	Number of knowledge products produced disaggregated by (i) type of product i.e., peer reviewed publications, grey literature, other; and (ii) inclusion of indigenous and local knowledge	Decade Actions' records	Decade Actions	'Other' category to be specified
C6.2	Uptake of knowledge	Number of references of knowledge products by users disaggregated by type of use i.e., citation in peer reviewed journal, citation in grey literature, policy or strategy document, management plan, patent, educational or training tool, other	Decade Actions' records	Decade Actions	'Other' category to be specified
C6.3	Scope of infrastructure	Number of new infrastructure elements for multi-hazard early warning systems	Decade Actions' records	Decade Actions	Relevant when Decade Action includes ocean science infrastructure element(s)
C6.4	Sustainability of infrastructure	Percentage gap in funding needs for next 5-year period	Decade Actions' records	Decade Actions	Relevant when Decade Action includes ocean science infrastructure element(s)
C6.5	Fit for purpose of infrastructure	Number of users of infrastructure or infrastructure products	Decade Actions' records	Decade Actions	Relevant when Decade Action includes ocean science infrastructure element(s)
Challenge 7 - Expand the Global Ocean Observing System					

Indicator Number	Issue	Brief description	Source	Responsibility	Comments
C7.1	Generation of knowledge	Number of knowledge products produced disaggregated by (i) type of product i.e., peer reviewed publications, grey literature, other; and (ii) inclusion of indigenous and local knowledge	Decade Actions' records	Decade Actions	'Other' category to be specified
C7.2	Uptake of knowledge	Number of references of knowledge products by users disaggregated by type of use i.e., citation in peer reviewed journal, citation in grey literature, policy or strategy document, management plan, patent, educational or training tool, other	Decade Actions' records	Decade Actions	'Other' category to be specified
C7.3	Scope of infrastructure	Number of new infrastructure elements of the Global Ocean Observing System	Decade Actions' records	Decade Actions	Relevant when Decade Action includes ocean science infrastructure element(s)
C7.4	Sustainability of infrastructure	Percentage gap in funding needs for next 5-year period for critical infrastructure	Decade Actions' records	Decade Actions	Relevant when Decade Action includes ocean science infrastructure element(s)
C7.5	Fit for purpose of infrastructure	Number of users of critical infrastructure or infrastructure products	Decade Actions' records	Decade Actions	Relevant when Decade Action includes ocean science infrastructure element(s)
Challenge 8 - Create a digital representation of the Ocean					
C8.1	Generation of knowledge	Number of knowledge products produced disaggregated by (i) type of product i.e., peer reviewed publications, grey literature, other; and (ii) inclusion of indigenous and local knowledge	Decade Actions' records	Decade Actions	'Other' category to be specified
C8.2	Uptake of knowledge	Number of references of knowledge products by users disaggregated by type of use i.e., citation in peer reviewed journal, citation in grey literature, policy or strategy document, management plan, patent, educational or training tool, other	Decade Actions' records	Decade Actions	'Other' category to be specified
C8.3	Scope of infrastructure	Number of new infrastructure elements contributing to the interoperable digital ecosystem of the Ocean Decade	Decade Actions' records	Decade Actions	Relevant when Decade Action includes ocean science infrastructure element(s)
C8.4	Sustainability of infrastructure	Percentage gap in funding needs for next 5-year period for critical infrastructure	Decade Actions' records	Decade Actions	Relevant when Decade Action includes ocean

Indicator Number	Issue	Brief description	Source	Responsibility	Comments
					science infrastructure element(s)
C8.5	Fit for purpose of infrastructure	Number of users of critical infrastructure or infrastructure products	Decade Actions' records	Decade Actions	Relevant when Decade Action includes ocean science infrastructure element(s)
Challenge 9 - Skills, Knowledge and Technology for All					
C9.1	Capacity development	Number of beneficiaries of capacity development disaggregated by type of capacity development, geography, gender, and career stage	Records of Decade Actions and partners	DCU DCO, DCC, DIP NDC Decade Actions	n/a
C9.2	Access to data	Number of datasets deposited in recognised data repositories consistent with the IOC Oceanographic Data Exchange Policy or relevant UN subordinate data policy	Records of Decade Actions and partners	Decade Actions	n/a
Challenge 10 - Change Humanity's Relationship with the Ocean					
C10.1	Indigenous and local knowledge	Number of activities carried out in partnership with holders of indigenous or local knowledge	Records of Decade Actions and partners	DCU DCO, DCC, DIP NDC Decade Actions	
<i>Future indicator</i>	<i>Behaviour change</i>	<i>Number of pledges to take action as part of GenOcean campaign</i>	<i>GenOcean engagement tracking</i>	<i>DCU</i>	<i>n/a</i>
<i>Future indicator</i>	<i>Behaviour change</i>	<i>Change in perceptions of the importance of ocean science and the ocean for sustainable development</i>	<i>TBD</i>	<i>TBD</i>	<i>Indicator will be the subject of future discussion and research.</i>

Indicator Number	Issue	Brief description	Source	Responsibility	Comments
<i>Future indicator</i>	<i>Behaviour change</i>	<i>Change in behaviour following improved knowledge of the ocean</i>	<i>TBD</i>	<i>TBD</i>	<i>Indicator will be the subject of future discussion and research.</i>

4.3 Operational Level – Decade Actions⁵

Indicator Number	Issue	Brief description	Source	Responsibility
OP1	Number of requests for endorsement	Number of requests for endorsement of Decade Actions disaggregated by type of Action, Challenge, Objective, ocean basins of implementation, countries of implementation	DCU records	DCU
OP2	Number of endorsed Decade Actions	Number of Decade Actions disaggregated by type of Action, Challenge, Objective, ocean basins of implementation, countries of implementation	DCU records	DCU
OP3	Partner institutions involved in Decade Actions	Number of partner institutions involved in Decade Actions disaggregated sector, home country of lead partner	Decade Actions records	Decade Actions
OP4	Individuals involved in implementing Decade Actions	Number of individuals involved in Decade Actions disaggregated by type of sector, gender, geography, career stage	Decade Actions records	Decade Actions
OP5	Beneficiaries of Decade Actions	Number of beneficiaries of Decade disaggregated by type of benefit (training, event, publication, knowledge product), gender, geography, career stage	Decade Actions records	Decade Actions

4.4 Operational Level – Decade Structures⁶

Indicator Number	Issue	Brief description	Source	Responsibility
OP6	National Decade Committees	Number of registered National Decade Committees	DCU records	DCU

⁵ Unless otherwise noted all indicators are measured on an annual basis.

⁶ Unless otherwise noted all indicators are measured on an annual basis.

Indicator Number	Issue	Brief description	Source	Responsibility
OP7	National Decade Committee membership	Number of members of National Decade Committee disaggregated by gender, career stage, sector	NDC records	NDC
OP8	National Decade Committee activities	Number of activities led by National Decade Committee disaggregated by type of activity	NDC records	NDC
OP9	Decade Coordination Offices	Number of Decade Coordination Offices disaggregated by Challenge, geographic focus, location of host institution	DCU records	DCU
OP10	Activities of DCOs	Number of activities carried out by DCO disaggregated by type of activity	DCO records	DCO
OP11	Beneficiaries of DCOs	Number of beneficiaries of activities carried out by DCO disaggregated by geography, gender, and career stage	DCO records	DCO
OP12	Decade Collaborative Centres	Number of Decade Collaborative Centres disaggregated by Challenge, geographic focus, location of host institution	DCU records	DCU
OP13	Activities of DCCs	Number of activities carried out by DCC disaggregated by type of activity	DCC records	DCC
OP14	Beneficiaries of DCCs	Number of beneficiaries of activities carried out by DCC disaggregated by geography, gender, and career stage	DCC records	DCC
OP15	Decade Implementing Partners	Number of Decade Implementing Partners disaggregated by Challenge, geographic focus, location of host institution	DCU records	DCU
OP16	Activities of DIPs	Number of activities carried out by DIP disaggregated by type of activity	DIP records	DIP
OP17	Beneficiaries of DIPs	Number of beneficiaries of activities carried out by DIP disaggregated by geography, gender, and career stage	DIP records	DIP
OP18	Communities of Practice	Number of Communities of Practice disaggregated by Challenge, geography	DCU records	DCU
OP19	Membership of Communities of Practice	Number of Actions registered to Communities of Practice disaggregated by type of Action	DCU records	DCU
OP20	Informal Working Groups	Number of Informal Working Groups	DCU records	DCU
OP21	Membership of Informal Working Groups	Number of members of Informal Working Groups disaggregated by gender, geography, and career stage	DCU records	DCU

4.5 Enabling Environment – Capacity Development⁷

Indicator Number	Issue	Brief description	Source	Responsibility
CD1	Capacity development	Number of capacity development activities by type of activity	Records of Decade Actions and partners	DCU DCO, DCC, DIP NDC Decade Actions
C9.1	Beneficiaries of capacity development	Number of beneficiaries of capacity development disaggregated by type of capacity development, geography, gender, and career stage	Records of Decade Actions and partners	DCU DCO, DCC, DIP NDC Decade Actions

4.6 Enabling Environment – Resource Mobilisation⁸

Indicator Number	Issue	Brief description	Source	Responsibility
RM1	Resources for new Decade Actions	Resources mobilised for design or implementation of new Decade Actions in USD	DCU records	DCU
RM2	Resources for existing Decade Actions	Resources mobilised to support existing Decade Actions in USD	DCU records	DCU
RM3	Resources secured by Decade Actions	Resources mobilised by Decade Actions disaggregated by type of Action, Challenge in USD	Resource Needs Assessment worksheet	Decade Actions
RM4	Funding gap of Decade Actions	Funding gap (%) of Decade Actions disaggregated by type of Action, Challenge	Resource Needs Assessment worksheet	Decade Actions

⁷ Unless otherwise noted all indicators are measured on an annual basis.

⁸ Unless otherwise noted all indicators are measured on an annual basis.

Indicator Number	Issue	Brief description	Source	Responsibility
RM5	Resources for coordination	Resources mobilised for central coordination in USD	DCU records	DCU
RM6	Funding gap for coordination	Funding gap (%) for central coordination	DCU records	DCU
RM7	Resources for decentralised coordination	Resources mobilised for decentralised coordination disaggregated by type of structure, Challenge, geographic focus in USD	Decade partner records	DCO DCC DIP
RM8	Alliance financial commitments	Financial commitments of Ocean Decade Alliance members in USD	DCU records	DCU
RM9	Alliance in-kind commitments	In-kind commitments of Ocean Decade Alliance Members in USD equivalent	DCU records	DCU

4.7 Enabling Environment – Stakeholder Engagement and Outreach⁹

Indicator Number	Issue	Brief description	Source	Responsibility
SE1	Global Stakeholder Forum	Number of sign-ups to Global Stakeholder disaggregated by sector, geography, gender, career stage	GSF metrics	DCU
SE2	Website visibility	Number of visits to Ocean Decade website	Website metrics	DCU
SE2.1	Associated website visibility	Number of visits to associated websites	Partners' website metrics	DCU DCO, DCC, DIP NDC Decade Actions
SE3	Social media engagement	Number of social media engagements disaggregated by Ocean Decade, GenOcean and combined partner social media accounts	Social media metrics of DCU and partners	DCU DCO, DCC, DIP NDC Decade Actions

⁹ Unless otherwise noted all indicators are measured on an annual basis.

Indicator Number	Issue	Brief description	Source	Responsibility
SE4	Social media followers	Number of social media followers disaggregated by Ocean Decade, GenOcean and combined partner social media accounts	Social media metrics of DCU and partners	DCU DCO, DCC, DIP NDC Decade Actions
SE5	Media presence	Number of mentions of Ocean Decade in global, regional, national media disaggregated by country, language	Media tracking	DCU
SE6	Partnerships	Number of partnership agreements by type of partner	DCU records	DCU
SE7	Events	Number of international events with Ocean Decade presence	DCU records	DCU

5. Qualitative and Narrative Reporting

Given the complexity of the Ocean Decade ecosystem and scope and in line with the desire to maintain a relatively simple and easy to measure set of quantitative indicators, qualitative, narrative-based measurement of progress will be used as an important part of the M&E Framework.

Such qualitative reporting will be used to report on progress of issues where quantitative indicators are not readily available or are still under development, or to elucidate issues or trends emerging from quantitative analyses.

Examples of issues for which qualitative and narrative reporting will be used – at least in the current iteration of the M&E Framework, to complement quantitative data include:

- Reporting on individual and institutional behaviour change because of capacity development or stakeholder engagement in the Ocean Decade
- Reporting on uptake of ocean science and knowledge
- Reporting on stakeholder engagement and descriptive reporting of activities undertaken with and by diverse groups
- Reporting on changes in perceptions, priorities, and investments by partners in ocean science

Qualitative reporting will be drawn from several sources including Decade Actions, decentralised coordination structures, National Decade Committees and the DCU and could take the form of syntheses of existing analyses or reports, case studies prepared for specific initiatives, or results of surveys or interviews. Such reporting is included in templates used by different Decade partners for their annual reporting, and ad-hoc reporting may also be developed on an as-needs basis for different Decade publications and progress reports.

6. Roles and Responsibilities for M&E Framework Implementation

Figure 4 describes the role of different parts of the Ocean Decade governance and coordination structures and stakeholder ecosystem in relation to the implementation of the M&E Framework.

7. Review and Revision of the M&E Framework and Manual

A first review of the M&E Framework and Manual will be carried out following the first full round of implementation, thus allowing lessons learnt from the first year of implementation to be integrated into future iterations. From that point on, the Framework and Manual will be reviewed in line with the Ocean Decade International Conference Series, or as needed to incorporate major new advances in the indicators or approaches to monitoring and evaluation.

Decade Coordination Unit	DCO / DCC / DIP	National Decade Committees	Decade Programmes	Decade Projects	Decade Contributions	Decade Activities	Informal Working Groups
<ul style="list-style-type: none"> •Ultimate responsibility for M&E Framework implementation and reporting •Launch process to collect reporting from other partners •Collection and collation of annual reporting data for global indicators 	<ul style="list-style-type: none"> •Annual reporting to DCU on own progress and actions •Support and communication to Decade Actions under their purview to facilitate completion of reporting requirements •Support to DCU on specific analyses or narrative reporting on an as-needs basis 	<ul style="list-style-type: none"> •Annual reporting to DCU on own progress and activities •Support to DCU on specific analyses or narrative reporting at the national level on an as-needs basis 	<ul style="list-style-type: none"> •Annual reporting to the DCU •Support and communications to aligned Decade Projects to facilitate completion of reporting requirements •Support to decentralised coordination structures and DCU on specific analyses or narrative reporting as required 	<ul style="list-style-type: none"> •Annual reporting to the DCU 	<ul style="list-style-type: none"> •Annual reporting to the DCU •Support to decentralised coordination structures and DCU on specific analyses or narrative reporting as required 	<ul style="list-style-type: none"> •Reporting to DCU upon completion of activity 	<ul style="list-style-type: none"> •Annual report to DCU on activities

Figure 4: Roles in M&E Framework Implementation

Annex 1: Reporting Forms for Implementation of M&E Framework

The reporting forms can be found at the following links:

Programme Form: <https://oceanexpert.org/document/30814>

Project Form: <https://oceanexpert.org/document/31475>

DCC/DCO/DIP Form: <https://oceanexpert.org/document/30815>

NDC Form: <https://oceanexpert.org/document/30816>

Contribution Form: <https://oceanexpert.org/document/31476>