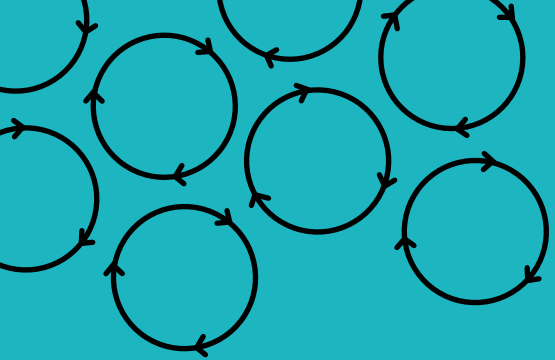
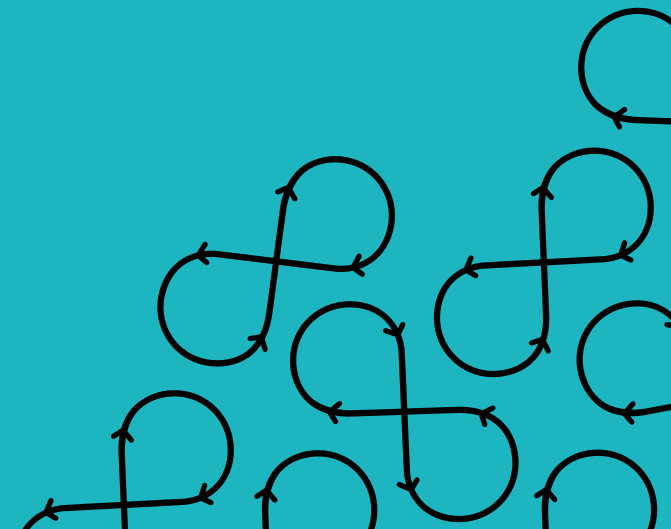
MEL Handbook for SDG 14

Conserve and sustainably use the oceans, seas and marine resources for sustainable development





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Contents

Acronyms and abbreviations

BoBLME	Bay of Bengal Large Marine Ecosystem
CBD	Convention on Biological Diversity
DAC	Development Assistance Committee (OECD)
EU	European Union
FAME	Futuristic Aviation and Maritime Enterprise
FAO	Food and Agriculture Organization of the United Nations
GOOS	Global Ocean Observing System
HLPF	High-Level Political Forum
ICES	International Council for the Exploration of the Seas
IAEG-SDGs	Inter-Agency and Expert Group on SDG Indicators
IIED	International Institute for Environment and Development
IMO	International Marine Organization
IOC-UNESCO	Intergovernmental Oceanographic Commission of the United Nations Educational Scientific and Cultural Organisation
IPBES	Intergovernmental Platform on Biodiversity and the Ecosystem Services
IUU	Illegal, unreported and unregulated
LDCs	Least Developed Countries
LFA	Logical framework approach
LMMA	Locally managed marine area
M&E	Monitoring and evaluation
MARPOL	International Convention for the Prevention of Pollution from Ships
MEL	Monitoring, evaluation and learning
MPA	Marine protected area
MSC	Marine Stewardship Council
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
OHI	Ocean Health Index
OSPAR	Convention for the Protection of the Marine Environment of the North-east Atlantic
PICTs	Pacific island countries and territories
PSR	Pressure-state-response model
SDG	Sustainable Development Goal
Sida	Swedish International Development Cooperation Agency

SIDS	Small Island Developing States
SIDS Conference	Third International Conference on Small Island Developing States
SMART	Specific, measurable, achievable, relevant and time-bound
SPREP	Secretariat of the Pacific Regional Environment Programme
ToC	Theory of change
TURF	Territorial use right fishery
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UN-DOALOS	United Nations Division for Ocean Affairs and Law of the Sea
UN Environment	United Nations Environment Programme, formerly UNEP
UNEP	United Nations Environment Programme, now known as UN Environment
VNR	Voluntary national reviews
WCMC	World Conservation Monitoring Centre
WMO	World Meteorological Organization

Acronyms and abbreviations used in Figure 2 (p 18)

AC	Arctic Council
CECAF	Fishery Committee for the Eastern Central Atlantic
CI	Conservation International
CIESM	The Mediterranean Science Commission
DOALOS	Division for Ocean Affairs and the Law of the Sea
GFCM	General Fisheries Commission for the Mediterranean
GOC	Global Ocean Commission
GOF	Global Oceans Forum
GPO	Global Partnership for Oceans
HELCOM	Baltic Marine Environment Protection Commission – Helsinki Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
ICSU	International Science Council
IDDRI	Institute for Sustainable Development and International Relations
IMO	International Maritime Organization
IOC-UNESCO	Intergovernmental Oceanographic Commission of UNESCO
ISA	International Seabed Authority
IUCN	International Union for Conservation of Nature
MARS	Mariners' Alerting and Reporting Scheme
NAFO	Northwest Atlantic Fisheries Organization
NASCO	North Atlantic Salmon Conservation Organization
NEAFC	North East Atlantic Fisheries Commission
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PEW	Pew Charitable Trusts
PICES	North Pacific Marine Science Organization
POGO	Partnership for Observation of the Global Ocean
SCOR	Scientific Committee on Oceanic Research
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme

UNEP	United Nations Environment Programme (now UN Environment)
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHRC	United Nations Human Rights Council
UNTAC	United Nations Transitional Authority in Cambodia
WMO	World Meteorological Organization
WON	World Ocean Network

Preface

The Sustainable Development Goals (SDGs) are one of the leading initiatives for addressing the critical, complex and often inter-related issues of our world. SDG 14 — Life below water — focuses on our oceans, estuaries, rivers and watersheds, and the human systems that intersect with them. Unfortunately, it has struggled to gain attention and support on an international scale.

Due to the interconnected nature of SDG 14, we have developed this handbook to help readers identify and develop appropriate monitoring, evaluation and learning (MEL) mechanisms for their SDG 14 interventions. The formal reporting process for the SDGs requires follow-up and review against defined SDG 14 targets and indicators. The 2030 Agenda also requires national governments and custodian agencies to follow up and review progress by tracking and reporting on recognised and approved targets and indicators. This handbook is designed to complement that process.

This handbook recognises that governments and agencies will need to adopt detailed and linked MEL practices to ensure regular result tracking for SDG 14 and the widespread dissemination of lessons learnt at local, national, regional and global levels. By encouraging a more detailed MEL approach for SDG 14 initiatives, the handbook promotes improved reporting on results and progress towards SDG 14 targets and the 2030 Agenda more broadly.

The handbook focuses on how a range of actors in a variety of contexts can use MEL to understand which SDG 14 targets and initiatives are working, which are not, why, for whom and how. Ultimately, it advocates for widespread learning on how to accelerate progress towards the transformations needed for success in conserving and using our oceans, seas and marine resources in a sustainable way.

The purpose and desired outcomes of this handbook are to:

- Contribute to SDG 14 MEL systems and approaches, including MEL components of national SDG 14 strategies
- Assist in generating stronger evidence for advocacy, learning, reporting and contribute to capacity-strengthening initiatives in MEL for SDG 14, and
- Strengthen cooperation and coherence in relation to measuring, understanding and accelerating progress towards SDG 14 through participatory MEL approaches.

A global survey and a three-day workshop in Senegal informed the handbook content. During the workshop in November 2018, a team of co-authors, identified through the global survey, considered the MEL-related implications for and needs of SDG 14.

MEL for SDG 14 evolves as conditions and practices change and lessons are learnt. The co-authors commend this handbook to you for your use and request your feedback so we can continually update and improve it in pursuit of the highest possible results towards SDG 14. For comments and feedback contact Emilie Beauchamp at **emilie.beauchamp@iied.org.**

This handbook was created with support from the Swedish International Development Cooperation Agency (Sida).

Introducing the handbook

The SDG 14 MEL handbook aims to inspire action on improved MEL related to SDG 14. It strives to give national stakeholders systematic and practical guidance on how to implement MEL to strengthen ocean-related governance and management systems and support and accelerate the achievement of SDG 14.

Primary audience
Our primary audiences are those responsible for reporting on — or building evidence of — progress towards SDG 14 targets. They include national focal points and decision makers who are responsible for industries, interests and sectors that directly or indirectly intersect with SDG 14 interventions.

Secondary audience
Other SDG 14 stakeholders that may find the handbook useful include custodian agencies, organisations responsible for ocean-related governance and management systems, and monitoring and evaluation (M&E) practitioners who support our primary audience and wish to expand their knowledge of MEL for SDG 14. Other interested readers may include civil society, private sector and academic actors that are broadly engaged with sustainable development and intergovernmental organisations.

How to read the handbook
The handbook is not designed to replace the existing requirements for SDG 14 reporting; rather it should complement and deepen evidence building to help improve reporting and subsequent actions. Users can either read the handbook in full or refer to the most relevant sections for their level of knowledge, circumstances and contexts.

We use the term ‘intervention’ throughout the handbook to refer to a wide range of activities that include — but are not limited to — projects, programmes, initiatives and policies.

Hyperlinks
We denote hyperlinks to source material with blue text. Hyperlink internet addresses are available by following the endnote link to the detailed reference pages.

Features of the Handbook

Each chapter includes several icons to draw the reader's attention and highlight crucial information.

Important considerations: These are points to look out for

Guidelines steps: A focus on processes to use

Good-practice examples

Special considerations of systems, synergies and trade-offs

1. Introduction to SDG 14

1.1. What is SDG 14 and why is it important?

The 2030 Agenda for Sustainable Development, which came into effect on 1 January 2016, pays specific attention to the importance of oceans and waterways. SDG 14 – Life below water – looks to "conserve and sustainably use the oceans, seas and marine resources" and articulates ten targets and their corresponding indicators to help countries and agencies achieve this goal.

Most of the indicators for the SDG 14 targets are classified as Tier 3. This is the lowest-ranking SDG indicator, which illustrates that "no internationally established methodology or standards are yet available for the indicator".[1] Consequently, it is difficult to evaluate overall progress towards SDG 14 for Tier 3 indicators. The complicated nature of social and economic systems related to the oceans and the complex ecosystems within them means that governance including monitoring and management of interventions is a huge challenge. Yet progress towards SDG 14 is critical for several reasons.

Ecosystems underpin and maintain all life on earth: SDGs 14 and 15 (Life on land) are the two SDGs that promote the importance of healthy and resilient ecosystems for sustainable development. Oceans cover 71% of the earth's surface and are home to up to 2.2 million species.[2] They regulate global climate, mediating temperature, driving weather systems and determining rainfall, droughts and floods: 83% of the world's carbon cycle is circulated through the ocean, which absorbs around 30% of the annual anthropogenic carbon emissions released to the atmosphere.

Oceans directly and indirectly contribute to societal wellbeing: Oceans provide huge benefit to society. Most of the world's megacities are in coastal zones and coastal communities often have deep-rooted cultural, social and physical interconnections with the ocean (SDG11: Sustainable cities and communities). Around three billion people source nearly 20% of their mean daily animal protein intake from the oceans,[3] providing nutritional and health benefits (SDG 3: Good health and wellbeing) and reducing poverty (SDG 1: No poverty) and hunger (SDG 2: Zero hunger). Finally, areas such as the Central Arctic Ocean and Antarctic Ocean, that are outside national jurisdictions, can also act as a symbol for peace and cooperation (SDG 16: Peace, justice and strong institutions).

The blue economy has yet to reach its potential: Oceans support millions of jobs through a variety of sectors, including fisheries, transport, tourism and energy, adding US$1.5 trillion to the global economy every year. However, the blue economy is growing at great speed. For example, aquaculture is the world's fastest growing food sector and now provides humans with more fish than wild-caught fisheries, while the European Union anticipates its blue economy will double in value by 2030.[4] This presents challenges in terms of balancing economic growth with protecting and ensuring the sustainability of ecosystems and the societies benefitting from it.

The world needs a stronger emphasis on SDG 14 for sustainable development: This is especially important for small island developing states (SIDS) and those least developed countries (LDCs) whose economies and societal wellbeing depend on ocean-related activities. To make enough progress towards SDG 14 by 2030, coalitions of organisations, countries and regions must make a concerted effort on effective watershed, coastal and ocean area governance. Land-locked countries with watershed areas are particularly important for encouraging sustainable development under SDG 14: progress against this goal will require a holistic approach and should not be restricted to coastal or island nations.

Accelerating progress: The 2030 Agenda clearly lays out the need for a commitment to achieving transformational change. This means changing the pace at which progress is made and using fresh ideas to find new approaches and solutions. One focus of this handbook is how stakeholders can harmonise and align to create synergies in and between different organisations, sectors or systems — in other words, between their priorities, approaches, interventions and systems. This helps generate a more holistic, accelerated and potentially transformative approach to development. Collaborating and co-creating around a common purpose can allow stakeholders to generate co-benefits, find potential leverage points or catalytic pathways and follow a learning-oriented, adaptive approach that allows for adjustments to be made as situations evolve.

SDG 14 is intrinsically linked to many of the other SDGs, so working towards it can simultaneously help to meet many other SDGs. Success in achieving SDG 14 will contribute to progress in all other SDGs. Indeed, in some cases, it is a prerequisite. Yet it is the **least reported on** and, in terms of attention and allocated resources, it is **perceived to be one of the lowest-priority goals.** SDG 14 ranks third last in terms of SDG philanthropic funding[5] and a survey of global business leaders reveals that they regard it as the second-least important SDG.[6]

Understanding the interactions between the targets can contribute towards:

- **Developing synergies:** Identifying mutual benefits and complementarities between the SDG targets can multiply progress towards the 2030 Agenda and magnify the impact of such initiatives. Where possible, it is important to harmonise or align policies, plans and interventions so that their results reinforce and support — rather than constrain or oppose — one another.

- **Identifying priorities and dealing with risks, such as bottlenecks, trade-offs and negative consequences:** It is useful to identify which interactions might lead to changes that, instead of magnifying or multiplying the results, hinder, obstruct or even balance each other out. It is also important to identify and evaluate negative consequences or results of actions (externalities) that might undo some or all of the positive results achieved so far. Such an approach supports risk management and helps identify priorities for action and trade-offs that must be made. For example, ending harmful subsidies (SDG 14.6) could help reduce overfishing (SDG 14.4) and lead to ecological restoration (SDG 14.2). But it could also lead to a loss of work for people employed in the fishing sector, impacting SDG 6 (Decent work and economic growth). That could then feed back in unexpected ways. It is important to explore such trade-offs.

- **Finding accelerating pathways.** Things do not usually happen in a linear fashion. The effort needed to make a change does not directly relate to its effect. A small intervention, undertaken with limited effort or resources, can lead to a large change. Identifying leverage points can help accelerate change; Donella Meadows' seminal work on leverage points can help us understand more about their potential with respect to SDG 14.[7]

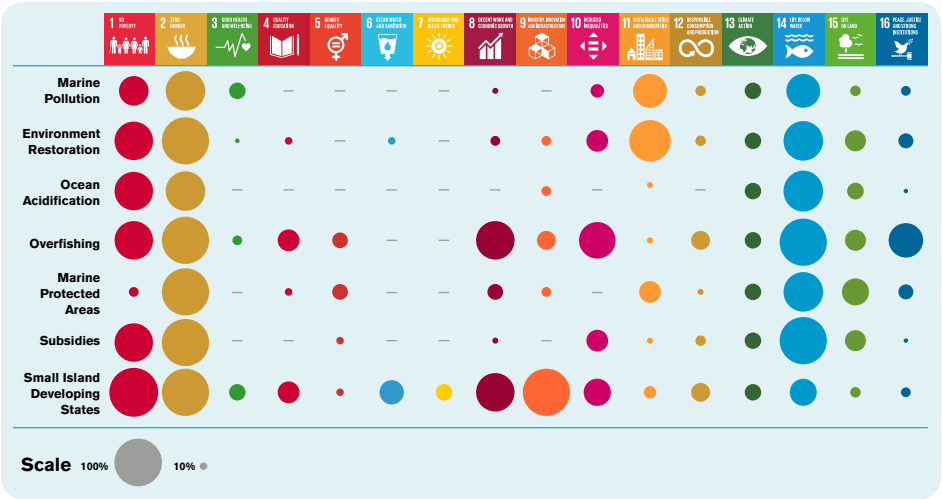
It is possible to find such pathways, even where significant causal complexity makes it hard to sense the patterns and connections between changes in a system. Investing time in tools such as preparing a theory of change can help highlight the potential far-reaching effect of pilot and innovative activities on wider systems. It is also important to consider how such innovations would be communicated and brought to a wider scale from the beginning. Through good stakeholder management, we can identify the best mechanisms for communicating results on innovative initiatives in a way that will get the best learning effect.

Figure 1 provides a useful visual representation of the relationships between SDG 14 and other SDGs.[5] It does not address secondary targets — that is, SDG 14a, b, c and so on — as these do not include achievement dates or specific benchmarks. SDG 14 has connection with the 16 other SDGs, so progress

towards achieving the other goals will influence progress towards achieving SDG 14 and vice versa. This information can help with prioritising interventions and managing risk.

Drawing on these interconnections in practice can yield multiple benefits and help bring to life the concept of complex systems. This will be crucial to ocean-related governance systems, policies and strategies, given the cutting-edge insights into ecosystems and socioecological systems of those who work in SDG 14-relevant areas.

Figure 1. Co-benefits of achieving targets for SDG 14



Note: The size of the bubbles represents the proportion of targets within each SDG that benefit from progress on the ocean targets.
Source: Nippon Foundation-Nereus Program (2017)[8]

It is essential for those working with SDG-related policy and strategy planning, implementation and MEL to acquaint themselves with the implications of interactions between SDG targets and how to use them in practice. The SDG Interlinkages Analysis & Visualisation Tool (V2.0)[9] is one of several tools that can help us gain a better understanding of these types of interaction. It presents the connections between each of the SDG targets, disaggregated by country and displayed in a complex, interactive map. We encourage all users of this manual to access these and similar resources for help with planning and implementing policies, strategies and interventions.

1.2 Key actors in SDG 14

Ocean governance activities can contribute towards achieving SDG 14. They can include environmental protection and preservation, shipping laws, anti-pollution measures and fisheries, among other things. International ocean governance involves many multilateral organisations and non-governmental organisations (NGOs), often working in partnership across marine issues or on specific ones. Some of the key organisations involved include:

- Global and regional intergovernmental organisations such as UN regional commissions and the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (IOC-UNESCO), UN agencies such as the Food and Agriculture Organization of the United Nations (FAO) and UNESCO, and regional partnerships such as the Arctic Council, the Pacific Islands Forum and others

- Regional and global treaties and conventions, such as the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) and the Convention on Biological Diversity (CBD)

- NGOs such as World Wide Fund for Nature, international and regional finance institutions such as the World Bank and funding bodies such as the Global Environment Facility

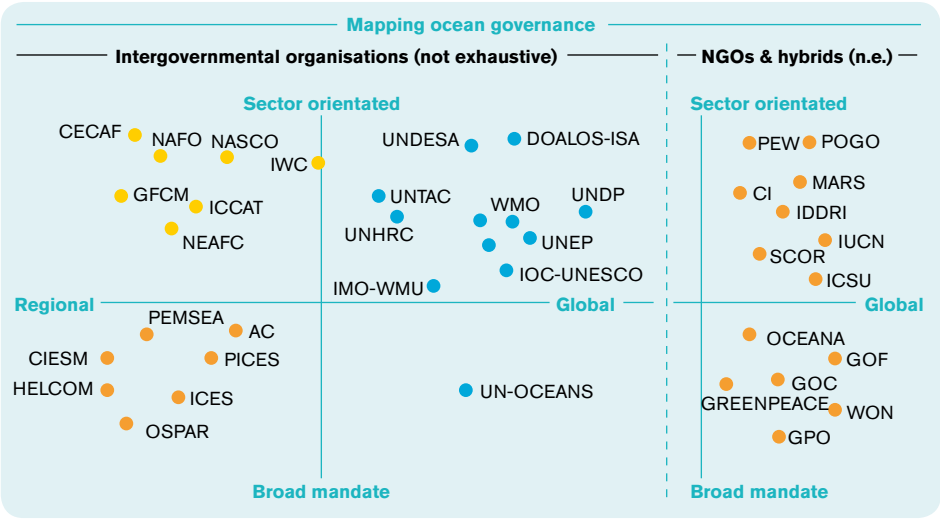
- National governments and stakeholders, including government departments, communities, business and marine users, and

- Monitoring collective platforms or forums, including Global Fish Watch, the United Nations Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-Economic Aspects (the UN Regular Process), Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the International Council for Exploration of the Seas (ICES). The UN Statistical Division also plays a role in data collection and analysis.

To ensure the sound planning and delivery of SDG 14, these actors must work together across levels and geographies. A key way of ensuring this is through the High-Level Political Forum (HLPF) on Sustainable Development, a voluntary, state-led body that provides a platform for partnerships, including through the participation of major groups and other relevant stakeholders. The HLPF tracks SDG implementation and achievement through voluntary national reviews (VNRs).

Figure 2 maps the key actors involved in ocean governance. It is not an exhaustive list, but rather illustrates the large number and types of actor within ocean governance and the need for widespread cooperation between them. The figure maps organisations by technical mandate (sector or broad) and area of coverage (regional or global).

Figure 2. Ocean governance & actors



Note: Please refer to Acronyms and abbreviations on p6.
Source: Global Ocean Science Report (2017)[10]

1.3. Formal follow-up and review processes

The 2030 Agenda for Sustainable Development encourages member states to conduct regular, country-led and country-driven reviews of progress that can inform annual HLPF reviews by the United Nations Economic and Social Council. National responsibility for tracking progress is tied to national follow-up and review processes through the VNRs, which are presented at the HLPF. VNRs have three key roles:

- To report on SDG indicators and targets
- To highlight issues associated with monitoring and measuring progress, and
- To generate lessons learnt to accelerate progress towards the SDGs.

The 2030 Agenda also encourages country-led evaluation to build understanding about, and evidence of, what is and what is not working well across the SDGs — as well as why, for whom, with which values and under what conditions — in efforts to facilitate and contribute to transformation towards sustainable development.

To help track progress towards each SDG, the Open Working Group on the SDGs developed targets for key aspects of each goal, which were consequently agreed upon by the UN General Assembly. The Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) developed a global indicator framework, adopted by the UN General Assembly on 6 July 2017. This work is ongoing, with indicators refined annually.

See the UNStats indicator list for more information on how the IAEG-SDGs developed the indicators for the SDGs.[11] See Chapter 3 for more information on the custodian and partner agencies for each of the targets for SDG 14. You can also source more information on formal data gathering and reporting from the responsible custodian agencies.

1.4 SDG 14 targets

Target 14.1
By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

Target 14.2
By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.

Target 14.3
Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.

Target 14.4
By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.

Target 14.5
By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.

Target 14.6
By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.

Target 14.7
By 2030, increase the economic benefits to small island developing states and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

Target 14.A
Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries.

Target 14.B
Provide access for small-scale artisanal fishers to marine resources and markets.

Target 14.C
Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want.

Source: United Nations (2019)[11]

1.5. International conventions, laws and policies relating to SDG 14

Table 1 lists the international agreements most pertinent to SDG 14. These key pieces of legislation and agreements with multiple signatories have an important influence on the achievement of targets. Some agreements are relevant to more than one target. Handbook users should invest time in reading and understanding these. This is not an exhaustive list and you may need to do further research, particularly on regional conventions and agreements.

Table 1. Important international conventions, laws and policies for SDG 14

Convention/law/policy	Overview	Relevant targets
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972)	"To promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping of wastes and other matter".[12]	14.1
International Convention for the Prevention of Pollution from Ships (MARPOL) (1973)	To prevent different kinds of pollution from ships, including oil, noxious liquid substances, sewage, garbage and air pollution.[13]	14.1
United Nations Convention on the Law of the Sea (UNCLOS) (1982)	Governs "the territorial sea and the contiguous zone, the continental shelf, the high seas, fishing and conservation of living resources on the high seas."[14]	14.1 14.A 14.C
The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1992)	"To protect human health and the environment against the adverse effects of hazardous wastes."[15]	14.1
Convention on Biological Diversity (1992)	To conserve biological diversity To promote the sustainable use of the components of biological diversity The fair and equitable sharing of benefits arising from the utilisation of genetic resources.[16]	14.5 14.C
Convention for the Protection of the Marine Environment of the North-east Atlantic, the OSPAR Convention, Paris (1992)	Against dumping, including land-based sources of marine pollution and the offshore industry.	14.1
United Nations Framework Convention on Climate Change (1994)	A "framework for international cooperation to combat climate change by limiting average global temperature increases."[17]	14.2 14.3
Convention for the Protection of Marine Environment and the Coastal Region of the Mediterranean, the Barcelona Convention (1995)	The first of the Regional Seas Conventions,[18] ratified by 16 Mediterranean countries (now 22) in 1995.[19] Seeks to control pollution, sustainably manage marine resources, protect natural heritage and improve quality of life, among other goals.	14.1

Convention/law/policy	Overview	Relevant targets
FAO Code of Conduct for Responsible Fisheries (1995)	To "strengthen the international legal framework for more effective conservation, management and sustainable exploitation and production of living aquatic resources."[20]	14.4
United Nations Fish Stock Agreement (1995)	Based on UNCLOS and the principle that "states should cooperate to ensure conservation and promote the objective of the optimum utilisation of fisheries resource both within and beyond the exclusive economic zone".[21] Strives to provide a framework for cooperation in the conservation and management of those resources.	14.4
Stockholm Convention on Persistent Organic Pollutants Stockholm (2001)	A "global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment."[22]	14.2 14.3 14.7
International Convention on the Control of Harmful Anti-fouling Systems on Ships (2001)	Prohibits the use of harmful organotins in anti-fouling paints, which are applied to ship hulls to prevent the growth of sea life that would slow down the ship and increase fuel consumption.[23] These harmful organotins can leach into the ocean and persist, harming the environment and potentially entering the food chain.	14.1
International Convention for the Control and Management of Ships' Ballast Water and Sediments (2004)	Requires ships to manage their ballast water to a certain standard, to prevent them introducing invasive species to new environments. This issue worsened with the introduction of steel hulls, as vessels were able to use water instead of solid materials as ballast.[24]	14.1
The Honolulu Declaration on Ocean Acidification and Reef Management (2008)	Developed a range of policy and management practices that would help coral reefs cope with ocean acidification. Advocates for the widespread adoption of two core strategies: limiting fossil fuel emissions and building the resilience of tropical marine ecosystems and communities to maximise their ability to resist and recover from climate change impacts.[25]	14.3
The Monaco Declaration: Reef Resilience (2009)	Calls on governments to take urgent action to reduce carbon emissions, which are contributing to ocean acidification.[26]	14.3
Minamata Convention on Mercury (2013)	A global treaty to protect human health and the environment from the adverse effects of mercury.[27]	14.1 14.5 14.C
The Paris Agreement (2015)	To"strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius".[28]	14.3

2. Overview of monitoring, evaluation and learning for SDG 14

In this chapter, we set out the formal 2030 Agenda follow-up and review requirements and the systems that are in place at international level. We then examine how MEL can deepen insight and contextual learning to improve adaptive management.

We explore why monitoring is fundamental to generating quality data that can feed into the formal processes; how evaluation can identify strengths, weaknesses, best practices and the value of interventions; and how learning provides guidance for strategic and operational decision making and for adaptive management in particular.

2.1 Formal follow up and review for SDG 14

There are already formal processes to monitor and report on SDG 14 progress. The **HLPF** provides overall strategic oversight of the SDG follow-up and reporting process.[29] Established in 2012, it provides guidance on the follow-up and review of the SDGs and Agenda 2030. The HLPF also carries out several other important tasks, including:

- Providing political leadership, guidance and recommendations for sustainable development
- Enhancing integration of the three dimensions of sustainable development, and
- Providing a dynamic platform for regular dialogue and stocktaking/agenda-setting to advance sustainable development, among other aims.

The Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) was established in 2015 to develop and implement the global indicator framework for the goals and targets of the 2030 Agenda. It is made up of three working groups: Geo-spatial Information, Interlinkages of SDG Statistics to allow for Integrated Analyses in Monitoring, and Statistical Data and Metadata Exchange.[30] IAEG-SDGs identified 'custodian agencies' for the SDGs to ensure comparability of country data, to compute regional and global aggregates, and to provide data to the global SDG indicator database. The United Nations Statistics Division maintains a global database of SDG indicators and produces the annual SDG Progress Report of the Secretary-General.[31]

Each target within the 17 SDGs has its own **custodian agency.** Their role is to work with governments, civil society and other international organisations to collect data for reporting against the SDGs.

The High-Level United Nations Conference to Support the Implementation of Sustainable Development Goal 14 — otherwise known as the **Ocean Conference** — aims to reverse the decline in the health of oceans for people, planet and prosperity by, among other things:

- Identifying ways to support the implementation of SDG 14
- Building on existing successful partnerships to advance implementation of SDG 14 and build new ones
- Encouraging participation from a wide range of stakeholders, and
- Sharing experiences.[32]

At the first conference in 2017, stakeholders registered over 1,400 voluntary commitments and established communities of action on:[33]

- Mangroves, coral reefs, ocean acidification, marine and coastal ecosystems management
- Sustainable fisheries and marine pollution
- A sustainable blue economy
- Scientific knowledge, research, capacity development and transfer of marine technology, and
- The implementation of international law as reflected in the International Convention on the Law of the Sea.[34]

Member states use VNRs — one of the main follow-up and review mechanisms for the 2030 Agenda — to review their progress on and commitments to the SDGs.[35] VNRs can help governments and civil society to assess progress and better understand how to bolster progress towards the SDGs. To be able to report on SDG 14 through VNRs, countries need good data, analysis and documentation of lessons learnt, and for this they must apply appropriate, high-quality MEL practices.

The United Nations Development Group's Guidelines to Support Country Reporting on the SDGs state that all reviews of progress towards the SDGs must be voluntary and country-led.[36] National SDG reviews should comply with six key elements:

1. Fostering mutual accountability

2. Cooperation and collaboration among government agencies and ministries

3. Facilitating comparability across and within countries

4. Opportunities for capacity development

5. Coordination by the national statistical office

6. Inclusive national policy dialogue.

They should also incorporate the core principles of the 2030 Agenda — universality, leaving no-one behind, integration and indivisibility, human rights and national ownership — at each stage of the process.

As a first step towards completing a VNR, countries need to decide on priority national indicators and an indicator framework that links to the 2030 Agenda formal indicators. The framework should incorporate many or most of the agreed global monitoring indicators to ensure there is internationally comparable data for global reporting. Countries should classify their indicators by tier according to the level of methodological development and data available. Mapping and classifying indicators in this way will help to provide an overview of existing national capacities and highlight areas that need to be strengthened. Once they have established indicators and a framework, countries should set baselines for monitoring and evaluation.

The HLPF will establish a network or relevant forums to facilitate the sharing of experiences, successes, challenges, lessons learnt and recommendations relating to progress towards the SDGs.[37] Sound MEL mechanisms and approaches are vital to ensure that nations contribute meaningful and accurate information to this network and to generate useful, credible monitoring data and VNRs that assess progress towards the SDGs.

2.2. What is monitoring, evaluation and learning?

Monitoring, evaluation and learning are the three steps on the path to understanding progress and improving future practices.

Monitoring is a management tool that helps identify problems, informs decision making, enables accountability for performance according to stated expectations and provides a basis for research, evaluation and learning. It is the routine tracking of trends and performance, usually against stated goals and as a continuous activity. A first step in effective monitoring is determining what data are needed. Data collection can be directed or mandated by agreed science and laws or designed to the context through specific indicators that point to an intervention's stated goals and expected targets. Data are collected and analysed to inform indicators, which can focus on outputs, processes or outcomes.[38]

Monitoring helps track progress and indicates whether progress is being made. It can serve as an early-warning alert when things are going wrong or confirm that they are going well. Yet, on their own, monitoring data have limited value for learning.

Evaluation can be independent or self-initiated. Whereas monitoring is a continuous activity, evaluation most often takes place at discrete intervals. Evaluation uses monitoring data, research results and methods, and systematic evidence gathering and analysis to enable judgments about the merit, worth, value or significance of a time-bound intervention — such as humanitarian action, a programme, strategy, policy, award or event — or an existing or evolving situation, service, partnership, institution or system. It starts by assessing an intervention's evaluability (how easy it will be to evaluate) to make sure that monitoring will allow for evaluation and learning.

Evaluation uses monitoring and additional data to assess what is (or is not) being achieved and for whom, and probes into the reasons for and mechanisms behind these results. Evaluators need to collect more data — for example, through interviews, panel discussions or surveys — and to reflect on and make sense of these data.

Evaluation differs from research, as it always deals with values and valuing, with stakeholder questions and real-world situations. It offers 'reality-testing' and learning to facilitate decisions, actions and solutions in the immediate or near future. Evaluation helps us to question and analyse trends, experiences, theories, beliefs and assumptions. Evaluative judgments require understanding of interrelations in complex situations, as well as insights into what, how, why, for whom, under what conditions, when and at what cost change happens.

Evaluation involves critical reflection and sense-making to understand situations and innovate for new and better solutions. It can deepen understanding of complex connections, link the various dimensions of sustainable development and identify interventions, improvements and solutions that can accelerate and transform impact towards SDG 14 and achieve the 'world we want'. Through such insights, evaluation contributes to learning, decision making and action.

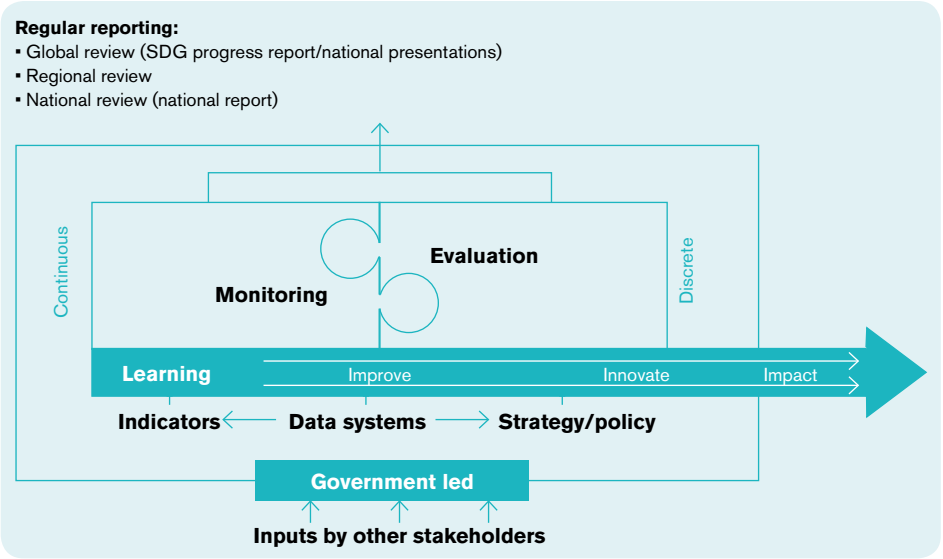
Learning takes place at individual, group, organisational or societal level to enable planning, improvement, strategic and operational decision making and action. Learning occurs when knowledge generated through M&E and available research data are absorbed and lessons are put into practice. At the individual level, learning is critical to bring about behavioural change. Group and organisational learning occur when lessons are applied collectively. This often requires changing rules and processes to bring about system change. Consequently, achieving societal learning and global change requires a wider level of learning followed by collective action, often achieved through a transformative approach and systems change.

2.3 A systems-based approach

Figure 4 provides an overview of how MEL contributes to learning by creating a dynamic system of improvement, innovation and impact. M&E intersect, so monitoring activities inform evaluation processes and vice versa. While monitoring is a continuous process, evaluation is typically a specific initiative. M&E activities will generate learning, which is an ongoing process. When properly incorporated into interventions via feedback loops (see Figure 5), learning can result in improvements in interventions. And if we use learning to develop new processes, it can encourage innovation, which can, in turn, lead to greater impact.

Integrating MEL into the governance and management systems of oceans, rivers, estuaries and coastal areas around the world can help bring about transformative change. By bringing together knowledge, evaluation findings and insights, learning allows us to adapt frameworks, models or processes and accelerate progress.

Figure 4. MEL as a system



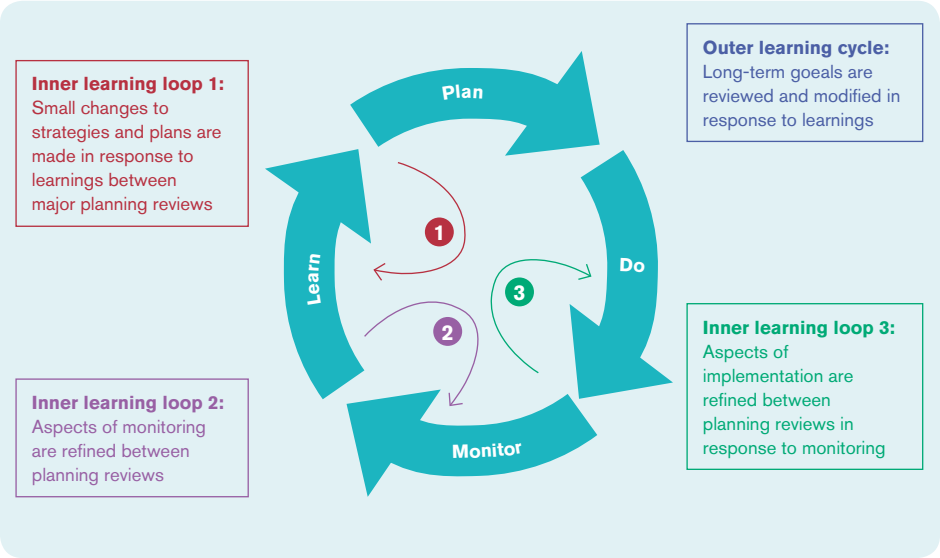
Source: Adapted from UNITAR (2017)[39]

Developing a better understanding of the complex systemic nature of sustainable development and the interventions that aim to achieve the SDGs has led to increasing use of **adaptive management.** This emerging learning process integrates the design, management, monitoring and evaluation of an intervention in a framework that we can use to test assumptions and adapt and learn as an implementation unfolds.[40] Adaptive management is often represented as a cycle of planning, doing, monitoring and learning.

Changes in societies and ecosystems tend to be emergent, evolving over time in largely unpredictable ways. So, it is important to be able to track the implementation of strategies and interventions and/or any related changes as they occur. It is also important to search for patterns that emerge, as they can provide useful information about the types of action that might work well, or not so well.

Adaptive management allows for timely adjustments in policies, strategies or interventions. It helps us see when and what to improve and what we can do to support or accelerate positive developments. It also allows for learning and adaption in the management process. Where necessary, we can modify approaches to respond to a range of influences, including politics, socioeconomics, uncertainty and so on.[42] We can also adjust targets and

Figure 5. Adaptive management cycle



Source: Webb et al. (2017)[41]

indicators through time if they become redundant, irrelevant or are not performing as expected. However, it is imperative that we use any insights for ongoing learning as part of adaptive management processes.

Fisheries science, for example, uses adaptive management. Because of the large degree of uncertainty in ecological dynamics and fisher behaviour, fisheries scientists have to continuously monitor fish stocks and assess dynamics to ensure they are kept at sustainable levels. In years of high abundance, fisheries managers can revise quotas to allow fishermen to catch more fish, while in years of poor recruitment, they can impose limits on how long fishers can fish for, the areas they fish and the gear they use. In extreme cases, they can close fisheries entirely to allow for stock recovery.[5,9,43,44]

2.4 Challenges of SDG 14 MEL

SDG 14 interventions face a wide range of threats and barriers. To increase their likelihood of success, MEL activities for SDG 14 must consider several key challenges. Table 2 will help you help identify the challenges that may arise in your own interventions and consider what actions you may need to take to overcome them. It is not an exhaustive list, so you should think carefully about other challenges that may arise in your specific context or circumstances and how best to address them.

Table 2. Challenges facing MEL for SDG 14

Challenge	Characteristics	SDG 14 approach	Top three MEL considerations
Governance mechanism capacity to respond to dynamic nature of ocean systems	Oceans governance/ management systems often do not consider the complexity of marine ecosystems in an adequate or sufficient manner. Consequently, countries struggle to balance conservation with activities like resource extraction.	Adopt a complex systems-based approach to evaluation.	– Identify which conventions, laws and policies apply and track whether they have been actioned. – Consider the impact of internal politics and governance issues on technical matters. – Understand the level of country ownership among key actors.
Focus on single issues or siloed approaches, rather than systems-level thinking	A focus on single issues, one-off programmes, and siloed approaches ignores the oceans' interconnected nature with other ecosystems and across borders. There needs to be collaborative action from a variety of sectors, stakeholders and governments to achieve change.	Adopt a complex or systems-based approach to evaluation.	– Identify which conventions, laws and policies apply and track whether they have been actioned. – Consider the impact of internal politics and governance issues on technical matters. – Understand the level of country ownership among key actors.
Monitoring design and data-capture bottlenecks	Reliable indicators for monitoring are hard to develop. Levels of data available for indicators are very low. Access to data is difficult due to a lack of information sharing.	Encourage data sharing across countries and sectors. Develop an pen-data platform for access.	– Link with SDG 14 indicators, developing specific indicators for each initiative. – Invest time in designing evaluation frameworks and evaluability assessments. – Always generate baseline data.

Challenge	Characteristics	SDG 14 approach	Top three MEL considerations
Research advances are not translating into practice	There is a lack of evaluative knowledge to act as a bridge between science and policy.	Promote evaluation culture on an international scale. Encourage policymakers to reserve funding for MEL activities.	– Spend time reviewing research data to avoid duplicating work. – Connect to experts in the field to see if emerging data or research are available. – Use research data gaps to focus evaluation effort.
Lack of capacity within LDCs and SIDS	There is a lack of resources and knowledge to conduct MEL of an appropriate quality.	– Capacity building – Citizen science – Participatory and place-based approaches.	– Promote better stakeholder engagement in MEL at the start of initiatives. – Facilitate easier access to resources on MEL for SDG 14.
Political pressure and/ or pressure from competing sectors	The interconnected nature of oceans ecosystems and other sectors results in competing claims — for example, resource extraction versus conservation.	Promote the adoption of national policy for the conservation of oceans and waterways.	– Engage policymakers in evaluation planning. – Promote the use of systems-based approaches to MEL. – Enourage better use of MEL products for advocacy.

3. SDG 14 targets and indicators

In this chapter, we explore how to apply appropriate targets and indicators for MEL of SDG 14. We introduce the individual SDG 14 targets and encourage you to think about how you can apply MEL to your own contexts and priorities.

By the end of this chapter, you will have a good understanding of the current status of each SDG 14 target, including the custodian agencies, current initiatives, examples of good practice and challenges.

You will have new insight into the specific challenges you may face in your unique context and increased awareness of the tools you could use to address them.

We identify and explain the criteria that inform good targets and indicators for MEL purposes. Use the information in this chapter to identify the SDG 14 targets with which your own initiatives, interventions and activities align and then develop appropriate national or intervention-level indicators to monitor progress towards your specific objectives and the wider SDG 14 targets.

3.1 What is a target?

SDG goals and targets hold important guidance from a global perspective. For most local initiatives, you will need to translate the formal SDG 14 targets into locally relevant targets, based on the contexts and needs of your location. Developing appropriate targets is a core part of the evaluation process.

A target is the desired level of performance needed at a specific point in time to achieve a certain goal or one aspect of a goal. Aligning your targets with the overarching goal or vision of your intervention, organisation or group will help you demonstrate progress. In the case of ocean-related initiatives and other SDG initiatives that have an impact on the oceans, you should consider the formal targets and link into these as far as possible. A target that satisfies the criteria we outline in this chapter will have the greatest potential for achieving progress towards the overarching SDG 14 targets.

Box 1. SMART targets

An appropriate target for SDG 14 will link to the formal targets set under the Agenda 2030 processes. At the localised level, targets should be **specific, measurable, attainable, relevant and timely, or SMART.**

A **specific target** clearly identifies where, how, when, with and by whom the target will be achieved. When setting targets, you should investigate the conditions of achieving a target and identify potential challenges or limitations.

A **measurable target** clearly identifies the parameters of success. It is apparent what achieving this target will look like. You can do this by breaking down the target into more measurable elements and providing evidence of their achievement.

An **attainable or achievable target** is one that is feasible within a given context or set of circumstances. A target will not be attainable if the relevant resources to see it achieved — such as money, time, knowledge, skill or capacity — do not exist or are unavailable. An attainable target will have flexibility to adapt to changing circumstances and still achieve an impact.

A target should be relevant to the overall objective, so achieving the target will signify progress towards the overarching goal. A **relevant target** will consider whether it is the most appropriate for a given context.

Lastly, a **timely target** has a deadline for completion. The timeline should be realistic, and where appropriate, flexible. It is important that targets be timely, as a timeframe that is too long will result in the loss of time, money and other resources.

3.2 Targets for SDG 14

SDG 14 consists of ten targets (see Table 3). In this chapter, we summarise each target, examining its current status, specific challenges, indicator and custodian agency. We list important target-specific resources and guiding steps for stakeholder engagement and MEL. Where possible, we provide case studies, examples of good practice and other important considerations for each target. As all contexts differ, it is important to adapt the guidelines in this handbook to reflect the unique circumstances of your country and region.

Table 3. SDG 14 targets

3.3. MEL considerations for SDG 14 targets

Interventions that relate to SDG 14 should be aligned with at least one of the ten 'Life below water' targets and demonstrate progress against the corresponding indicator. You will find a detailed description of good practice MEL applications in relation to SDG 14 in Chapter 4, but here are a few things to keep in mind when reading this chapter:

- **Monitoring:** Activities related to monitoring establish the data against which results are assessed. Monitoring helps establish change and progress. When identifying a target, consider how to focus its monitoring and whether this focus will provide enough proof of accomplishment.
- **Evaluation:** While monitoring targets provides information on the status or condition of an initiative, evaluation takes this process to the next step by exploring why, how, for whom, under what conditions and so on results are being achieved. As well as allowing you to make informed assessments and generate new insights, it can help you understand trends and local results for different people in different contexts.

- **Learning:** Sharing results and learning is as important as identifying results. For this reason, you should consider mechanisms for disseminating results and how to achieve and multiply improvements.

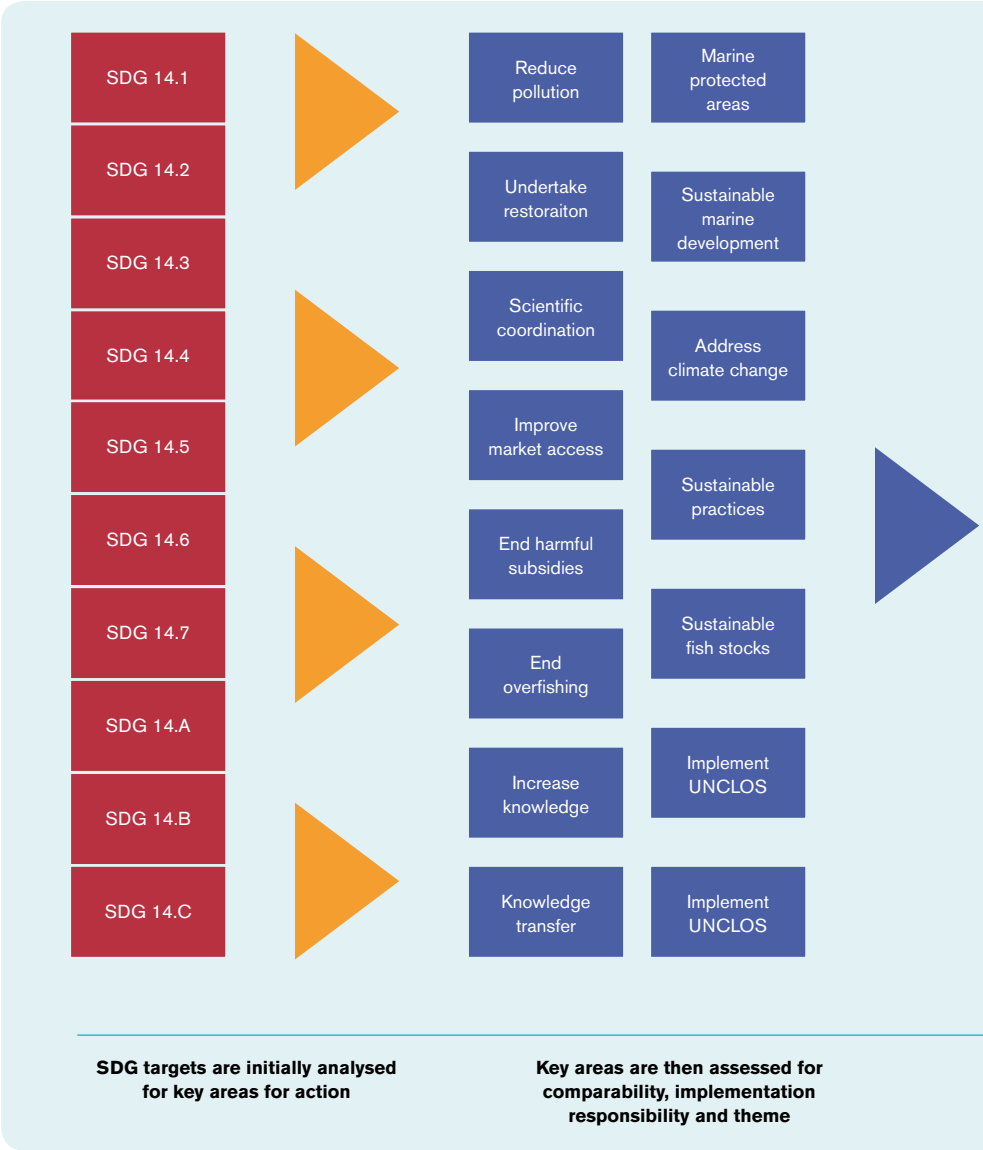
The SDG 14 targets are particularly broad in scope and can be applied at many levels, from global to local. The targets are interconnected and there are inevitable linkages, both in terms of positive combined effects and negative trade-offs when achieving them altogether. For example, increasing marine protected areas (MPAs) not only assists with protecting biodiversity and ensuring healthy oceans, people and economies but it may also rejuvenate fish stocks and help end overfishing, ensuring sustainable and fair fisheries. However, if placed incorrectly, MPAs may displace local fishers or cause short-term economic loss, impacting both groups in different ways.

So, while we list the SDG 14 targets individually, it is desirable to think of them in groups, as many are relevant to each other and can be addressed together. This is especially useful when using SDG 14 targets at the national level for planning and reporting. Conceptually, from a global perspective, we can consider the SDG 14 targets in relation to three key themes:

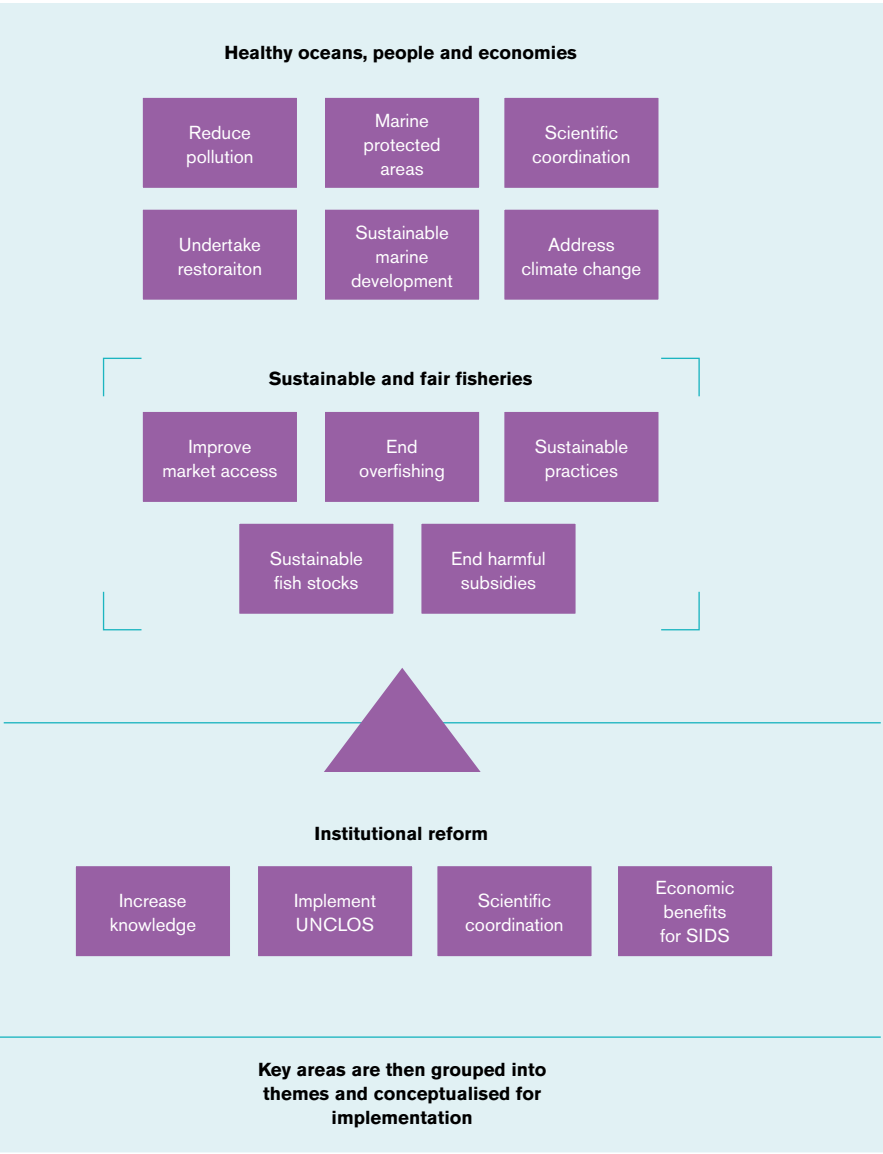
- Healthy oceans, people and economies
- Sustainable and fair fisheries, and
- Institutional reform.

Wherever possible, try to group targets that are concerned within a specific initiative, activity or intervention. Attempting to implement all targets at the same time is extremely complex and challenging. Figure 6 provides an example of how you could group the targets of SDG 14 for use in national planning and implementation of interventions and, consequently, with the MEL of these interventions. If you implement targets independently under separate initiatives, you could miss crucial links and interactions. Carefully thinking through interactions and grouping and conceptualising key policy areas will make it easier to implement MEL and help you establish the link between local interventions and the global SDG 14.

Figure 6. Summarising and grouping SDG 14



Source: Michael Burgass


Healthy oceans, people and economies
Reduce pollution
Marine protected areas
Scientific coordination
Undertake restoraiton
Sustainable marine development
Address climate change
Sustainable and fair fisheries
Improve market access
End overfishing
Sustainable practices
Sustainable fish stocks
End harmful subsidies
Institutional reform
Increase knowledge
Implement UNCLOS
Scientific coordination
Economic benefits for SIDS
Key areas are then grouped into themes and conceptualised for implementation

3.4. Developing indicators for SDG 14

At the global level, each target relating to SDG 14 has formal accompanying indicators to measure progress and/or achievement of results for inputs, processes, outputs, outcomes and impact of interventions.[45] Indicators must be appropriate for the context in which you use them.

Intervention managers and implementers can use indicators to identify the aspects of a MEL initiative that are not performing as expected. Using indicators that are not relevant to your context will prevent progress towards overarching targets and goals. In recent years, there have been huge advances in indicator development across a range of areas in marine science. Notably, the Ocean Health Index (OHI),[46,47] which actively requires selection of meaningful SMART targets, seeks to provide a structured and transparent framework to assess and track ocean health.[48]

Each intervention aimed at achieving a certain target (or set of targets) will need its own set of expected results or outcomes and related indicators to measure achievement of results. From an SDG 14 point of view, you will probably need to substantially tailor many targets to your national or local context to make indicator assignment possible. Indicators should measure change in terms of the progress that the intervention hopes to make. So, when developing your indicators, you must consider several factors to ensure MEL can be done adequately. These include availability of and access to data, resources such as time and money, knowledge and skills, cultural and social practices and values, competing industries and other economic influences.

As well as tracking the formal indicators, you may wish to track your own indicators to help you analyse what is and is not working and why, which would provide a deeper basis for evaluation. Indicator selection and development is not trivial, so you should plan it carefully. If they are to demonstrate accurate and meaningful progress, you must align your indicators to their respective SDG 14 target. Indicators should not become targets without considering the quality of the longer-term outcome. For example, just using the percentage of area protected as an indicator for Target 14.5 will probably drive up the number of protected areas, but it does not mean that they will be adequately managed or located in the right place.

Box 2. Key terms

- **Objective:** A specific goal that a person, system or intervention strives to achieve within a set time-frame and given available resources — for example, to reduce overfishing in SIDS by 30% by 2020.
- **Inputs:** Materials needed to implement an intervention — for example, human resources, financing, machinery, equipment, knowledge and so on.
- **Activities:** The actions that must occur to progress towards the desired objective; what employees must do to see the aims of the intervention realised.
- **Outputs:** The results of an activity, which are typically quantifiable — for example, number of training sessions held or number of attendees at training.
- **Outcomes:** The short- to medium-term results of an intervention that relate to the achievement of its overarching objective — for example, the learning participants gained from a training session and the results of the uptake of that learning in their everyday lives.
- **Impacts:** The long-term results of an intervention, which relate closely to the achievement of the overarching objective — for example, overfishing has declined as participants apply the lessons from training to their everyday lives.

Professor Charles Goodhart of the London School of Economics is famously quoted as saying: "When a measure becomes a target, it ceases to be a good measure." This has become known as Goodhart's law. Considering Goodhart's law and the relationship between targets and indicators is important for evaluation planning. MEL for SDG 14 needs to focus attention on expected qualitative outcomes rather than shorter-term quantitative results. Linking several indicators that demonstrate progress towards the long-term outcomes, often using different sources of information to cross-verify or triangulate data to generate credible progress reports, can help. Considering key indicator characteristics (Box 3) can also help you track the success of interventions.

Box 3. Indicator characteristics

▪ **Meaningful**	Representing important information about the target
▪ **Relevant**	Reflecting the intervention's intended activities, outputs and outcomes
▪ **Direct**	Closely measuring the intended change
▪ **Objective**	With a clear operational definition of what is being measured and what data need to be collected
▪ **Reliable**	Consistently measured across time and different data collectors
▪ **Understandable**	Easy to comprehend and interpret
▪ **Practical/feasible**	Not too burdensome to collect; reasonable in terms of data collection cost, frequency and timeliness for inclusion in decision making

Key tips

✗ DON'T start with the indicator. Work out your context, goals and targets first with your stakeholders (see Section 4.1.3). This will help guide what you need to measure.

✓ DO make sure your indicator is aligned with what you want to measure. If it isn't, it won't tell you anything!

✓ DO define success and failure. Work out the level at which your indicator is meeting your targets or your 'trigger point' for more action if it falls too low.

✓ DO consider counterfactuals. Think conceptually about how your indicator might change without intervention.

✗ DON'T use too many indicators or indices. This can cause confusion. If your targets are well thought through, then two or three indicators should be enough.

✓ DO use qualitative indicators and data. They can be helpful and are often critical for evaluation.

✓ DO measure both actions and outcomes.

✓ DO seek examples of existing and good practice.

Target 14.1
Prevent and significantly reduce marine debris and pollution

Current status: UN Environment defines marine pollution as "the result of deliberate or accidental discharge of untreated wastewater, dumping of solid wastes and other polluted runoff from a variety of land-based activities directly into rivers and coastal waters".[49] As much as 40% of the ocean is estimated to be heavily affected by pollution, with a large amount coming from land-based activities, such as agriculture.[50] Pollution in oceans and waterways has considerable health repercussions for marine and human food systems.[51] On average, there are 13,000 pieces of plastic litter in every square kilometre of ocean.[52]

Challenges: The oceans' natural currents and movements mean that marine pollution is often a transboundary issue that affects areas far from the source of the pollutants, which can be on land or at sea. This means the polluters do not feel the financial, environmental and social burden of pollution. As a result, responsibilities for clean-up operations tend be poorly established.

Monitoring and reporting

Target 14.1	**Indicator 14.1.1**
By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.	Index of coastal eutrophication and floating platic debris density.

Custodian agency: UN Environment

Partner agencies include: IOC-UNESCO, the International Maritime Organisation (IMO) and the FAO. The IMO is responsible for "measures to improve the safety and security of international shipping and to prevent pollution from ships".[53]

UN Environment is responsible for developing methodologies for measuring Target 14.1. Although these were still under development in January 2019, UN Environment has produced a global manual of proxy indicators,[54] developed in line with the regional seas core indicators.[55]

Important resources

- MARPOL[13]
- UNEP (2016) International water quality guidelines for ecosystems[56]
- UN Environment (2018) Global manual on ocean statistics[54]
- Bathing water quality standards (various countries)
- SDG Knowledge Platform[57]
- HLPF on Sustainable Development[29]
- IMO shipping guidelines[58]
- United Nations Ocean Conference concept paper. Partnership dialogue 1: Addressing marine pollution[59]
- IOC webpage on measuring progress on SDG 14 indicators[60]
- Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities.[61] 108 countries have indicated their commitment to it; and over 143 countries have joined 18 regional seas conventions[18] and action plans.[62]

Examples of activities for Target 14.1

UN Environment established the Clean Seas Campaign in 2017 to reduce marine plastic pollution. Over a five-year span, the campaign will engage with governments, the general public and the private sector to address the consumption of non-recoverable and single-use plastics.[63] Since the campaign launch, several nations have pledged to reduce their consumption of plastics. In October 2018, Australia pledged to make 100% of packaging reusable, compostable or recyclable by 2025, to recycle or compost 70% of it by 2025 and to phase out single-use packaging.[64] This commitment makes Australia the 56th nation to join the campaign. The country had already made efforts to phase out single-use plastics: their ban on single-use plastic bags, introduced in July 2018, is estimated to have prevented the introduction of 1.5 billion bags into the environment so far.[65]

In 2016, the eight Arctic nations — Canada, Denmark (Greenland), Finland, Iceland, Norway, Russia, Sweden and the United States — ratified the legally binding Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic.[66] Its key elements include commitments to:

- Provide mutual assistance if an oil spill exceeds one nation's capacity to respond
- Undertake appropriate monitoring activities to identify oil spills in areas within a party's national jurisdiction
- Promote cooperation and coordination among the parties by endeavouring to carry out joint exercises and training
- Promote an exchange of information that could improve the effectiveness of response operations, and
- Conduct a joint review of activities undertaken during a coordinated response operation.

To assist with implementing the agreement, operational guidelines, the country-specific competent national authorites and contact information are included as appendices.

UN Environment has supported efforts to address **coastal eutrophication,** which occurs when excessive nutrients in a body of water from land run-off cause dense plant growth. Its direct effects include concentrations of chlorophyll-a, biomass growth and water clarity/turbidity; its indirect effects include dissolved oxygen levels. UN Environment's global manual suggests measuring nutrient input and concentration to determine the extent of eutrophication.[54] This can be through in situ methodologies — measuring devices, such as continuous plankton recording equipment on ships, moorings and buoys — or by remote sensing via satellite images. In the Philippines, the Global Programme of Action is contributing to local efforts to understand nutrient cycling processes, nutrient enrichment pollution and its environmental consequences, to develop improved practices to address the problem of poor water quality in the Bay of Manila.[67]

Guiding steps for Target 14.1

- Check that the regulations of respective agencies align on marine pollution-control legislation and policies.
- Understand key sources and flows of all pollutant types through river basins and marine systems, particularly across borders.
  - Investigate the impacts of each pollution type (including noise) on biodiversity, fisheries and people to help prioritise action.
- Use internationally accepted water-quality standards if local guidelines are not available (for example, the United States Environmental Protection Agency).[68] Where standards differ, use the most precautionary value.
  - If possible, include a technical specialist, such as an environmental scientist with knowledge and experience of marine pollutants, when designing the M&E system and preparing the evaluation plan.
- Where pollutant sources are generated by private-sector activities and/or shipping, trace the parent company of the relevant private-sector organisation, as well as the pollutant source, as a key stakeholder.
- Check whether risk management processes for major pollutant events have been prepared and are adequately resourced.

Target 14.2
Sustainably manage and protect marine and coastal ecosystems

Current status: Marine and coastal ecosystems are under persistent threat from a range of human pressures, such as fishing, habitat degradation, pollution, climate change and invasive species. Many of these pressures can act alone or in combination and have cumulative impacts. Although often a result of poor management, they can also be a by-product of accessing ocean ecosystem services. Reducing pressures and working to strengthen ecosystem resilience to withstand pressures are important facets of continuing to access the benefits that the oceans provide. National governments are using different frameworks — such as marine spatial planning and ecosystem-based fisheries management — to balance and manage human interactions with the oceans.

Challenges: The term 'sustainably', when linked to managing and protecting marine ecosystems, can involve competing priorities and varying definitions that influence the interpretation of what is required. Competing criteria associated with sustainability can include environmental economic and social priorities. Different disciplines tend to focus on specific dimensions but, to be truly sustainable, management will need to encompass environmental, social and economic sustainability.[69]

Monitoring and reporting

Target 14.2	**Indicator 14.2.1**
By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.	Proportion of national exclusive economic zones managed using ecosystem-based approaches

Custodian agency: UN Environment

Key partner agencies: IOC-UNESCO and the FAO

UN Environment is responsible for developing methodologies for measuring Target 14.2. These were still under development in January 2019,[60] but UN Environment has produced a global manual[54] of proxy indicators, developed in line with the regional seas core indicators.[55]

Important resources

- International Union for Conservation of Nature (IUCN) Red list of threatened species[70]
- European Marine Spatial Planning Platform[71]
- Global Ocean Observing System (GOOS)[72]
- Ocean Health Index Science[73]
- SDG Knowledge Platform[57]
- United Nations Ocean Conference concept paper. Partnership dialogue 2: Managing, protecting, conserving and restoring marine and coastal ecosystems[74]
- A work plan, submitted by UN Environment to IAEG-SDGs and supported by the 18 regional seas conventions[18] and IOC-UNESCO, will develop a standard for the ecosystem-based management of exclusive economic zones to be adopted by regional seas convention members. The regional seas conventions have existing reporting mechanisms that can be used for this indicator. The work plan aims to accrue additional harmonised data to assist with this indicator.
- IOC webpage on measuring progress on SDG 14 indicators[60]

Examples of activities for Target 14.2

Marine spatial planning is a public process for analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that usually have been specified through a political process. Characteristics of marine spatial planning include being ecosystem-based, area-based, integrated, adaptive, strategic and participatory. Used in many countries around the world, it has developed a strong community of practice and guidance through IOC-UNESCO to help with new implementation.

The Global Ocean Observing System is an IOC-UNESCO organisation that focuses on collaboration of data collection efforts and international experts.[72] It also has a capacity-building aspect, so that so countries can join in on data collection. GOOS follows the Framework for Ocean Observing.[75]

The **Antarctic Treaty System,** with 53 signatory countries, regulates international relations with respect to Antarctica. The Protocol on Environmental Protection to the Antarctic Treaty — signed on 4 October 1991 and entered into force on

14 January 1998 — prevents development in Antarctica and provides for the protection of the Antarctic environment through five annexes on marine pollution, fauna and flora, environmental impact assessments, waste management, and protected areas. It prohibits all activities relating to mineral resources, except those that are scientific.

The **Bay of Bengal Large Marine Ecosystem (BoBLME),** comprising Myanmar, Bangladesh, India, Indonesia, Malaysia, the Maldives, Sri Lanka and Thailand,[76] encourages improved regional management of the bay's environment and fisheries. Several issues are causing degradation in the bay: pollution, loss of habitat, reduced water quality and the overexploitation of marine resources.[77] The BoBLME has established working groups on a range of issues, including fish stocks, marine protection areas and pollution. These working groups gather and disseminate data and statistics online. The BoBLME has also conducted a wide range of training and skills improvement activities, promoting the Essential Ecosystem Approach to Fisheries Management training course,[78] launched by the FAO and the US Department of Commerce's National Oceanic and Atmospheric Administration (NOAA).[79]

Guiding steps for Target 14.2

- Identify key ecosystems that provide benefits, such as food, coastal protection, biodiversity, carbon storage, cultural heritage and sense of place.
- Understand their current scope and/or quality compared with the past or an agreed/understood target reference point. Where local data are poor, seek assistance from international datasets and/or agencies.
- Understand the type and level of pressures exerted on ecosystems now and in the future (as a result of climate change) and make robust plans to reduce where possible or sustainably manage them, being sensitive to human wellbeing and livelihoods that may depend on them.
- Where ecosystem quantity and/or quality is below the desired level, carefully plan how to restore it.
  - Look to implement an integrated planning system — for example, using marine spatial planning — that helps to prioritise areas for development, nature conservation and fisheries, and to balance multiple uses.
- Consider impacts on areas outside national jurisdiction, such as the high seas, and seek to work with other countries to ensure their sustainable use.

Target 14.3
Minimise and address the impacts of ocean acidification

Current status: Ocean acidification has increased by some 26% since pre-industrial times. Carbon dioxide emissions have been rising and oceans have been absorbing approximately 25% of the extra emissions,[80] causing chemical changes to seawater. The combination of ocean acidification and other variants in water conditions can lead to significant changes in organism physiology, behaviour and habitat range.[69] Ocean acidification seriously affects calcifying species, including oysters, clams, sea urchins, shallow-water corals, deep-sea corals and calcareous plankton. This could have a large impact on livelihoods and food security in many countries.

Challenges: There have been several international conventions on reducing ocean acidification and improving the management of its impacts. But these agreements are inhibited by national politics and policies relating to climate change, such as the US's planned withdrawal from the Paris Agreement. The extent of impacts of ocean acidification are still relatively unknown,[80] which makes developing management plans and other mitigation strategies difficult.

Monitoring and reporting

Target 14.3 Minimise and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.	**Indicator 14.3.1** Average marine acidity (pH) measured at agreed suite of representative sampling stations
Custodian agency: IOC-UNESCO **Partner agency:** UN Environment IOC-UNESCO has developed a methodology for monitoring and observing ocean acidification and has begun training sessions to explore how best to apply it.[81] In November 2018, IAEG-SDGs updated the indicator for Target 14.3 from Tier 3 to Tier 2.	

Important resources

- Ocean Acidification International Coordination Centre[82]
- The Ocean chapter of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change[83]

- The Monaco ocean acidification action plan[84]
- SDG Knowledge Platform[57]
- United Nations Ocean Conference concept paper. Partnership dialogue 3: Minimizing and addressing ocean acidification[85]
- Global Ocean Acidification Observation Network[86]
- IOC webpage on measuring progress on SDG 14 indicators[60]

Several international agreements aim to directly and indirectly reduce and prevent ocean acidification, including:

- The Honolulu Declaration (2008), which aims to improve management practices surrounding coral reefs and ocean acidification[25]
- The Monaco Declaration (2008), which urges governments to act to reduce carbon emissions and consequent ocean acidification,[87] and
- The Paris Agreement (2016), which seeks to reduce greenhouse gas emissions more broadly, to combat climate change.[28]

There are also several regional research programmes, such as the European Project on Ocean Acidification (2008).[88] Although this research is important, there is a need for more concrete action.

Examples of activities for Target 14.3

Launched in 2011, NOAA's Ocean Acidification Project (OAP) builds relationships between scientists, resource managers, policymakers and the public to research and monitor the effects of changing ocean chemistry on important ecosystems, such as fisheries and coral reefs.[89] The project monitors ocean acidification and conducts research to determine which ecosystems are most sensitive and which marine organisms are particularly susceptible to the resulting change in chemistry. The OAP also has an education and outreach focus to raise awareness and understanding about acidification.

The Global Ocean Acidification Observing Network (GOA-ON) is a collaborative international approach to document the status and progress of ocean acidification in open-ocean, coastal and estuarine environments, to understand the drivers and impacts of ocean acidification on marine ecosystems and to provide spatially and temporally resolved biogeochemical data necessary to optimise modelling for ocean acidification.

The Paris Agreement, under the United Nations Framework Convention on Climate Change, is a key multi-national agreement with 195 signatories committing to reducing carbon emissions, a key driver of ocean acidification.[28] Drastically cutting carbon emissions to at least the levels stipulated in the Paris Agreement would reduce anticipated effects of ocean acidification.

Whiskey Creek Shellfish Hatchery, the largest shellfish hatchery in the US, has suffered devastating losses of production since 2007. It identified acidic waters as the primary cause. Thanks to **research and improvements in hatchery monitoring techniques,** Whiskey Creek has been able to better predict and respond to changes in ocean chemistry and the negative impacts of those changes on shellfish larvae. By using chemical buffers to enhance the carbonate chemical conditions (and raise the pH) of the water in its tanks, the hatchery has prevented further losses, even when the seawater pH in Netart's Bay (where it sources its water) has been low.

Guiding steps for Target 14.3

- Determine and understand key vulnerabilities and impacts of ocean acidification and other climate change impacts related to marine species, habitats, ecosystems and people.
- Establish robust monitoring systems to track the changes in ocean pH and key vulnerabilities identified above.
- Liaise with international scientific experts on climate change projections and predicted impacts to help determine effective prevention.
- Assess and reduce carbon emissions in line with international agreements and work with neighbouring countries through regional initiatives to ensure collective action.
- In particularly vulnerable areas, such as coral reefs, seek to reduce other pressures in line with Target 14.2 and establish protected areas in line with Target 14.5.
- Work with businesses and scientists to explore new technologies and innovations to counter impacts of ocean acidification.

Target 14.4
Restore fish stocks in the shortest time feasible

Current status: Almost 30% of all commercial fish stocks are overfished. In the Mediterranean and Black Seas, this rises to 88%.[90] Illegal, unreported and unregulated (IUU) fishing — which often uses the most destructive methods, including trawling, dynamite or poison — is one of the largest threats facing marine ecosystems.[91] Without proper management, fisheries are not only contributing directly to the mortality of target species, but also affecting ecosystems through the bycatch of non-target species and habitat destruction.

Challenges: Preventing IUU fishing and overfishing requires transboundary cooperation through regional fisheries management organisations and other relevant bodies. Programmes such as the US's Seafood Import Monitoring Program require compliance from a range of different stakeholders.[92] Enforcing such programmes can damage the import economy and raise the price of seafood products. Several national programmes focus on eliminating IUU and overfishing, but there are few regional efforts. Given this target's transboundary nature, nations must work in partnership to achieve it. But while fisheries science has progressed hugely in some areas, data-poor fisheries management remains a major challenge.

Monitoring and reporting

Target 14.4	**Indicator 14.4.1**
By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.	Proportion of fish stocks within biologically sustainable levels.
Custodian agency: FAO	

Important resources

- UN Fish Stocks Agreement[21]
- UNCLOS[14]
- FAO Code of Conduct for Responsible Fisheries[20]

- FAO Voluntary Guidelines for Flag State Performance[93]
- FAO Voluntary Guidelines for Catch Documentation Schemes[94]
- FAO Agreement on Port State Measures[95]
- International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing[96]
- FAO Compliance Agreement[97]
- Marine Stewardship Council (MSC)[98]
- Regional fisheries management organisations
- Sea Around Us Project[99]
- WorldFish[100]
- SDG Knowledge Platform[57]
- United Nations Ocean Conference concept paper. Partnership dialogue 4: Making fisheries sustainable[101]

In January 2018, the US introduced the Seafood Import Monitoring Program to address IUU fishing, which sets out reporting and record-keeping requirements for imports of certain types of seafood. The importer must provide key information, such as harvest and entry points, to determine whether the product has been illegally fished.[92]

Examples of activities for Target 14.4

In southwest Madagascar, social enterprise Blue Ventures has worked with the Vezo nomadic fishing community to reduce the negative impacts of IUU fishing and overfishing. It has established a locally managed marine area (LMMA), governed by a network of fishing villages, known as the Velondriake Network, to restore depleting octopus and other fish stocks. The LMMA uses temporary fishery closures and livelihood alternatives to encourage fish stocks to replenish.[102] The first LMMA was introduced in 2005 and the model has since been adopted elsewhere in the country due to its success.[103]

The Chilean National Benthic Resources Territorial Use Right Fishery (TURF) System manages one of the country's highest-value species, a sea snail called *loco*. Since TURF implementation more than ten years ago, landings have

increased as much as fivefold, the mean size of individual sea snails has increased and catch per unit effort is up. The system has since been expanded to manage dozens more species.[104]

For more than 40 years, Norway and Russia have collectively managed fish stocks in the Barents Sea through the Joint Fisheries Commission, established to enable scientific cooperation, end overfishing and restore fish stocks. While there have been challenges, the main groundfish species' spawning stock biomass has increased threefold over the last 15 years, making the initiative one of the most successful management regimes of a major fishery area in the world. Cooperation between the two countries has been a major factor in its success.[105]

The MSC is an independent non-profit organisation that sets standards for sustainable fishing.[98] Fisheries can apply to the MSC for assessment against science-based standards, to check whether they are well managed and sustainable. An independent team of experts conducts the assessment, which is based on sustainable fish stocks, environmental impact and sound management. Seafood products can display the blue MSC ecolabel only if they can be traced back through the supply chain to a fishery that has been certified as meeting the MSC standard. Around 12% of the global catch is MSC certified and more than 25,000 products are sold with the MSC logo. Fisheries have made over 1,200 improvements to keep their certification.

Guiding steps for Target 14.4

- Fish stocks need to be managed collectively, as they cross multiple borders.
- Determine the status of key fish stocks by forging regional partnerships and using the best available science.
- Where data availability is limited, liaise with international experts in data-poor fisheries assessment.
- Use open-access and best-available science and policy assistance — for example, the Environment Defense Fund's Sustainable Fisheries Toolkit.[106]
- Implement regulations — such as quotas, MPAs, closed areas and gear restrictions — to bring fish stocks back to sustainable levels where overfished.
- Review different types of gear used in fisheries and restrict the most environmentally damaging where possible, while being sensitive to local people and their livelihoods. Encourage and reward switching to more sustainable methods.
- Implement robust management plans for continued sustainable fish stock

management.

- Analyse the extent to which IUU fishing is an issue in your country and region.
- Use appropriate policy levers — for example, stop flags of convenience — following aforementioned FAO guidance, at a range of levels to reduce IUU fishing.
- Always consider the wider environmental and social impacts of fishing activities and seek to minimise these wherever possible.
- Explore the possibility of implementing individual transferable quotas or TURFs, especially where traditional fisheries management techniques are not available or desirable.
- Work alongside fishers and stakeholders at all times to ensure uptake and compliance.
- Encourage working with the MSC to achieve certification for fisheries.

Target 14.5
Conserve 10% of coastal and marine areas

Current status: Global coverage of MPAs is approximately 7.4%. This includes 17.2% of national waters (which make up 39% of global waters) and just 1.18% of the high seas (which make up 31% of global waters).[107] But the area of ocean protected by MPAs is probably much smaller: although many MPAs exist on maps, many of these are 'paper parks', protected on paper, but neither managed nor subject to enforcement in practice.

Challenges: While it is "one thing to draw a line on a map — it is another to effectively design, site, monitor and enforce [MPAs]".[108] These can be poorly sited in areas where there is low conflict with stakeholders but that are also least effective. Others are set up after only considering environmental factors. In these cases, people can be negatively impacted when MPAs displace fishing and cause short-term impacts to livelihoods. This can harm the MPA if people continue to fish there. Balancing these factors remains a key challenge.

Monitoring and reporting

Target 14.5 By 2020, conserve at least 10% of coastal and marine areas, consistent with national and international law and based on the best available scientific information.	**Indicator 14.5.1** Coverage of protected areas in relation to marine areas.
Custodian agency: UN Environment and its World Conservation Monitoring Centre (WCMC) **Partner agency:** Ramsar (the Wetlands Convention)	

Important resources

- Marxan Good Practices Handbook[109]
- IUCN Best practice guidelines for protected areas[110]
- CBD Marine protected area guidance[111]
- SDG Knowledge Platform[57]
- United Nations Ocean Conference concept paper. Partnership dialogue 2: Managing, conserving and restoring marine and coastal ecosystems[74]
- The Global Fishing Watch map to monitor whether MPAs are being complied

with.[112] For example, the Phoenix Islands Protected Area in Kiribati, established in 2015, used the Global Fishing Watch map to detect illegal fishing activity in the Marshall Islands, resulting is a US$1 million fine for the perpetrator.

Examples of activities for Target 14.5

California created a statewide MPA network between 2004 and 2011, based on the planning work of the **Marine Life Protection Act Initiative,** a public–private partnership created to help implement the state's 1999 Marine Life Protection Act. Before this act, less than 3% of California's waters were in MPAs. It now has a network of 124 MPAs that cover 16% of state waters; around three quarters of which are in no-take MPAs. This exceeds the 10% target provided by SDG 14 and CBD. All of California's MPAs are designed pursuant to science guidelines intended to achieve network effects among the MPAs along the state's entire coast.[113]

Stretching over 18% of the EU's land area and almost 6% of its marine territory, Natura 2000 is one of the world's largest coordinated networks of protected areas.[114] Offering a haven to Europe's most valuable and threatened species and habitats, Natura 2000 is a network of core breeding and resting sites and some rare natural habitat types that are protected in their own right. It extends across all 28 EU countries, both on land and at sea. Natura 2000 sites are selected to ensure the long-term survival of species and habitats protected under the EU Birds and Habitats directives. Site selection is based on scientific criteria. The EU State of Nature report says that, although the EU is struggling to meet its biodiversity targets, species and habitats with favourable status trends have benefited greatly from protection through Natura 2000.[115]

Since its launch in 2008, National Geographic's Pristine Seas project has helped protect over five million square kilometres of ocean and created 21 marine reserves.[116] Partnering with several countries, local governments, communities, businesses and not-for-profits, Pristine Seas has encouraged conservation efforts via expeditions to some 27 nations.

The Ramsar Convention was established in 1971 for "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world."[117] Parties implement the convention in their territories and collaborate on shared interventions. In 2005, they confirmed that their vision for the Ramsar List is "to develop and maintain an international network of wetlands which

are important for the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and benefits/services."[118] Today, the Ramsar List is the world's largest network of protected areas. There are over 2,200 Ramsar sites on the territories of 169 parties, covering more than 2.1 million km^2.

Guiding steps for Target 14.5

- Understand how MPAs can most effectively contribute to marine conservation issues. Are they designated to protect biodiversity, aid in fisheries recovery, provide tourist hotspots and so on? Understanding your local context and how MPAs can fit in will be important.
- Seek to plan the location of MPAs in line with key ecological features, such as spawning grounds, migratory routes, and important habitats. Ensure they are ecologically connected.
- Ensure MPA design is efficient to get best results. Seek international expertise from best conservation practices, using programmes such as Marxan.[119] This will help position MPAs where they can be most effective and least contentious.
- Work with stakeholders from the earliest stages to ensure any negative impacts — such as displaced fishers — are accounted for and minimised.
- Produce management plans for different types of MPA to ensure they meet objectives. Different MPAs will probably have different levels of protection.
- Think about long-term planning and funding for staffing, enforcement, restoration and so on.

Target 14.6
Prohibit certain forms of fisheries subsidies that contribute to overcapacity and overfishing

Current status: Fishing subsidies are one of the leading causes of overfishing. They give fleets overcapacity and skew production costs so that fishing operations continue even in situations where they would otherwise not be economically viable.[120] Such subsidies can leave fishing-dependent communities struggling to compete with subsidised rivals, threatening the food security of millions of people as industrial fleets from distant lands deplete their oceanic stocks. Fishing subsidies are estimated at US$35 billion worldwide, US$20 billion of which directly contributes to overfishing.[121]

Challenges: WTO negotiators are aiming for an all-inclusive deal for all maritime WTO member countries and for all fisheries — domestic or international, small or large-scale, in developing or developed country. But this commitment to a single undertaking does not align the incentive to remove subsidies with national interests.[122] Removing subsidies altogether would negatively impact SIDS and LDCs, which do not have the capacity to implement subsidies at national level. So, national governments should be able to determine their own level of commitment and compliance with international subsidy schemes.[123]

Monitoring and reporting

Target 14.6	**Indicator 14.6.1**
By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, and eliminate subsidies that contribute to IUU fishing, and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the WTO fisheries subsidies negotiation.	Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing.
Custodian agency: FAO	

Important resources

- SDG Knowledge Platform[57]
- United Nations Ocean Conference concept paper. Partnership dialogue 4: Making fisheries sustainable[101]
- UNCTAD Regulating fisheries subsidies[121]
- UNCTAD (2017) WTO fisheries subsidies negotiations: main issues and interests of Least Developed Countries[123]
- FAO A fisheries subsidies guide[124]

The WTO has been experiencing increased pressure to remove fisheries subsidies and held a series of meetings with members on 5–9 November 2018 to discuss negotiations for delivering on Target 14.6.[125]

Examples of activities for Target 14.6

The **WTO** has been the leading voice in discussions on prohibiting certain forms of fishery subsidies. Although it has been unable to introduce a ban, it has promised action by the 2019 Ministerial Conference.[126] Several WTO member nations — including the US, Argentina, Australia, Canada, Chile, Colombia, New Zealand, Norway, Papua New Guinea, Peru, Singapore, Switzerland and Uruguay — have expressed support for a ban.[127]

Fishing subsidies in Norway can be traced back to the 1920s. They reached a high point in the early 1980s, when they amounted to at least 70% of the value landed in the fishing industry. The economic crisis of the 1980s provided an impetus for their reform. Despite increasing pressure on stocks, the decision to reform only came when the profitability of key fleet segments felt the impact. A government-stakeholder collaboration undertook a sequential approach to implement a comprehensive structural adaptation with efficiency improvements, which included phasing out harmful subsidies and allocating rights with responsibilities. This modernised the Norwegian fishing industry while maintaining coastal and regional development.

Guiding steps for Target 14.6

- Seek to increase transparency and reporting on fisheries subsidies by:
  - Specifying content of fisheries subsidies notifications to include information about sustainability conditions in affected fisheries and
  - Reviewing fisheries subsidy design, implementation and reform processes and outcomes.
- Maintain and increase active involvement or ask the WTO Secretariat for technical assistance and capacity building assitance, especially in developing countries seeking to undertake subsidy reforms.
- Promote and participate in technical work to develop analysis of key issues, such as fuel subsidies in the fisheries sector.

Target 14.7
Increase economic benefits to SIDS and LDCs

Current status: Small-scale and artisanal fisheries are an essential component of the economies of SIDS and LDCs, employing around 90% of all people working in capture fisheries. Several core livelihoods for SIDS and LDCs — including tourism, aquaculture and other ecosystem services — depend on oceans and waterways. But SIDS and LDCs often lack the financial, human, technical and other resources to truly benefit from the marine environment. Their susceptibility to climate change and natural disasters, as well as the high costs associated with transportation, infrastructure and administration, mean they have reduced opportunity to create economies of scale.

Challenges: Climate change and the expansion of tourism in SIDS and LDCs pose a considerable threat to small-scale and artisanal fisheries as industries compete for resources. Issues with accessing markets, gaps in infrastructure, a lack of investment and an inability to meet international standards also inhibit SIDS and LDCs from realising economic benefits from marine ecosystems and sustainably using resources.[128]

Monitoring and reporting

Target 14.7 By 2030, increase the economic benefits to SIDS and LDCs from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.	**Indicator 14.7.1** Sustainable fisheries as a percentage of GDP in SIDS, LDCs and all countries.
Custodian agency: FAO and UN Environment WCMC	

Important resources

- FAO Voluntary guidelines for securing sustainable small-scale fisheries in the context of food security and poverty eradication[129]
- IUCN Tourism and visitor management in protected areas[130]
- FAO Blue Growth initiative[131]
- SDG Knowledge Platform[57]

- United Nations Ocean Conference concept paper. Partnership dialogue 5: Increasing economic benefits to small island developing states and least developed countries and providing access for small-scale artisanal fishers to marine resources and markets[128]
- WorldFish[100]
- Indian Ocean Commission Regional Fisheries and Aquaculture Strategy (2015–2025), which aims to assist the fisheries and aquaculture sector in member states to achieve their potential in relation to sustainable and equitable growth.[132]

Examples of activities for Target 14.7

The **SIDS Accelerated Modalities of Action** (SAMOA) Pathway,[133] established in 2014 as a result of the Third International SIDS Conference,[134] aims to promote the sustainable development of SIDS through partnerships. The initiative includes a SIDS Action Platform and Partnership Framework,[135] which provides a space to share good practices and lessons learnt and to review progress towards sustainable development.[136]

The Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security was established in 2009 in response to a recognised need to safeguard marine and coastal resources within its six member states: Timor-Leste, Indonesia, Malaysia, the Philippines, Papua New Guinea and the Solomon Islands.[137] The countries work together in several areas, including seascapes, ecosystems approach to fisheries management, MPAs, climate change adaptation and threatened species conservation.

In 2014, the Secretariat of the Pacific Regional Environment Programme (SPREP), the National Geographic Society and the Waitt Foundation announced a partnership to restore oceans and seas through marine resource conservation, with a focus on the sustainable economic development of SIDS in the Pacific. But they have made no further progress to date, despite plans to adopt a Memorandum of Understanding in 2015–2016.[138]

Guiding steps for Target 14.7

- Work with private-sector partners to ensure sustainable investment and growth.
- Promote clean technologies, renewable energy and circular material flows that will reduce waste and promote recycling of materials.

Target 14.A
Increase scientific knowledge, develop research capacity and transfer marine technology

Current status: Marine science is essential to good marine management, especially of anthropogenic pressures. Marine research and technological innovation can help to improve outcomes for the targets of SDG 14.[139] The Transfer of Marine Technology was incorporated into UNCLOS under Part XIV in order to ensure the exploration and exploitation of seabed and areas for developing countries.[140] Part XIV encourages states and international organisations to develop and transfer marine technology on fair and reasonable terms in order to assist developing nations to access benefits from oceans and seas. Innovation in marine technology is necessary to capitalise on ocean wealth in a sustainable manner.

Challenges: As identified in Target 14.7, SIDS' limited financial, technical and human resources limit their capacity to participate in global ocean science systems. So there is a need to build their capacity to conduct marine science research and use technology developments.[141]

Monitoring and reporting

Target 14.A Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account IOC criteria and guidelines on the transfer of marine technology to improve ocean health and enhance the contribution of marine biodiversity to the development of developing countries, in particular, SIDS and LDCs.	**Indicator 14.A.1** Proportion of total research budget allocated to marine technology research.
Custodian agency: IOC-UNESCO **Partner agency:** UN Environment	

Important resources

- IOC (2005) Criteria and guidelines on the transfer of marine technology[142]
- United Nations (2010) Marine scientific research: a revised guide to the implementation of the relevant provision of the United Nations Convention on the law of the Sea[143]

- The Group of Experts of the Regular Process (2016) The first global integrated marine assessment of the regular process for global reporting and assessment of the state of the marine environment, including socioeconomic aspects[144]
- United Nations (2017) The ocean and the Sustainable Development Goals under the 2030 Agenda for Sustainable Development: a technical abstract of the first global integrated marine assessment[145]
- UNESCO (2015) Global Ocean Science Report[10]
- IOC-UNESCO is currently writing a second Global Ocean Science Report, expected to provide baseline information to successfully track progress made in building capacity to reverse the decline of ocean health.[81]
- SDG Knowledge Platform[57]
- SDG Academy One planet — one ocean: from science to solutions[146]
- Ocean Health Index[46]
- United Nations Ocean Conference concept paper. Partnership dialogue 6: Increasing scientific knowledge, and developing research capacity and transfer of marine technology[139]
- IOC webpage on measuring progress on SDG 14 indicators[60]
- Lowndes et al. (2017) Our path to better science in less time using open data science tools: the OHI team share their story and the resources and community that taught and encouraged them.[147]

Several regional and international marine science organisations and institutions conduct research on oceans and seas, including: the GOOS,[66] the World Climate Research Programme, the Joint World Meteorological Organization (WMO)-IOC Technical Commission for Oceanography and Marine Meteorology, WMO Integrated Global Observing System and the Ocean Biogeographic Information System.[148]

Many states have also established national marine policies and institutions that lead country-based research and carry out activities related to marine science.

There is also regular technological transfer through international organisations such as the IOC, the IMO and the FAO. Universities are also regularly involved in research, capacity building and technology transfer.

Examples of activities for Target 14.A

In an effort to encourage knowledge sharing, the **SDG Academy** has created a number of massive open online courses, such as One planet — one ocean: from science to solutions,[137] which explains an integrated understanding of ocean processes and identifies potential solutions for improving management and governance.[149]

The **International Council for the Exploration of the Sea** (ICES) is a global network of more than 5,000 scientists from over 690 marine institutes in 20 member countries. It develops science and provides advice to support the sustainable use of the oceans.[150] Some 1,500 scientists participate in ICES activities each year and strategic partnerships extend its work into the Arctic, Mediterranean Sea, Black Sea and North Pacific Ocean. ICES is committed to building a foundation of science around one key challenge: integrated ecosystem understanding of marine ecosystems. It advances this by coordinating oceanic and coastal monitoring and research and advises international commissions and governments on marine policy and management issues to provide the best available science for decision makers to make informed choices on the sustainable use of the marine environment and ecosystems.

The Global Ocean Observing System is a long-term system for observing the oceans which seeks to improve knowledge on ocean climate and ecosystems, with a focus on anthropogenic impacts and vulnerabilities.[66] GOOS observations and data are readily available online and include a variety of resources, such as strategic mapping, system monitoring status and standards and best practice information.

In 2018, USAID partnered with **Futuristic Aviation and Maritime Enterprise** (FAME)[151] to equip small-scale fishing vessels in the Philippines with monitoring equipment to capture data on catches and improve the safety of fishing crews.[152] This partnership aspires to see technology transfer and build capacity and knowledge within small-scale fisheries in the Philippines. The intervention will run for five years in conjunction with the Southeast Asian Fisheries Development Center.

The Ocean Health Index is a tailorable marine assessment framework to comprehensively and quantitatively evaluate ocean health.[46,153] Assessments using the OHI framework are facilitated by the OHI toolbox, a suite of collaborative, open-source tools and instruction that provides structure for data organisation and storage, data processing and goal modelling.[147,154] The toolbox enables assessments to be transparent, reproducible through access to detailed methods and computational code, and repeatable with the ability to modify methods and computational code.

Guiding steps for Target 14.A

- Look at SDG 14 priorities as a network and determine where the largest and most critical knowledge gaps are located to help direct research efforts.
- Integrate ecological, economic and social scientific research into policy and decision making.
- Form partnerships with other countries and institutions to allow better transfer of knowledge.
- Contribute, work with and seek advice from international organisations, such as ICES.

Target 14.B
Provide access to markets and marine resources for small-scale fishers

Current status: Small-scale fisheries represent a diverse and dynamic set of activities, including traditional low-technology, low-capital methods for fishing, fish processing and marketing, boat building and net making. They tend to be strongly anchored in local communities. Small-scale fisheries make a critical contribution to nutrition, food security, local livelihoods, national economies and poverty alleviation, especially in developing countries. Around the world, 120 million people work directly in commercial capture fisheries: 97% are from developing countries, over 90% are in small scale-fisheries, 47% are women, and 5.8 million earn less than US$1 per day.[155]

Challenges: Developing and expanding global fisheries has led to overfishing of key stocks and widespread habitat destruction. Customary practices for allocating and sharing resource benefits in small-scale fisheries — which have often been in place for many decades — have been altered as a result of centralised and non-participatory fisheries management systems, rapid technological developments and demographic changes. Small-scale fishing communities often have little say in decision making and are powerless in conflicts with large-scale fishing operations. Interdependence or competition is increasingly high between small-scale fisheries and other sectors with stronger political or economic influence, such as tourism, aquaculture, agriculture, energy, mining, industry and infrastructure development.

Monitoring and reporting

Target 14.B	**Indicator 14.B.1**
Provide access for small-scale artisanal fishers to marine resources and markets.	Progress by countries in the degree of application of a legal/regulatory/ policy/ institutional framework which recognises and protects access rights for small-scale fisheries.
Custodian agency: FAO	

Important resources

- FAO (2015) Voluntary guidelines for securing sustainable small-scale fisheries in the context of food security and poverty eradication[129]
- International collective in support of fishworkers[156]

- SDG Knowledge Platform[57]
- United Nations Ocean Conference concept paper. Partnership dialogue 5: Increasing economic benefits to small island developing states and least developed countries and providing access for small-scale artisanal fishers to marine resources and markets[128]

Examples of activities for Target 14.B

In 2015, the government of the **Philippines** announced an **investment programme** for agricultural and fisheries production to boost rural incomes and rebuild fishing and farming communities in the wake of **Typhoon Haiyan Yolanda.**[157] Investments include building fish landing centres, which will improve access to safe fisheries products and provide fishery skills training.

Lobsters form the income base of the local economy in the **Sian Ka'an Biosphere Reserve** in Mexico's Quintana Roo state. The two associated cooperatives that manage lobster fishing here involve all their members in resource management decision making. Capacity building has strengthened local technology and practices, facilitating the responsible and equitable management of lobsters. This approach has achieved a drastic decrease in illegal and environmentally destructive fishing practices; the introduction of well-defined, secure and dispersed lobster fields, improving the survival of the local lobster population; the practice of capturing live lobsters and releasing young lobsters and eggs; and the replacement of palm-tree lobster traps with concrete cabins, reducing the local use of this endangered palm species.

The **Cananéia Oyster Producers' Cooperative (COOPEROSTRA)** in Mandira (São Paulo, Brazil) was created during the 1990s. As well as conserving local mangrove forests and their high biodiversity, the cooperative helped the community establish new rules and practices to reconcile oyster harvesting. Members are allowed three harvests a year and, since forming the cooperative, have received twice as much for their oysters as they received from market intermediaries. Before the cooperative was established, these intermediaries dominated the oyster market chain and paid little attention to local regulations, sanitation and health standards for shellfish processing. The success of the cooperative has meant that Mandira's oysters have enhanced the appreciation of artisanal production and the availability of high-quality local seafood has encouraged tourism.

The UN Industrial Development Organization (UNIDO) collaborated with the **Standards and Trade Development Facility** to develop an intervention to improve market access for small-scale fisheries in West Africa, including Côte d'Ivoire, Guinea, Mauritania and Senegal. A core focus was to improve hygiene and food safety to boost the development of artisanal fisheries and encourage new investments and access to international markets.[158] In 2017, UNIDO hosted an economic forum in Rome to provide West African companies with the opportunity to improve their knowledge of best practices, particularly the Italian cooperative model.[159] The forum provided technical assistance on international standards and value chains to improve small-scale fisheries' access to international markets. In 2018, UNIDO announced that high-level representatives from West African fishery ministries and experts on WTO sanitary and phytosanitary agreements were forming a steering committee to help artisanal fisheries gain access to international markets.[160]

Guiding steps for Target 14.B

- Survey the range and scope of artisanal fishers to understand what they are catching, why they are catching it and the social and economic benefits of artisanal fishing.
- Work with artisanal fishers to understand their wants and needs and implement policy drivers to enable and protect their access rights and ability to fish.
- Seek to implement the FAO's Voluntary guidelines for securing sustainable small-scale fisheries.[129]
- Ensure small-scale fishers and associated fish workers can, do and actively contribute to decision making.
- Formulate cooperatives to strengthen fishers' market access and control.

Target 14.C
Implement international law on the conservation and sustainable use of oceans and their resources

Current status: UNCLOS sets out the legal framework for all activities in the oceans and seas and is of strategic importance as the basis for national, regional and global action and cooperation in the marine sector. UNCLOS has 168 parties, including the EU, but is considered in most of its provision to be customary international law. It is complemented by the 1995 UN Fish Stocks Agreement[21] and the Agreement relating to the implementation of Part XI of UNCLOS.[161] Several other specialised international treaties and agreements also supplement UNCLOS by directly or indirectly providing measures for the conservation and sustainable use of marine biodiversity, aiming to prevent and reduce the degradation of the oceans and associated ecosystems as a result of rising anthropogenic pressures.

Challenges: Increasing membership of UNCLOS and all the relevant conventions is a key challenge to implementing international law on the conservation and sustainable use of oceans and their resources. For party states, issues pertaining to implementation and strict compliance with the treaties can reduce the effectiveness of international agreements. A coordinated approach to implementing all the instruments is essential. In particular, countries lacking appropriate infrastructure, technical capacity and resources can often struggle to implement international agreements.

Monitoring and reporting

Target 14.C	**Indicator 14.C.1**
Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want.	Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the UNCLOS, for the conservation and sustainable use of the oceans and their resources.
Custodian agency: UN Division for Ocean Affairs and Law of the Sea (UN-DOALOS), FAO, UN Environment, International Labour Organization and UN-Oceans agencies	

Important resources

- Revised guide to the implementation of the relevant provisions of UNCLOS[143]
- SDG Knowledge Platform[57]
- United Nations Ocean Conference concept paper. Partnership dialogue 7: Enhancing the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea : Enhancing the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea[162]
- UN-Oceans website[163]
- UN-Oceans inventory of mandates, priorities and activities[164]

The United Nations General Assembly has convened an intergovernmental conference on an international legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction.[165] Globally, there has been increased participation in UNCLOS and its implementing agreements. As a legal framework, UNCLOS provides for the adoption of rules, regulations and other standards for the effective implementation of its provisions.

Several organisations have developed manuals and other guides highlighting the relationship between documents developed under their ambit and UNCLOS provisions — for example, the IMO's Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organization[166] and the International Hydrographic Organisation's Manual on Technical Aspects of the UNCLOS – 1982.[167]

Examples of activities for Target 14.BC

UN-Oceans is the UN inter-agency mechanism for cooperation and coordination on oceans and coastal issues.[163] It has 24 members, including competent international organisations as, identified in UNCLOS, specialised agencies, UN programmes, regional commissions, secretariats of conventions and the International Seabed Authority. Its mandate includes strengthening and promoting the coordination and coherence of UN system activities related to ocean and coastal areas.[168]

In 2015, UN-Oceans launched a searchable online inventory of mandates and priorities approved by the respective governing bodies of participating organisations of UN-Oceans members, as well as of current and planned activities. This is the first step towards identifying possible areas for collaboration and synergies, as mandated in the UN-Oceans terms of reference. The inventory is expected to help member states and other stakeholders identify opportunities for synergies and greater coherence, as well as potential support available from other UN-Oceans members to help them implement relevant instruments. The inventory is available as an online searchable platform, which can be accessed by all member states and other users at the UN-Oceans website.[163]

UN-Oceans' voluntary commitment at the 2017 UN Ocean Conference focuses on raising awareness of relevant regulatory and policy frameworks and its members' activities in support of their implementation, the 2030 Agenda and the 2030 Agenda and relevant SDGs at major intergovernmental meetings.[169] This initiative aims to strengthen cooperation among members and provide information on ocean-related international regulatory and policy frameworks to the widest number of stakeholders, to ensure they are aware of legal instruments and policy outcomes relevant to SDG 14 and other ocean-related goals and targets of the 2030 Agenda. Implementing the UN-Oceans voluntary commitment will also inform members about available opportunities for increasing capacity to implement relevant instruments and commitments more effectively and fully.

UN-DOALOS provides a wide range of services to states and intergovernmental organisations.[170] Its technical cooperation services to member states include providing information, advice and assistance to promote better understanding and wider acceptance, uniform and consistent application, and effective implementation of UNCLOS and the UN Fish Stocks Agreement. It helps member states derive benefits from the international legal regime for the oceans, as provided in these legal instruments, focusing on building up the capacities of states — developing states in particular — to develop human resources, institutional infrastructure and legal and technical skills. On request, it helps states implement the provisions of UNCLOS and apply its implementing agreements. It also runs two fellowship programmes: the Hamilton Shirley Amerasinghe Memorial Fellowship on the Law of the Sea and the UN-Nippon Foundation Fellowship and Alumni Programme. UN-DOALOS also administers several voluntary trust funds. The Legal Counsel/Division for Ocean Affairs and the Law of the Sea is the focal point for UN-Oceans.

Outside UN-Oceans, UN-DOALOS cooperates with UN agencies, international intergovernmental organisations and entities at the subregional, regional and global levels, particularly the IMO, FAO, IOC-UNESCO, UN Environment, the CBD Secretariat, regional fisheries bodies and IPBES.

Cooperation between regional seas conventions[18] and action plans[62] and regional fisheries bodies has helped advance ecosystem approaches and led to agreements, such as the collective arrangement between the Commission for the Protection of the Marine Environment of the North-East Atlantic and the North-East Atlantic Fisheries Commission, and the memorandum of understanding between the Mediterranean Action Plan and the General Fisheries Commission for the Mediterranean.

Guiding steps for Target 14.C

- Fully implement UNCLOS and demonstrate how it is being applied in practice.
- Identify roadblocks or pinch-points where UNCLOS application is failing. Seek from partners or provide the necessary technological, financial or developmental support to do this.

SDG 14 targets and indicators: a Pacific case study

The Pacific Island Countries and Territories (PICTs) are especially vulnerable to the environmental, social and economic challenges that come with living as small populations in vast surrounding ocean areas. Environmental degradation, climate change and disasters threaten Pacific economies, livelihoods and cultures. Some island communities are already moving or making plans to relocate in response to these pressures. The Pacific Islands are collaborating to make sure that the MEL initiatives for the region are tackling the most important issues and priority initiatives.

The Pacific region has been proactive in developing frameworks and regional strategies to address SDG 14-related issues, including:

- A regional roadmap for sustainable Pacific fisheries (2015–2025)[171]
- A new song for coastal fisheries: pathways to change[172]
- The Pacific Islands Regional Ocean Policy (2002)[173]
- Framework for a Pacific Oceanscape (2010)[174]
- Framework for Nature Conservation and Protected Areas in the Pacific Islands Region (2014–2020)[175]
- Sub-regional strategies such as the Melanesian Spearhead Group Roadmap for Inshore Fisheries, 2015–2024 and the Micronesia Challenge.[176]
- The Framework for Pacific Regionalism (2014),[177] and
- Forum leaders' 2017 endorsement of the Blue Pacific identity as the core driver of collective action to advance this vision.[178]

These frameworks and strategies, along with international commitments such as the SDGs,[57] SAMOA Pathway,[133] Aichi targets[183] and the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries,[129] have contributed to an increase in MEL activity and capacity.

Each year, the Pacific Islands Forum of Fisheries Agency presents a tuna fishery report card and a coastal fishery report card to regional Fisheries Ministers and Pacific Island Forum Leaders (heads of state) to measure progress. There is a harmonised regionally agreed set of indicators for overlapping areas or shared waters.[171]

The Pacific Islands Protected Area Portal collates information on protected areas, maintained by the SPREP with partners and countries. The portal includes a running count of the number and coverage of protected areas in the region across 22 PICTs, along with details of each protected area including World Database on Protected Areas Identifiers,[179] IUCN category, designation, name and country. The current count is 346 MPAs covering 2,161,088 km^2.[180]

The Pacific Climate Change Portal includes country profiles for 22 PICTs, summarising available climate-science information and projections and national governance, policies and priorities relating to climate change.[181] Many Pacific countries are parties to the CBD, which requires signatories to monitor progress on environmental goals through national biodiversity strategy and action plans. UN Environment reports periodic progress towards the Aichi biodiversity targets in Asia and the Pacific, monitoring aquatic resources, ecosystems that are vulnerable to climate change, protected areas, ecosystem services, knowledge sharing and other metrics.[182] Despite these successes, poor data availability, poor collaboration among stakeholders, low funding and low political and public interest has limited the management and implementation of MEL tools.[183] Institutionalising MEL into regular ministry and departmental operations has also been challenging, due to limited capacity, data availability and the perception that MEL is an external requirement for donor-funded interventions. Other challenges — such as the diverse and geographically disparate communities and stakeholders, and having to coordinate methodologies — hinder the implementation of national-level MEL in the region.

4. Implementing monitoring, evaluation and learning for SDG 14

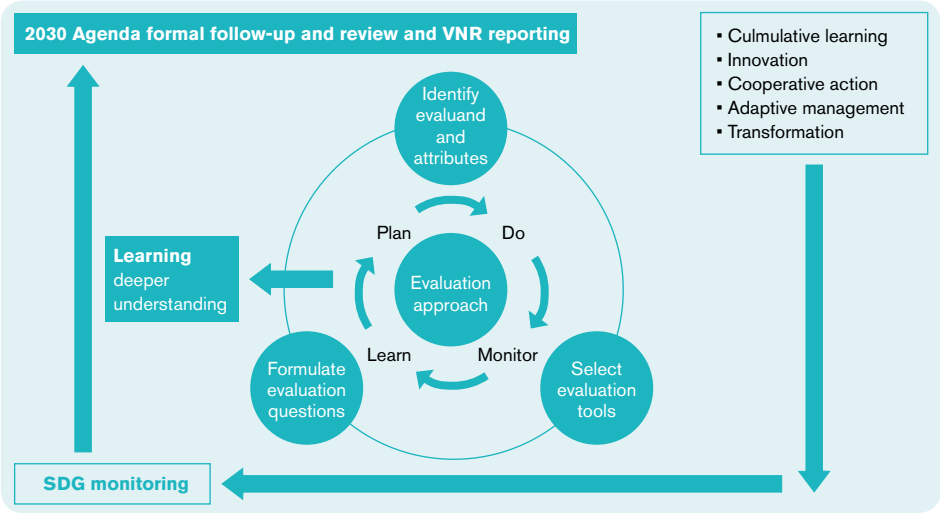
In this chapter, we explain the need to go beyond monitoring to develop an evaluation approach that considers the specific focus of an evaluation, the key evaluation questions to be explored and the evaluation tools available.

You should consult this chapter when designing and implementing your own MEL initiatives for SDG 14. It includes good practices that would apply to every MEL intervention and discusses different options for evaluation questions, criteria and useful tools, with a caveat that you should tailor each MEL process to its specific context.

In Chapter 2, we saw why monitoring and reporting for the 2030 Agenda is important. Here, we explore how monitoring data feed into the evaluation approach, which contributes learning to the 2030 Agenda formal follow-up and review process. It is only by building understanding of the results of monitoring and reports that we can help improve action to achieve the level of transformation needed to achieve the SDGs.

Figure 7 illustrates how MEL should contribute to the formal follow-up and review of the SDGs at the national level and to the acceleration cycle to achieve transformation.

Figure 7. MEL in the transformation cycle



Source: Adapted from Watts et al. (2017)[184]

4.1 Good practices for MEL

MEL will be planned and implemented differently depending on scale and geography. Considering MEL at the design stage of an intervention is crucial. If you do not plan it in from the start, the indicators used may not be able to tell you anything about the successes and weaknesses of the intervention, because they will not be easily measurable or evaluable. Also, the way in which you apply MEL can determine the scale of benefits. MEL for SDG 14 requires a strong foundation that acknowledges the complexity of the ocean environment and the systems that surround it. Consequently, it is important that all MEL approaches consider context, ownership engagement, inclusion and integration.

1. **Context:** Context requires that you adapt MEL mechanisms to the realities of your country and situation. Contextual factors that may impact on the success of an initiative can include:

    - Local level factors: communities, livelihoods, local laws and catchments
    - National level factors: politics, institutional capacity, availability and level of technology, resources, social and cultural practices
    - Regional level factors: transboundary issues, such as pollution, which comes from one place and ends up in another, governance, coordination of efforts, data and information sharing, and
    - International level factors: safeguarding sovereignty, international commitments, such as conventions, laws, policies and power asymmetries between countries.

2. **Ownership:** Tied in with the discussion of contextualisation is the issue of national ownership. Countries with a high level of understanding and ownership of the issues associated with SDG 14 are more likely to engage with the MEL process. Factors that impact on national ownership for SDG 14-related MEL include:

    - The transboundary nature of oceans: There is an undeniable need to escape working in silos and establish international collaboration to achieve the SDG 14 targets.

- Developing relevant targets and indicators for measuring progress: The SDG 14 indicators and targets are important, but you should use them as guidance in setting your own agenda that works for you while still contributing to global goals.

- Engaging countries in partnerships towards SDG 14 without politics and power dynamics coming into play: Because members of political groupings are responsible for decision making and negotiating, the way you report on the SDGs is also determined by those political bodies. So, it is important to engage with these power balances to overcome them by investing in stakeholder engagement.

3. **Engagement:** It is important that national, regional and local stakeholders are given the opportunity to help design and implement MEL activities. For SDG 14, this is particularly important because of the need to contextualise MEL initiatives. Each country will have different leaderships and organisations involved in SDG 14-related activities and several actors with responsibilities and capacities for data collection and analysis. Undertaking the following will ensure your engagement with stakeholders is both meaningful and productive:

   - Stakeholder mapping: Have you identified and contacted all the actors in your area or region? This stage also provides the opportunity to capture the actions stakeholders are engaged in that contribute to SDG 14.

   - Engagement between and with countries: Internal stakeholder engagement will make sure policies and implementation are aligned. Engagement between countries will address any transboundary issues and build capacity in nations that have less vigorous forms of analysis.

   - Participatory processes: During all MEL activities to engage local stakeholders, you should be mindful of the ways in which you ask participants to contribute. Language, literacy and cultural norms can affect participation. For example, you should hold stakeholder engagement activities in the local language and make sure approaches for engaging with local populations are place-based and participatory to ensure inclusivity.

Guiding steps for engagement

Engagement with stakeholders should emphasise the need to build capacity in a variety of contexts, as this will translate into fairer and more equitable benefit sharing. Key considerations for engaging with stakeholders include:

- **Conducting stakeholder analysis** to identify the key stakeholders, their roles, responsibilities, capacities, potential conflicts and the best way to engage with them. It is crucial to engage with all relevant stakeholders; holding consultations with just one group will not be beneficial.
- **Developing a stakeholder engagement strategy** to categorise stakeholders with an understanding of the different groups and how you will consult them.
- **Stakeholder engagement methodology** to ensure stakeholders are on board with the MEL process. The methodology you choose to engage with stakeholders should take into consideration their capacity — for example, literacy levels, availability of technology and so on — and may differ between stakeholder groups.
- **Stakeholder coordination** to establish platforms for dialogue, such as multi-stakeholder committees to bring together stakeholders from the private sector, civil society, government, academia, local communities and so on. During this process, it is important to consider power imbalances and ensure that all voices are heard.

While the participation and engagement of stakeholders is important for data collection, it can also have a significant contributing effect on analysis and interpretation of findings. You can gain valuable contextual perspectives from engaging stakeholders and confirm the validity of data. Most importantly, engaging stakeholders in making sense of the collected data can provide a greater channel for ownership and understanding of the conclusions reached.

4. **Inclusion:** MEL for SDG 14 respects the ownership and rich input brought about by inclusive, legitimate processes that aim to co-create knowledge, insights, methodologies and tools. Involving local stakeholders through participatory approaches will generate more holistic data. The benefits of participatory approaches in MEL include:

- Generating a more holistic understanding of an issue or situation: Incorporating social, cultural and economic information into what is predominately scientific data is crucial for greater reliability of results and for generating a more in-depth understanding of a situation.
- Improved likelihood of support for MEL activities: Engaging with local populations, particularly through bottom-up approaches, is essential to the longevity and success of interventions.
- Aligning with the principle of 'leaving no one behind': Being left behind refers to being "unable to fully participate in or benefit from human development, innovation, economic growth or globalization".[185] Overwhelmingly, the people who are most likely to be left behind are the poor and marginalised. Greater inclusion in MEL helps to ensure that the voices of these individuals are heard.

5. **Integration:** MEL for SDG 14 engages with the practical implications of interconnectedness that is inherent in ecosystems and social-ecological understandings of the world — including interactions between the SDGs and between interventions. Effective MEL approaches to interconnectedness require:
   - A high-degree of attention to synergies and trade-offs
   - Consideration and knowledge of leverage points
   - Co-evolution
   - Adaptation
   - Resilience and
   - Responsiveness to contexts and cultures.

MEL for SDG 14 is connected to intervention planning, design and implementation, and with capacity strengthening in managing SDG 14-linked interventions. It bridges scientific and governance regimes, and integrates qualitative and quantitative approaches and data — as well as knowledge — across sector, disciplinary, stakeholder and geographic boundaries.

Adopting a systems-based approach is a key way of incorporating integration and interconnectedness into MEL. Section 4.3 has more information on what constitutes a systems-based approach and how to use one.

4.2 Monitoring

Monitoring is the routine measurement and tracking of trends and performance against stated goals. Appropriate monitoring processes are essential to track interventions. It should be an ongoing process so the data generated can be analysed over time.

Sound monitoring at the implementation stage allows you to report back on the aspects of an intervention that are working well or less well, so you can identify and quickly resolve issues, to prevent minor problems from developing into larger ones. There are several ways to carry out monitoring; the key is identifying what you need to be monitor.

What do you need to measure?

A fundamental step in monitoring is knowing what needs to be measured and why. In Chapter 3, you became familiar with the targets and indicators for SDG 14, which provide the required measurements for reporting on SDG 14 progress at the global scale. In this chapter, we recognise that, for certain interventions, you may need to develop sub-indicators that feed into the existing ones. This chapter provides further information on how you should develop these sub-indicators and how they can contribute to monitoring SDG 14 interventions.

It is important to define in advance the information that could contribute to decision making. Use the following questions to define your indicators:

- What information would enable planners and implementers to avoid losing opportunities for change?
- What kind of information is most suitable to track the intended results and impacts of your intervention?
- Who will gather and analyse the information, and how?

Given the difficulty of gathering new data, development interventions can fall into the habit of gathering the most accessible data, either because it is more easily available or more likely to give ‘good news’. This has limited value, as it simply duplicates what you already know. Instead, you should develop a smaller number of indicators to track information about what you do not know, which you can then use for decision making.

Box 4. Going beyond measurement

Interventions that work towards achieving SDG 14 may not align exactly with the formal targets and indicators for 'Life below water'.

For example, SDG Target 14.1 aims to prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities — including marine debris and nutrient pollution — by 2025. However, the corresponding indicator for this target (14.1.1) calls for an index of coastal eutrophication and floating plastic debris density.

So, while the target specifies reducing all kinds of pollution, the index measures only eutrophication and floating plastic. Therefore, the indicator would not pick up interventions to reduce chemical or noise pollution, which would contribute to the overall goal.

Similarly, a local stakeholder may wish to carry out a solid-waste management intervention to reduce the introduction of plastic debris into the ocean. Again, this intervention would contribute to the target, but cannot be directly measured by the SDG 14 indicator, because they cannot measure the density of floating plastic debris. Instead, they could measure the volume of plastics collected and recycled. The intervention would still be important to the target, and reporting on its contribution to the overall goal would generate lessons learnt and accelerate progress. Limiting measurements to the formal SDG 14 targets runs the risk of not achieving the full potential of an intervention.

Good monitoring practice

When determining how best to monitor progress, you should consider:

1. **Data accessibility:** This handbook advocates for open data sharing in relation to the targets and indicators for SDG 14. Funding bodies, governments, multilateral organisations, international finance institutions and other key development partners should share data between them. It is impossible to determine which monitoring mechanisms are feasible if we do not make evidence of them operational to achieve consistent and reliable data.
2. You will need a **monitoring plan** to identify and plan the resources for the M&E actions. This should cover how monitoring will occur and who will be responsible for collecting, analysing, reporting and communicating the data.

3. You must **embed** the monitoring plan **into management processes** and incorporate reporting into management decision making.

4. **Data collection** and monitoring methods should be feasible in the given timeframes and flexible enough to allow for adaptation in the face of unforeseen challenges and issues.

5. **Data capture and aggregation:** This handbook advocates for open access to data and widespread knowledge sharing. However, there are issues associated with collating data from a range of sources through a variety of collection techniques. For example, local-level data may not be appropriate to aggregate to a national level. It is important to establish ways to generalise data to country and even to regions. Wherever possible, you should triangulate data by cross-analysing different data sources for more reliable analysis and results.

6. **Capacity building:** For national monitoring, you will need to consider the capacity of national agencies, such as statistics departments and other data-related institutions. Nations with limited data collection and monitoring capacity should use local populations to perform these activities, capitalising on their grassroots knowledge. Stakeholder engagement will ensure that monitoring activities are feasible and appropriate for a given context and you can elicit local knowledge as part of the MEL process.

7. **Appropriate mechanisms:** Monitoring mechanisms should be culturally appropriate and developed in consultation with a wide range of stakeholders. Make sure you train local staff in crucial data collection systems and databases so you do not lose knowledge once an intervention ends, financing runs out or an organisation ceases operation.

8. **Data sharing:** You can adopt and adapt data collection methods and monitoring techniques according to your context. Sharing data enables governments and national bodies to make informed decisions about which monitoring processes are the most cost effective and appropriate in different contexts. This can save time and money, as you will not have to develop new systems if you can use existing ones that have yielded accurate and timely data and results. When regions collaborate to monitor progress towards the SDGs, nations will need to share knowledge. While there is considerable funding for data and research into oceans and waterways, there is little coordination for sharing data. Sectors and government ministries will also need to improve their data sharing — for example, the fisheries sector could interact with agriculture to collect and monitor data on marine pollution from run-off and non-point source pollution.

Box 5. Using citizen science

Engaging citizens in direct data generation is a growing opportunity for monitoring. This could be tacit data gathering — for example, recording vessels entering a specific ocean reserve — or using citizen science to engage stakeholders who have a vested interest in learning more about the process they are engaged in.

The latter is particularly relevant in SIDS, where artisanal and small-scale fisheries make up a large part of the economies, and societies and local populations have a rich understanding of marine and associated ecosystems. Thousands of people who have signed up to dolphin-watch apps are tracking dolphin behaviour. The apps collect GPS data of dolphins' location, photographs and real-time input from observers, who have been trained to use the app. Data from citizens and app users can be incorporated into monitoring systems via participatory and inclusive stakeholder engagement and consultation.

When a monitoring system has a participatory design, primary data collectors understand how to collect quality data and how their data contributes to a whole dataset. They are also often interested in the results and in a prime position to make positive changes in their own locality.

Guiding steps for monitoring activities

- Identify what needs to be measured, acknowledging that not all interventions will align perfectly with SDG 14 targets and indicators.
- If necessary, refer to Chapter 3 for information on how to develop relevant sub-indicators to effectively measure specific issues and their contribution to SDG 14.
- Consider what data relating to the intervention are easily accessible and what insights they may offer in terms of the most feasible monitoring mechanisms.
- Develop a monitoring plan that outlines when/how regularly and how you will monitor relevant activities and how you will use the data.
- Your monitoring plan should include a network of key stakeholders to encourage the generation of feedback and lessons learnt on monitoring activities.

- Consult with stakeholders to determine culturally appropriate data collection mechanisms and capitalise on grassroots knowledge.
- Embed the monitoring plan into management and decision making.
- Capture data using feasible monitoring mechanisms and aggregate with careful consideration, noting that it will not always be appropriate to aggregate local data to national level and vice versa.
- Use national agencies to collect and analyse data where feasible to build capacity.
- Encourage open data sharing to promote widespread learning and knowledge transfer.

4.3 Evaluation

Evaluation encourages a results-based approach to interventions, programmes, policies and institutions. Promoting accountability, transparency and good governance, it is an important process that enables greater understanding of complex interrelationships and can probe into difficult-to-answer questions that monitoring does not immediately answer.

4.3.1 Choosing your evaluation approach

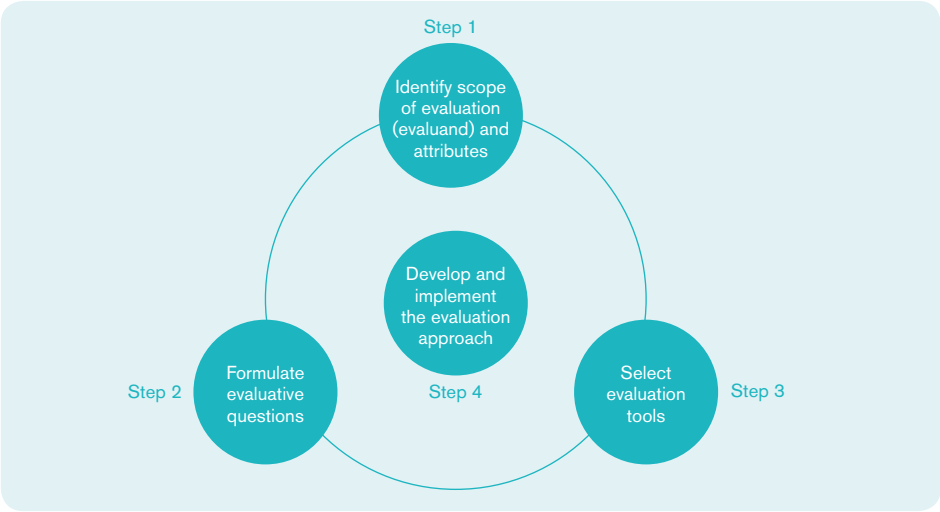
Evaluation is the systematic, critical analysis or assessment of an initiative, intervention, programme, policy or institution's achievements, results and so on. There can be many reasons for conducting an evaluation. You may want to determine the relevance and fulfillment of the objectives, development efficiency, effectiveness, impact and sustainability of an intervention, programme, policy or institution. Or you may want to track and gain insights into development pathways, policies and programmes, assess an institution or policy, or learn about a particular evaluation question that can contribute to critical decision making.

An **evaluation approach** refers primarily to the methodology used to conduct an evaluation,[186] which is also determined by the **scope and subject of an evaluation** (the evaluand), the specific questions and criteria to be addressed and the realities of available resources and capacity.

An evaluation should provide information that is credible and useful. As we have already discussed, you should incorporate lessons learnt from the evaluation into your decision making.[187]

Figure 8 shows the four main steps you need to take when determining your overarching evaluation approach to MEL.

Figure 8. Evaluation approach: four main steps



Adapted from: Stern et al. (2012)[188]

Guiding steps for choosing your evaluation approach

Your evaluation approach is based on the unique combination of Steps 1–4, developed according to:

- The scope of your evaluation (the evaluand) (Step 1)
- The key questions agreed by the stakeholders (Step 2)
- The most appropriate mix of evaluation tools (Step 3) and
- A realistic plan with an assessment of the resources and timescale that are practical for implementing your evaluation approach (Step 4).

Once you have decided your evaluation approach and formulated an evaluation plan, the learning generated from these activities will contribute important insight and information to formal SDG follow-up and review processes. Feeding the learning back into the evaluation approach will also allow an intervention to grow from past experiences.

Step 1: Identifying the evaluand

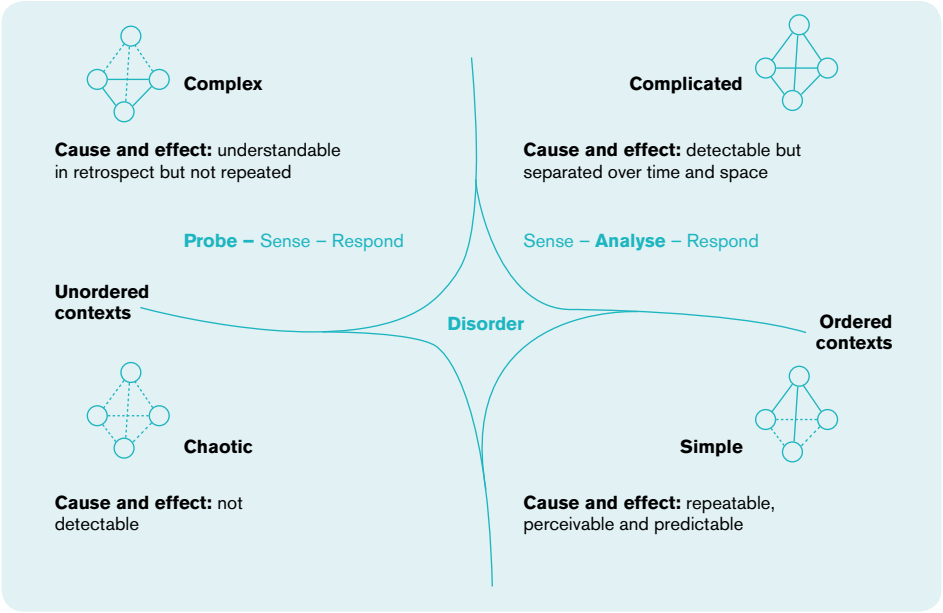
Be clear about what you are evaluating: Evaluation builds evidence from the monitoring data generated to track different interventions, related to the expected outcomes identified or that have emerged from an initiative. An evaluation usually focuses on a specific initiative, organisation or theme. To generate credible and meaningful findings, you need to clearly define the subject of your evaluation. This includes defining the boundaries of what you will and will not include in your evaluation. The following questions can help you do this:

- What are you evaluating? A policy? An intervention or portfolio of interventions, such as an implemented strategy, project(s) or programme(s)? An organisation, institutional system (for example, a legal or financial system), infrastructure, partnerships or other forms of relationship, such as networks or coalitions?
- Does the evaluation focus on a specific investment or initiative?
- If it is an initiative, what is its lifespan? For example, does it cover three, five or ten years?
- If it is an organisation, are you evaluating all departments or only one?
- Is your evaluation confined to a certain country, region or locality?
- What partners, networks or relationships are engaged in the evaluation?

The **Cynefin Framework** (Figure 9) is widely used in evaluation processes to help identify different elements of the evaluand and incorporate them appropriately into the evaluation approach and its related methods. Identifying the elements of an evaluand in this way will help you consider the ways that cause and effect operate in each system and identify the best approach for your evaluation. The framework is a quadrant that highlights the differences between situations that are simple, complex, complicated and chaotic.

- **Simple** refers to a discrete action and basic cause-and-effect progression.
- **Complicated** refers to an undertaking that requires multiple, separate actions to achieve a goal. However, cause and effect are still mostly unilateral. Complicated activities or interventions are often replicable, but inter-linkages may cause different outcomes.

Figure 9. The Cynefin Framework



Source: Kurtz and Snowden (2003)[189]

- **Complex** refers to an undertaking in which multiple forces and factors are at play that may influence the success of the outcome and in which actions can have wider and unexpected consequences that must be acknowledged. Such interventions may require corresponding sub-activities. Complex interventions are rarely replicable and depend strongly on the local context.

- **Chaotic** refers to events or circumstances where multiple actions may not subsequently act upon each other. These situations are unique and not replicable. Causal pathways are not predictable.

Determining whether the evaluand is simple, complicated, complex or chaotic can help you to decide what kind of evaluation questions, tools and criteria are best suited to evaluate it. Once you have defined the evaluand and clarified what you need to measure and within what boundaries, you should formulate key evaluation questions to help you clarify the objectives of the evaluation and the relationship to SDG 14.

Step 2: Formulating evaluation questions and identifying appropriate criteria

Defining your evaluation questions: Your evaluation should answer your key evaluation questions, which you will need to generate in consultation with stakeholders whose interests are connected to the specific evaluand. Your key evaluation questions can be quite simple — for example, "Has this initiative in coastal protection achieved the expected level of performance?" More detailed evaluation questions may be more difficult to answer and may probe deeply into qualitative aspects of an initiative — for example "Has the performance of coastal protection differed across different locations? If so, to what extent and why?"

The evaluation questions will go beyond monitoring data, not only to enable an assessment, but to provide insights that can inform the assessment and help develop new knowledge about a situation. For example, a monitoring report may be able to tell you how many local stakeholders have been actively engaged in coastal protection measures. But an evaluation may ask what the key factors are that led local stakeholders to actively engage in coastal protection measures.

A lead organisation will often develop the evaluation questions to gain an insight into deeper aspects of an intervention so it can report on success factors and challenges. This information may influence decision making about future allocation of resources or encourage the replication of learning or the adoption of new designs or approaches to achieve more transformational outcomes.

You need to establish your evaluation questions at the start of an evaluation process and agree on them with the key stakeholders that are likely to use the evaluation's findings and recommendations. Evaluation findings are often meant to be used to improve future policies, strategies, institutions or interventions, so it is important to get these questions right from the start. Questions must also be realistic given the level of data, time and resources available.

Once you have determined the evaluation questions, you should think about the evaluation criteria you will use as the basis of the assessment. Evaluation criteria provide the basis for evaluative judgments and make explicit the qualities used to determine whether something is good, successful, effective, useful and so on.

Box 6. Common evaluation criteria

The OECD-Development Assistance Committee's (DAC) evaluation network developed one of the most commonly used sets of evaluation criteria, known as the DAC criteria. They are:

Relevance: The extent to which a development intervention's objectives are consistent with the intended beneficiaries' needs, country needs and priorities, regional or global priorities, and/or the policies and priorities of key stakeholders, such as development partners and donors.[190] A relevant initiative will have a strong results framework that can clearly demonstrate the programme logic and any causal relationships. A relevant initiative is feasible and considers the given timeline, available resources and capacity.

Effectiveness: The extent to which the intervention's objectives were achieved, or are expected to be achieved, considering their relative importance. It is also sometimes used as an aggregate measure of (or judgment about) the merit or worth of an action — that is, the extent to which an intervention has attained, or is expected to attain, its major relevant objectives. An assessment of effectiveness will ideally determine influences on success (or failure) and whether risks or constraints to implementation were effectively identified and addressed.

Efficiency: A measure of how economically resources/inputs — such as funds, expertise and time — are converted to results. Efficiency measures qualitative and quantitative outputs in relation to inputs. It is an economic term that means using the least costly resources possible to achieve the desired results. This generally requires comparing alternative approaches to achieving the same outputs, to see whether the most efficient process has been adopted. It is important to consider how money was spent in relation to the benefit the expenditure generated. It also assesses timeliness, whether the initiative experienced any delays or setbacks, and if so, to what extent these were overcome.

Impact: The positive and negative changes produced by a development intervention, directly or indirectly, intended or unintended. This involves the main effecst activities have on local social, economic, environmental and other development indicators. We should examine both intended and unintended results and must also include the positive and negative impact of external factors, such as changes in terms of trade and financial conditions.[191]

Sustainability: The longevity of programme benefits and the likelihood of an initiative receiving ongoing support or being scaled up or extended to other areas. Sustainability is one of the most problematic criteria to assess because different interventions will have different intentions in relation to sustainability. For example, one could aim to sustain an increase in the invertebrate population and the other, the operations of an institution. So, to assess sustainability, you must first include a definition of how sustainability has been, or is being, conceived in relation to the evaluand.

Many development banks and international organisations use these five criteria. It is useful when interventions use these or similar criteria, as they provide a universally accepted framework for evaluation. Using the DAC criteria enables comparison between initiatives and allows us to share lessons learnt across intervention or country boundaries.

OECD is exploring how to adapt the DAC criteria to become more responsive to the 2030 Agenda; it expects to release updated criteria soon that respond more to the aim for transformational action and the SDG 17 approach to partnerships and synergy.[192] It is also important to emphasise that you should not apply these criteria mechanically. Instead, you should carefully consider how you will address each relevant criterion in an evaluation approach. You may have to adopt alternative or additional criteria, such as those we outline in the next section.

Additional criteria in the context of SDG 14

Depending on which type of evaluation you are conducting, you may emphasise certain criteria and explore others in less detail. You could also add other criteria that reflect the systems-based nature of SDG 14 interactions.

Given the growing emphasis on systems-based approaches, criteria such as **coherence** (the assessment of which can help accelerate impact) and responsiveness or adaptability have become important focal points. This will ensure that changes in strategy can be adopted by implementers during the time of the intervention, as lessons are learnt about what is or is not working well.

Transformation, a central tenet of the 2030 Agenda, is increasingly included in complex evaluations as a criteria for assessment. 'Transformative change' in this context refers to large-scale positive changes in systems that dramatically accelerate or shift the development trajectory of a society, country or region, their ecosystem(s) or the planet as a whole. You can determine whether transformation has occurred as a result of an intervention by identifying paradigm shifts, radical change, transitions and deep shifts in power structures.[193]

For evaluation approaches to consider these more systems-based criteria, MEL practices should draw on **systems thinking** and **complexity science** in efforts to understand, assess and improve progress and performance towards desired impacts related to SDG 14 and the goals to which interventions are linked.

Using these more advanced criteria is perhaps the most effective means of recognising and tracing the holistic and integrated approach SDG 14 needs to achieve transformative change. However, such an approach is not always feasible

and will depend largely on country capacity. Countries and agencies can take a strategic and systematic approach by embedding learning- and accountability-oriented evaluation into national policies and development plans in support of the SDGs. This requires the building or refining of appropriate national-level monitoring and evaluation systems that can help authorities assess whether their national plans and policies are delivering — or likely to deliver — transformative change in line with the spirit and intent of the SDGs.

Step 3: Evaluation types and tools

Evaluation types

There are several popular evaluation types and tools. Table 4 outlines some of the most common categories. For a brief overview of a range of other evaluation tools, see BetterEvaluation.[194]

Table 4. Types of evaluation

Evaluation type	When to use	What it shows	Why it is useful
Formative evalutation Evaluability assessment Needs assessment	During the development of a new programme When an existing programme is being modified or is being used in a new setting or with a new population	Whether the proposed programme elements are likely to be needed, understood and accepted by the population you want to reach The extent to which an evaluation is possible, based on the goals and objectives	Allows for modifications to be made to the plan before full implemetnation begins Maximises the likelihood that the prgramme will succeed
Process evaluation	As soon as programme implementation begins During operation of an existing programme	How well the programme is working The extent to which the programme is being implemented as designed Whether the programme is accessible and acceptable to its target population	Provides an early warning for any problems that may occur Allows programmes to monitor how well their programme plans and activities are working
Outcome evaluation Objectives-based evaluation	After the programme has made contact with as least one person or group in the target population	The degree to which the programme is having an effect on the target population's behaviours	Tells whether the programme is being effective in meeting objectives
Economic evaluation Cost analysis Cost-effectiveness evaluation Cost-benefit analysis Cost-utility analysis	At the beginning of a programme During the operation of an existing programme	What resources are being used in a programme and their costs (direct and indirect) compared to outcomes	Provides programme managers and funders with a way to assess cost relative to effects ('bang for your buck')

Evaluation type	When to use	What it shows	Why it is useful
Impact evaluation	During the operation of an existing programme at appropriate intervals At the end of a programme	The degree to which the programme meets its ultimate goal	Provides evidence for use in policy and funding decisions
Systems-based evaluation	At the beginning of a programme On an ongoing basis	Acknowledges the multiple contexts, goals and stakeholders in SDG 14	Helps tract interrelated aspoects of a programme and builds understanding of causaloty, success factors and constraints in complex situations

Source: Based on National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention[195]

Use a **systems-based approach** in situations where you 'know' the system — that is, where you have adequate baseline data on interconnected systems. A systems-based evaluation is well suited to the marine environment because considerable interconnections between marine and other ecosystems mean they are impacted by a range of interrelated environmental, social, economic and governance processes. You can use **systems-based evaluations** to conduct more intricate assessments of progress towards SDG 14. Perhaps the most significant threats to marine ecosystems are increasing anthropogenic pressure — from climate change and linked practices, such as farming — and unsustainable resource use, such as overfishing. Social and economic activities, such as tourism, are also becoming increasingly unsustainable and harming the health of marine ecosystems. Given the interconnected nature of marine environments, such impacts are also affecting humans, other species and other ecosystems.

Evaluation tools

Once you have determined which type (or combination of types) of evaluation is/are most appropriate to your intervention, you should consider which tools to use to conduct the evaluation. A wide range of options is available and many real-world evaluations use a variety of evaluation tools. But this can be complicated and may require a multi-disciplinary team, comprising subject specialists as well as evaluators. Getting advice from an experienced evaluator to help design the methodology can help minimise costs in the longer run by streamlining the design to target the most critical questions and selecting the most appropriate and cost-effective tools to achieve the best results with the resources available. We will now explore some of the most commonly used frameworks and planning tools.

Well-developed MEL systems or processes are typically based on a clear understanding about what the intervention intends to achieve. Logic models are among the most common tools used in the development sector to define results and explain how the activities of an intervention are expected to contribute to short- and long-term change. Although they are mostly planning tools that aim to elucidate the thinking of intervention designers, you can also use logic models to assess the design, performance and progress towards targets.

However, if you use them uncritically as the main framework of assessment, these tools can often misrepresent realities. Logic models can lead to confusing linear pathways to change. This can happen when the designers of an intervention imagine these pathways alone, without considering the complex combination of cause-and-effect relationships that are needed to bring about change in sustainable development.

In this section, we introduce two logic-model approaches — the **logical framework approach** (LFA) and the **theory of change** (ToC) — and a commonly-used environmental management tool, the **pressure-state-response** (PSR) model. We discuss the potential benefits and drawbacks of these models.

1. Logical framework approach: For the purposes of this handbook, you would generate an LFA to develop a basis for thinking about MEL before implementing an activity or initiative. This process helps to clarify objectives and expected positive results for the long term — that is, impact. LFAs set out the desired inputs, processes, outputs, outcomes and impact of an initiative to track it through a monitoring system.

You can use LFAs (see Figure 10) to develop indicators at each phase of the intervention. They are also useful for identifying risks and assumptions that could reduce the intervention's likelihood of success if not addressed in a timely and appropriate manner.

While LFAs are often used in development, part of the evaluation community has criticised the approach in this context. As a linear and one-dimensional tool, LFAs should only serve as a visual aid to support logical thinking, rather than as an intervention design that represents reality. If you are interested in understanding more about the potential benefits and drawbacks of this approach, the Ministry of Foreign Affairs of Japan commissioned a useful critique of LFA.[196]

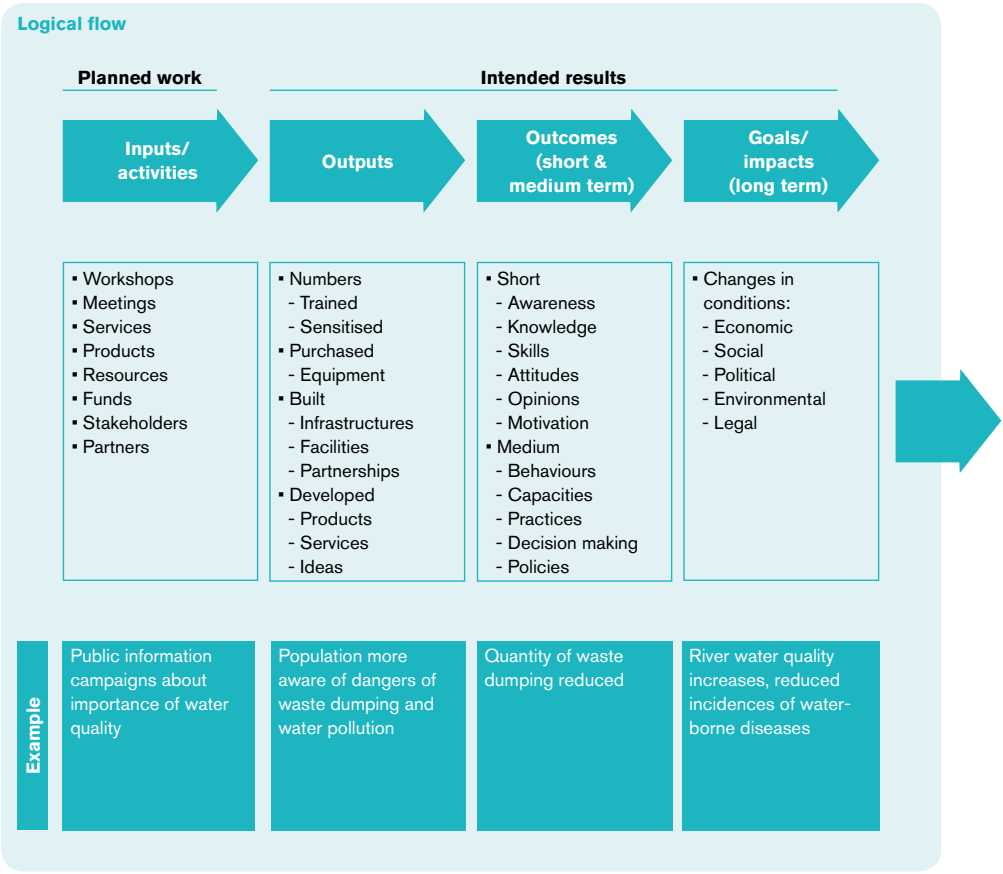
2. Theory of change: A ToC is a more sophisticated version of an LFA. It gives you a narrative or visual idea of how change is assumed to happen, which you can then at least partly test during an evaluation. This is useful in an evaluation because you can track progress against the anticipated outcomes and impacts identified in the ToC. Most importantly, it helps to deepen thinking about the underlying assumptions on which the logic of change is based. It is important to search the literature for ways of thinking and evidence that can support your ToC to make sure it is not only based on the perceptions of stakeholders involved in the planning.

Figure 11 shows an example of a ToC. But remember, each ToC is different, and you will need to develop a separate one for each intervention.

Increasingly, interventions are designed based on a ToC, which greatly assists with evaluability. But many interventions do not have a clearly defined ToC. In these cases, evaluations can retrospectively develop a ToC based on the expectations of the intervention at design and where the current intervention has reached, to help in tracking progress towards the targets.

ToCs have several benefits. You can use them to explore a wider range of relationships, influences, pathways, assumptions and risks. They also emphasise feedback loops (see Section 2.3) and allow you to explore how and why change happens in greater detail. However, linear ToCs are not appropriate for systems-based evaluations, which require thinking about feedback and interactions. See the Centre of Excellence for Development Impact and Learning's resources for references — for example, on the technical challenges linked with representing ToCs.[198]

Figure 10. Logical framework approach example



3. PSR model: The ToC approach has some similarities to the widely used PSR model you may be familiar with (Figure 12). PSR and the extended driver-pressure-state-impact-response (DPSIR) model are commonly used environmental management tools that highlight the causes of, or contributing factors to, a problem or issue; its impact on an ecosystem, society or the environment; and the means of resolving or reducing that impact.

You can use an LFA, ToC or PSR model at an intervention's design and planning stage to develop a monitoring plan. Using these or similar tools you can identify and monitor the key inputs, activities and outputs that are necessary to achieve

Logical framework

Objective summary	Objective verifiable indicators	Means of verification	Important assumptions
Having achieved this goal Water quality increases, reduced disease	Confirmed using this (these) impact indicator(s)	Which are collected by the means	Then as long as these assumptions are true, I should achieve the goal
Having achieved this (these) outcome(s) Waste dumping reduced	Confirmed using this (these) outcome(s)	Which are collected by this means	Then as long as these assumptions are true, I should achieve the goal
Having achieved this (these) output(s) Population more aware	Confirmed using this (these) outout(s)	Which are collected by this means	Then as long as these assumptions are true, I should achieve the outcomes
These actitivies are done Public campaigns	And I will know they are done because I can measure using these input and process indicators	And find the parameters by this means	Then as long as these assumptions are true, I should achieve the relevant output

Outcome to goal

Output to outcomes

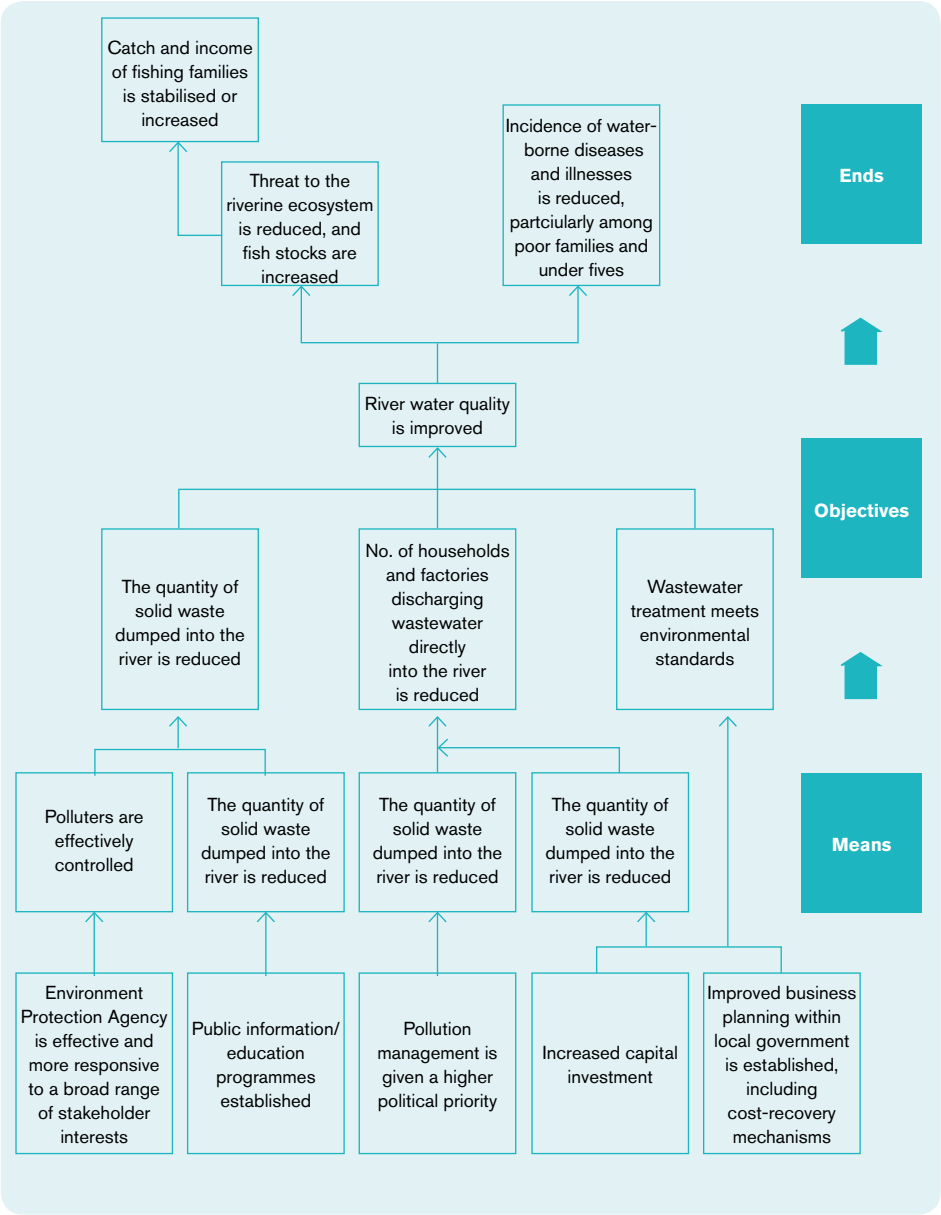
Activity to output

Source: Beauchamp, adapted from https://wedc-knowledge.lboro.ac.uk/resources/booklets/G006-The-Logical-Framework-booklet.pdf https://www.pm4dev.com/resources/manuals-and-guidelines/94-project-cycle-management-and-logical-framework-toolkit-%E2%80%93-equal/file.html

overarching short-, medium- and long-term outcomes. This process should establish a list of the resources, actions and results you will need to achieve the intervention outcomes or medium-term results, establishing what you will need to monitor to ensure the intervention is on track.

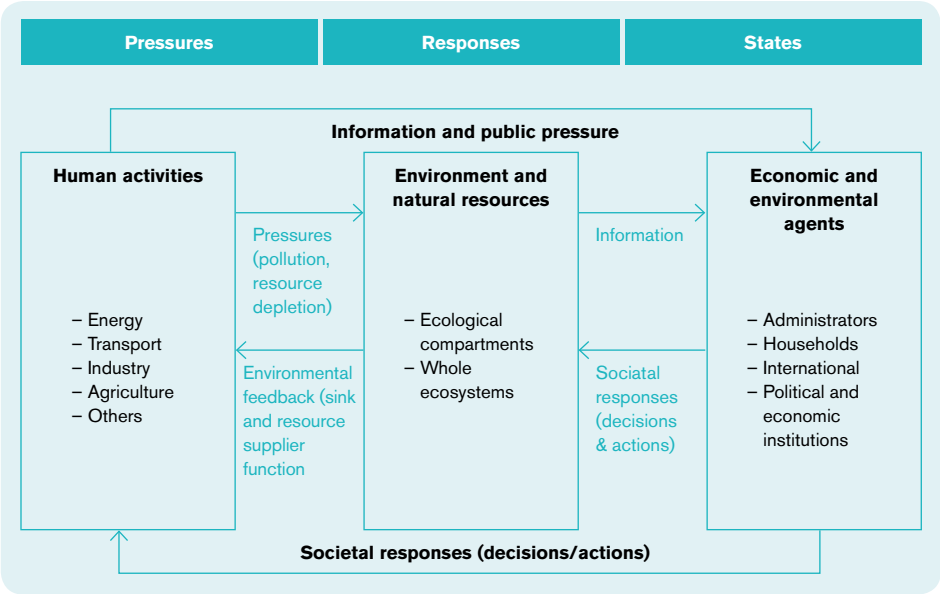
Many real-world evaluations end up using a mix of evaluation tools. Do not hesitate to seek advice from an evaluation professional to guide your decision making at this stage.

Figure 11. Example of a linear ToC



Source: Sustainable Sanitation and Water Management[197]

Figure 12. PSR model example



Source: Hardi and Pinter (1995)[199]

Once you have determined which evaluation types and tools are the most appropriate for your intervention, use this information — together with your defined evaluand, evaluation questions and selected criteria — to develop your evaluation approach.

Step 4: Developing an evaluation plan

Now you have determined your approach, you can develop your evaluation plan. The Rainbow Framework (Figure 13) is one example of an evaluation plan, where evaluations follow a step-by-step process. It clearly sets out the processes or tasks required to conduct an evaluation.

You may choose to conduct your evaluation in-house or commission external evaluators. This will depend on the purpose of the evaluation, the degree of independence required, as well as the scope and complexity of the evaluation.

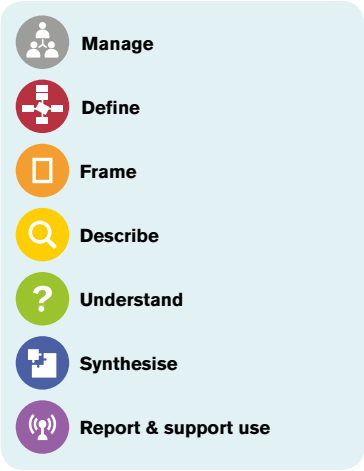
Guiding steps for evaluation activities

- The scope of your evaluation (the evaluand) (Step 1)

- Clearly identify your evaluand and define your evaluation questions. Defining evaluation questions is important, as they are the vehicle that will take your reporting process beyond monitoring data.

- Consider the purpose of your evaluation:
  What are you trying to achieve?
  What questions are you trying to answer?
  Use these questions to determine which type of evaluation is the most suited to providing the answers.

Figure 13. The Rainbow Framework



Source: Better evaluation[200]

- Once you have identified the appropriate type of evaluation (or combination of types), determine which approach and related methodology is most appropriate. To do this, you should consider:
  - What the intervention was trying to achieve
  - How contextual factors (complexity) may impact on the evaluability
  - At what stage of the project life cycle you are doing the evaluation, and
  - What you will use the evaluation for.

- Use the Cynefin Framework to help address these considerations, by helping to understand which initiative — or parts of your initiative — you can see as simple, complicated, complex and/or chaotic.

- After defining your approach, determine the pertinent evaluation criteria. These should reflect the values you and other key stakeholders hold and provide the basis for evaluative judgments on whether things are good, successful, effective, useful and so on. The DAC criteria (Box 6) can be useful in this regard, but do not use it as a set you should mechanically apply.

4.4 Learning

Generating lessons learnt is a crucial part of any effort to design, manage or implement for impact. Learning takes place at individual, group, organisational or societal level and is done in order to plan, budget, improve and make strategic and operational decisions and take action.

Learning takes the key findings and considerations from monitoring and evaluation and generates knowledge, which we can use to build capacity for future programmes. Learning processes ensure that we capture knowledge and disseminate it to the relevant stakeholders. Building and sharing knowledge encourages the constant improvement of M&E practices and helps ensure we use good practice and identify and effectively mitigate potential challenges.

Incorporating MEL into initiatives: It is important to consider how we can incorporate MEL into interventions for SDG 14. The benefits of MEL to achieving SDG 14 will be long term, but will also require short-term sacrifices. So, it will be important to clearly demonstrate the potential long-term gains to stakeholders and to maintain effective communication with key stakeholder groups. Leveraging linkages with other SDGs will help counter powerful economic arguments. Many of the SDG 14 targets require regional and international cooperation and the timely and relevant communication of information will be critical to establishing a multi-country approach to MEL for SDG 14. Clearly delineating responsibilities at regional, international and, in particular, country level will be important, both for active intervention and advocacy.

Accelerating progress through systems thinking

Progress towards SDG 14 is a precondition to the success of a variety of other goals, such as halting biodiversity loss (SDG 15), reducing poverty (SDG 1) and ending hunger (SDG 2).[43] The 2030 Agenda highlighted that the SDGs are interconnected and that success depends on how well stakeholders can carry out interventions in parallel and/or sequence to make sure that the resulting changes reinforce rather than hinder or counter each another.

Acquainting yourself with the notion of **systems thinking** will enhance your MEL practices. Systems thinking means considering how the different elements of a system interrelate and how a system works within the context of larger systems. This is useful for SDG 14, when considering the complexity of marine and ocean issues. Analysing interactions is particularly helpful when trying to identify priorities and synergies between interventions, but also between different stages of the MEL process.

Box 7. Single-, double- and triple-loop learning

There are several ways to incorporate lessons learnt into interventions for SDG 14. These are three methods that use feedback loops.

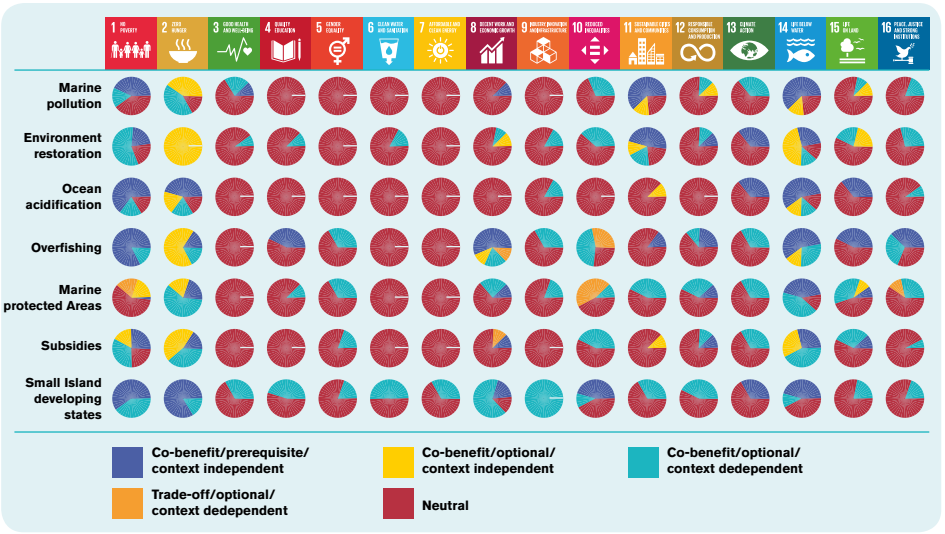
Single-loop learning: Are we doing things right?
This type of leaning refines what exists. People, organisations or groups modify their actions based on the difference between expected and achieved outcomes (changes). They remain within the framework set by their strategy or expected outcomes, but adjust their tactics or behaviour as lessons are learnt.

Double-loop learning: Are we doing the right things?
Double-loop learning questions the frameworks within which we work — for example, the strategic objectives or expected outcomes— and the assumptions on which they are based. It deepens understanding and helps fix problems beyond the symptoms, because it has to engage with the underlying causes of a problem.

Triple-loop learning: Are we thinking in the right way about what we are doing?
This type of learning encompasses both single- and double-loop learning and takes it a step further. Triple-loop learning challenges existing (learning) frameworks, models and assumptions. It focuses on context, on how problems and solutions are connected and how previous actions created current conditions. It can lead to deep learning for what might be radical change.

Figure 14 is a useful visual representation of the interactions between SDG14 and other SDG targets.[5] For example, there are many positive, context-independent interactions between SDG 14, SDG 1 (ending poverty) and SDG 2 (ending hunger). So, its carefully designed collaborative efforts would probably result in significant co-benefits that will help to achieve these three SDGs. Similarly, Target 14.4 (ending overfishing) and Target 14.7 (increasing economic benefits to SIDS) are also linked to many other SDGs.[201] Although such interactions might differ according to context, policies and strategies that enable interaction between these targets will probably have a significant influence on a range of SDGs, making them important focuses for action.

Figure 14. Key interactions between SDG 14 and the other global goals



Source: Singh et al. (2018)[8]

The SDG Interlinkages Analysis & Visualisation Tool (V2.0)[9] is one of several tools you can use to gain a better understanding of these types of interaction. It presents the connections between each of the SDG targets, disaggregated by country and displayed in a complex, interactive map. Although we do not go into great detail in this handbook, systems thinking can support work towards transformative change. It is essential that anyone working with SDG-related policy and strategy planning, implementation and MEL acquaint themselves with the implications of the interactions between SDG targets and how they can use them in practice.

Guiding steps for learning activities

- Collate any information and knowledge generated for M&E activities and analyse it to identify any issues or challenges faced.
- Consider how the intervention overcame these issues — for example, did you need to change the scope or timeline?
- Determine how preventable any challenges were. Use this information to generate lessons learnt about ways to avoid or overcome a similar situation in future.

- Use the feedback loops (see Box 7) established when you developed your monitoring plan to ensure you can incorporate lessons learnt into decision making.

- Consider how interventions for achieving targets have synergies and trade-offs with other systems. Using a systems-thinking approach will help accelerate progress towards SDG 14.

4.5 Putting MEL into practice

By now you should have a good understanding of the different types of MEL and greater awareness of the factors to take into account when determining which MEL approach is most appropriate to your context.

Guiding steps for putting MEL into practice

These steps will help you start putting what you have learnt into practice.

- Assess the level of data accessibility and availability in your MEL initiative.

- Determine whether you will need to work collaboratively with local, national and regional stakeholders.

- Determine what level of evaluation you will conduct, based on data availability, the intersection of ecosystems and the transboundary nature of the issues you need to address.

5. Summary and checklist

We hope that, after reading this handbook, you have a good overview of what MEL is, why it is important and how you can use it to further achievements within SDG 14. In this section you will find a summary and checklist of the things we have covered. This handbook provides a written introduction to MEL, but is designed to encourage and stimulate action. These top ten steps can help you take action on what we have covered in the handbook.

Top ten steps: MEL for SDG 14

1. **Link into the formal SDG 14 review and follow-up process:** Identify which SDG 14 target corresponds to the intervention you are planning or the report you are preparing. Check the custodian agency for that target, the formal indicators and any guidelines for formal reporting on those indicators.

2. **Contact the relevant custodian agency:** If you are preparing a VNR, contact the custodian agency for any recent updates on requirements.

3. **Be aware of policies and legislation:** Make sure that you and any partners working with you are aware of the relevant laws and regulations related to SDG 14.

4. **Identify your stakeholders:** Identify the key stakeholders for SDG 14 in your country and situation. Prepare a stakeholder map. Include both direct stakeholders (who have a direct influence) and secondary or indirect stakeholders who may be affected by the intervention.

5. **Engage your stakeholders:** Take a participatory approach to any activity or intervention, whether it be planning, monitoring, evaluation, learning or reporting. Engaging stakeholders in what you are doing will make your intervention more relevant, complete, accurate and useful. You may need to develop a stakeholder engagement and communication plan.

6. **Think about systems, synergies and trade-offs:** Consider whether your proposed interventions link with SDG 14 and other SDG targets and indicators. Review your stakeholder map and see if there are other stakeholders you need to connect with or different data collection or analyses that you will need to make your intervention more systems-based.

7. **Establish a MEL framework:** Establish an appropriate conceptual framework for your initiative. Consider what the objectives are. Are they clearly stated? Do the stakeholders agree on the objectives? Do your planned steps follow a meaningful pathway that is substantiated by research, local stakeholder experience, specialist knowledge and other evidence? Is your theory of what will happen clearly explained? What are your assumptions?

8. **Design detailed targets and indicators:** Based on the framework, work out what indicators and targets you need. These should link with the formal SDG 14 targets and indicators, but also be SMART and realistic in the context of the resources and capacity available. Establish an M&E plan that will define how you will track, analyse and manage progress. What is the baseline? How often will measurements occur? Who will be responsible for measuring? How will they collect data? How will they check the quality of data?

9. **Setting evaluation questions:** Evaluation can be very responsive to stakeholders and decision makers' needs. The MEL plan should include an indication of the questions you will need to answer to make sure you do not just report progress from a quantitative perspective based on single measurements. Rather, your data should have linked quantitative and qualitative aspects that allow for in-depth understanding of the differences in results between locations, activities and other unique factors that can contribute to more useful, faster learning.

10. **MEL for adaptive management and transformation:** The complexity of SDG 14 means that adaptive management processes are most appropriate to acknowledging interactions between the natural and human systems. The 2030 Agenda calls for transformative action. A well-implemented MEL plan and process can be the driver of management that is appropriate to the context and that raises the opportunity of transformative action. Ensure evaluation findings are clearly communicated to decision makers so they can take the necessary action to achieve accelerated and more cohesive results. In future, these activities will help ensure that interventions track positively towards SDG 14 targets and contribute to achieving the other SDGs.

Checklist

The following is a simple checklist to ensure you embed effective and valuable MEL initiatives in your interventions to inform and accelerate progress towards SDG 14 targets. Check off the stages you understand and feel comfortable with. If any stages remain unchecked, go back over the document, discuss with colleagues or seek relevant expertise.

1. You should have a good understanding of **SDG 14** and:
    a. Why it is important ☐
    b Relevant conventions, laws and policies ☐
    c. The formal SDG and custodian agency follow-up and review processes ☐
    d. Key actors and themes involved at different levels ☐
    e. Important considerations and implementation challenges. ☐
2. You should have a good understanding of what **MEL** is and how you can use it, including:
    a. Fundamentals of MEL ☐
    b. An appreciation for how it differs in a variety of contexts ☐
    c. Awareness of overarching MEL considerations ☐
    d. How you could apply it to your own contexts. ☐
3. You should have a good understanding of how to create appropriate **targets** and **indicators** for **SDG 14 MEL,** including:
    a. How to translate global targets to national/local contexts ☐
    b. Current status of SDG 14 targets ☐
    c. How to choose relevant indicators ☐
    d. Awareness of challenges to and tools for your local context. ☐

4. You should have a more detailed knowledge of **approaches** to conducting **MEL** for **SDG 14,** including:

   a. Factors to consider when choosing a MEL approach or developing a framework or plan ☐

   b. An understanding of core approaches, evaluation types and tools for conducting MEL ☐

   c. How to formulate evaluation questions and appropriate criteria ☐

   d. An understanding of systems thinking and how you can use concepts, such as synergies, trade-offs and complexity, to accelerate progress towards transformative change. ☐

Additional resources

- Biodiversity Indicators Partnership: Contains guidance on indicator development and choices, as well as factsheets and information on more than 60 operational indicators at global level, with national disaggregation. See www.bipindicators.net
- IOC: A webpage containing updates on measuring progress towards the indicators of SDG 14. See http://tinyurl.com/y25juwst
- UNDP: Tools and guidelines for development practitioners. See www.2030agenda.undp.org/content/2030agenda/en/home/resources/tools-and-guidelines-for-development-practitioners.html

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The Sustainable Development Goals (SDGs) are one of the leading initiatives for addressing the critical, complex and often inter-related issues of our world. SDG 14 — Life below water — focuses on our oceans, estuaries, rivers and watersheds, and the human systems that intersect with them. Unfortunately, it has struggled to gain attention and support on an international scale.

This handbook focuses on how a range of actors in a variety of contexts can use MEL to understand which SDG 14 targets and initiatives are working, which are not, why, for whom and how. Ultimately, it advocates for widespread learning on how to accelerate progress towards the transformations needed for success in conserving and using the oceans, seas and marine resources in a sustainable way.

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