



## SDG14: Life Below Water Navigating Life Below Water in Asia and the Pacific

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## ABSTRACT

The 2030 Agenda and its Sustainable Development Goals provide a blueprint to achieve a better and more sustainable future for all. The Agenda addresses global challenges including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice. Goal 14, Life below Water, seeks to conserve and sustainably use the oceans, seas and marine resources for sustainable development. How are the ambitions of Goal 14 water going? Since its adoption in 2015, is the world on track to meet the ambitions of Goal 14? What are the challenges in measuring change? What are the current data and information challenges? This paper aims to provide an overview of progress made on data availability and reporting for Goal 14 in Asia and the Pacific, the home of the Indian and Pacific Oceans, illustrating challenges and new opportunities.

*Key words:* Sustainable Development Goals; data challenges; data opportunities; ocean.

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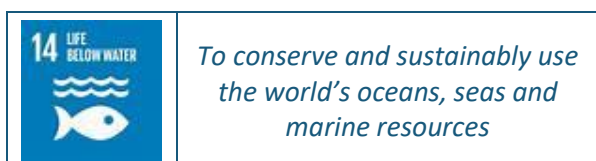
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## Introduction

[The 2030 Agenda for Sustainable Development](#), adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are 17 Sustainable Development Goals (SDGs), collectively referred to as an urgent call for action by all countries - developed and developing - in a global partnership. The Goals recognize ending poverty and other deprivations must go hand-in-hand with strategies to improve health and education, reduce inequality, and spur economic growth – all while taking action to tackle climate change and preserve oceans and forests [UN, 2015].

The 17 Sustainable Development Goals traverse five Ps – People, Prosperity, Planet, Peace and Partnerships. They build on their predecessor, the Millennium Development Goals, expanding the planet, prosperity and peace dimensions of sustainable development.

### Life below Water



Goal 14, Life below Water, seeks to conserve and sustainably use the world's oceans, seas and marine resources for sustainable development.

The Goal has targets for:

- marine pollution (target 14.1)
- management, conservation, protection and use of marine and coastal ecosystems (14.2), coastal and marine areas (14.5) and oceans and their resources (14.c)
- ocean acidification (14.3)
- fishing and science-based management plans (14.4)
- fisheries subsidies (14.6)
- economic benefits to small island developing States (SIDS) and least developed countries (LDCs) (14.7)
- scientific knowledge, research capacity and marine technology (14.a), and

- small-scale artisanal fishers (14.b).

Six of the ten targets have agreed years by which ambitions are to be reached. Four targets have a 2020 ambition: management, conservation and protection of marine and coastal ecosystems (14.2) and coastal and marine areas (14.5), fishing and science-based management plans (14.4) and fishing subsidies (14.6). One target has a 2025 ambition: marine pollution (14.1). One target has a 2030 ambition: economic benefits to SIDS and LDCs (14.7).

Four targets have no explicit time frame: ocean acidification (14.3), scientific knowledge, research capacity and marine technology (14.a), small-scale artisanal fishers (14.b) and management and use of oceans and their resources (14.c).

### Globally, how are the world's ambitions for life below water progressing?

The United Nations High-level Political Forum on Sustainable Development, or HLPF for short, was mandated in 2012 as the main United Nations platform on sustainable development. The HLPF has a central role in the follow-up and review of the 2030 Agenda and the Sustainable Development Goals at the global level. Goal 14 was the subject of an in-depth review at the July 2017 HLPF.

The 2017 HLPF endorsed a Ministerial Declaration which, among other things, declared “we, the Ministers and high representatives, having met at United Nations Headquarters in New York, *possess a strong conviction that our ocean is critical to our shared future and common humanity in all its diversity. .... We are alarmed by the adverse impacts of climate change on the ocean, including the rise in ocean temperatures, ocean acidification, loss of marine biodiversity and sea level rise, as well as by the threats caused by marine and land-based activities. We are committed to halting and reversing the decline in the health and productivity of our ocean and its ecosystems and to protecting and restoring its resilience and ecological integrity, including by dedicating greater resources to marine scientific research and promoting decision - making based on the best available science.*” [UN, 2017]

Two years after this declaration, the UN Secretary General in his 2019 UN Sustainable Development Goal Report stated the “natural environment is deteriorating at an alarming rate: sea levels are rising; ocean acidification is accelerating; the past four years have been the warmest on record; one million plant and animal species are at risk of extinction; and land degradation continues unchecked” [UN, 2019]

### How is Asia and the Pacific progressing?

The 2017 Asia Pacific Forum for Sustainable Development reported Asia and the Pacific has a long way to go to achieve Goal 14.

The Asia Pacific Forum hosted roundtables on six of the SDGs, including Goal 14, and agreed *“oceans, seas and coasts in the Asia-Pacific are of vast social and economic importance to the region, the growth engine of the world economy. The prospects for the achievement of this goal hinge on effective conservation and sustainability of marine and coastal ecosystems while maintaining the social, and economic value to humans’ livelihoods and regional prosperity. It was agreed that climate change and ocean acidification, overfishing, pollution, invasive species introduction and habitat losses, arising from poor or sectoral management practices and limited knowledge and transfer of marine technology are threatening ocean health, with serious harmful and irreversible consequences.”*

Participants in the roundtable also concluded *“partnerships for implementation of SDG14 at all levels between governments, the private sector and civil society [are] vital to the achievement of SDG14. They need to be functional and proactive and transformative. They should be an integral*

*part of national and regional planning and implementation processes.”* Furthermore, Asia-Pacific is the *“key to link the global objectives with national development priorities. Therefore, there is a pivotal role that UN and its specialized agencies, including [the UN Economic and Social Commission for Asia and the Pacific, or UN] ESCAP, should be committed to play in assisting countries, particularly these developing countries, SIDS and LDCs, towards the attainment of SDG 14.”* [UN ESCAP, 2017].

In the same year, UN ESCAP was asked to support partnerships to strengthen regional capacity for ocean data and statistics (UN ESCAP Resolution 73/5).

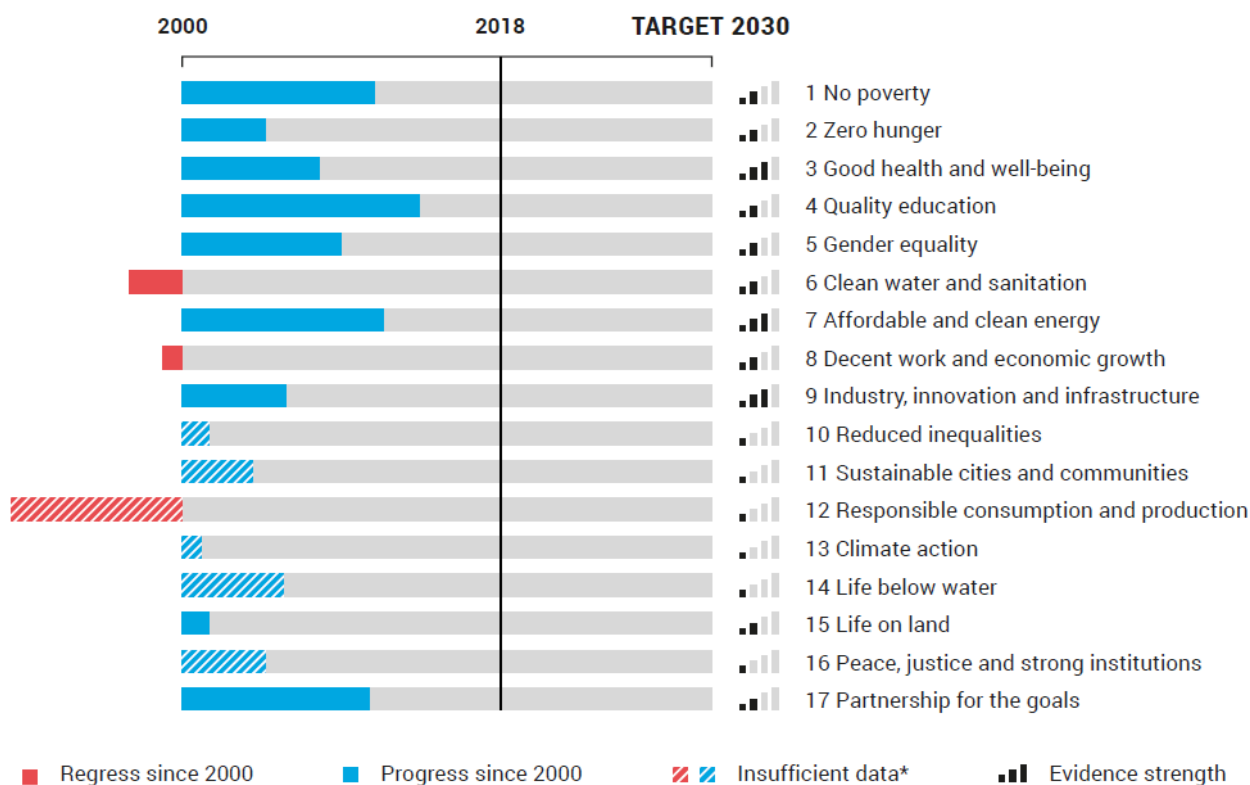
In 2020, the theme of the 76<sup>th</sup> session of the ESCAP Commission will be promoting economic, social and environmental cooperation on oceans for sustainable development. This paper provides some context of the measurement, monitoring and reporting challenges faced by Asia and the Pacific.

### Measuring progress towards Goal 14 in Asia and the Pacific

Based on the globally compiled data in the official UN SDG database, the Asia-Pacific region will likely miss all seventeen Goals of the 2030 Agenda, including Goal 14, at its current pace of progress (Figure 1).

This finding uses a progress assessment methodology developed by UN ESCAP to analyse the distance travelled, by Asia and the Pacific, from 2000 to 2018 to address the question: where does Asia and the Pacific stand on each of the Goals? [UN ESCAP, 2019].

Figure 1. SDG snapshot for Asia-Pacific region, 2018<sup>1</sup>



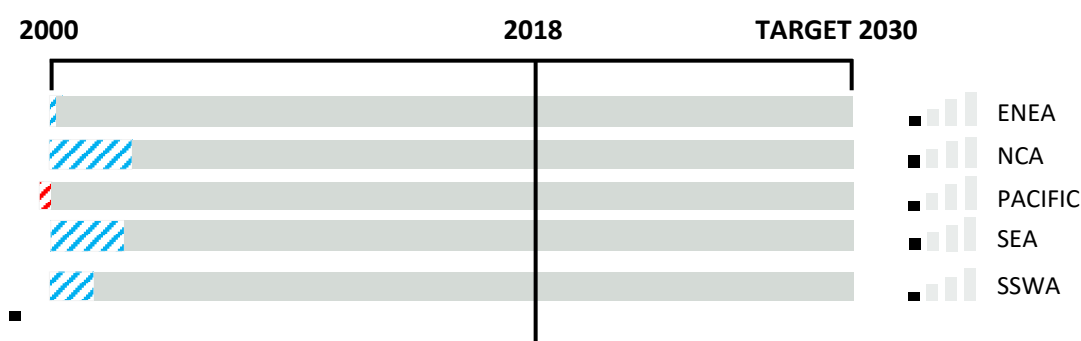
**Are there subregions in Asia and the Pacific which will reach Goal 14?**

Asia and the Pacific is a very diverse region, home to 4.5 billion people, from Turkey in the west to the Pacific Islands in the East, the Russian

Federation in the North and New Zealand in the South. This diversity entails different priorities for different geographical subregions<sup>2</sup>.

Each subregion in Asia and the Pacific is also likely to miss Goal 14 at its current pace of progress (Figure 2).

Figure 2. SDG14 snapshot for subregions in Asia-Pacific, 2018



<sup>1</sup> If a blue bar has reached or crossed the 2018 line, the region has reached its expected progress to date. However, whether a Goal can be achieved by 2030 depends not only on the distance travelled thus far (blue), but also the pace of progress going forward, which is measured by anticipated progress (see Figure 3 for pace of progress for SDG14 targets).

<sup>2</sup> East and North East Asia (ENEA), North and Central Asia (NCA), The Pacific (PACIFIC), South East Asia (SEA), South and South West Asia (SSWA). For details of country representation in these regions, see Annex 1.

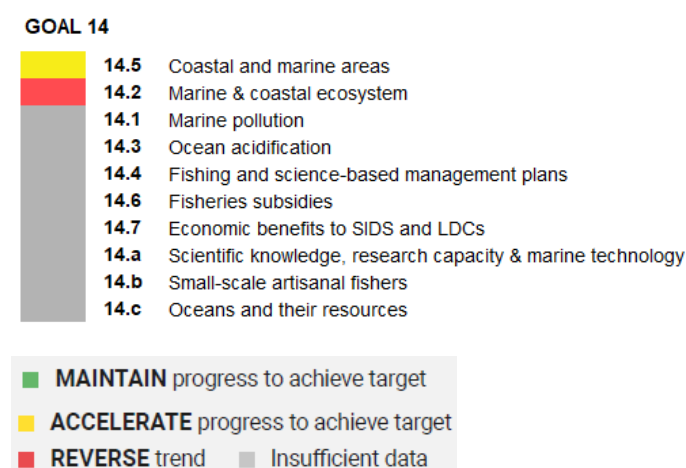
## What about targets? Will Asia and the Pacific reach the globally agreed targets for Goal 14 by 2030?

An Asia-Pacific SDG Dashboard (Figure 3) presents estimates of the Asia-Pacific region's likelihood to achieve Goal 14 targets by 2030. The dashboard color-codes anticipated progress by green (maintain progress to achieve target), yellow (accelerate progress to achieve target) and red (reverse trend to achieve target). The high number of targets which are grey indicates data are insufficient to assess progress for most targets.

In Asia and the Pacific, only two targets have sufficient data to assess progress – targets 14.5 and 14.2 (and in the case of 14.2, data is only available for an approved proxy indicator). For these two targets, Asia and the Pacific needs to accelerate progress (for conservation of coastal and marine areas or target 14.5) or reverse current trends (for management and protection of marine and coastal ecosystems or target 14.2) if it is to achieve the targets.

Insufficient or missing data leaves large information gaps about marine pollution (14.1), ocean acidification (14.3), fishing and science-based management plans (14.4) and economic benefits for SIDS and LDCs (14.7), among other targets.

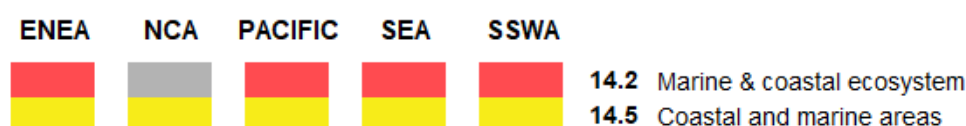
Figure 3. SDG14 dashboard for Asia-Pacific, 2018



## Are there subregions in Asia and the Pacific which will reach the targets of Goal 14?

The conservation of coastal and marine areas (target 14.5) needs to increase significantly across all subregions within Asia-Pacific, while trends for management and protection of marine and coastal ecosystems need to reverse in four of five subregions (North and Central Asia is mostly landlocked thus this target is irrelevant to most countries in the subregion) (Figure 4).

Figure 4. SDG14 dashboard for subregions in Asia-Pacific, 2018



## The current state of oceans data and knowledge

The latest UN Environment Programme Global Environment Outlook (GEO 6) paints a dim view of the current state of oceans data and knowledge world-wide (see Box 1). In Asia and the Pacific, the current state of oceans data and knowledge is equally dim.

There is a paucity of data for Goal 14 due to a lack of history in terms of global methodological development, lack of country-level experience in collecting ocean data and high cost of collecting data across the Economic Exclusive Zone. This

paucity is displayed by one bar of evidence strength and a shaded, not solid, progress bar in Figure 1 and Figure 2, and discussed further in this paper.

## What about indicators? How is progress towards the Goals and Targets measured?

To better understand why data availability is a challenge in Asia and the Pacific, we first need to understand how Goal 14 targets are monitored, by what indicators, who are the global data custodians for the indicators, and what are the recommended data sources for these indicators.

### How many global SDG indicators are there for Goal 14?

Goal 14 targets are monitored by 10 global SDG indicators and three approved proxies<sup>3</sup> (*Annex 2: Global SDG14 targets and indicators*). One of the global SDG indicators has two parts (14.1.1a – Index of coastal eutrophication and 14.1.1b – plastic debris density) but is counted as one in the global SDG indicator framework.<sup>4</sup>

### What are the themes of the Goal 14 indicators?

The ten indicators can be categorised into five themes – fishing, fishers and fisheries; marine pollution; acidity; economic measures; and protection, conservation, management and use (*Figure 5, ESCAP's classification*).

### Who are the global data custodians for the Goal 14 indicators?

There are six global data custodians for the ten indicators: Food and Agriculture Organisation of the UN (FAO), Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), UN Environment Programme (UN Environment), UN Environment World Conservation Monitoring Centre (UNEP-WCMC) with UN Environment Programme and the International Union for Conservation of Nature (IUCN), and Office of Legal Affairs of the UN Division of Ocean Affairs and the Law of the Sea (OLA-DOALOS).

The global data custodians are responsible for, amongst other things, providing metadata and guidance to countries on how to compile the indicators, developing international standards and strengthening national monitoring and reporting capacity.<sup>5</sup>

## Box 1. The Current State of Oceans Data and Knowledge

Ocean data have many gaps, which is unsurprising since satellite observations cannot penetrate below surface waters. Most oceanic data are collected by direct measurement or modelling, so it is difficult to obtain good coverage for a vast environment that extends over 70% of the earth's surface. Some issues exist through lack of global coordination, as both coral reefs and marine litter lack global databases. The National Oceanic and Atmospheric Administration (NOAA) maintains the largest coral reef database, but it does not draw upon all sources globally. Similarly, marine litter data are collected by different countries with different protocols and have not been globally consolidated. In addition to litter abundance and distribution, significant knowledge gaps exist regarding the ecological impacts of marine litter, including the toxicity of ingestion, impacts of nanoparticles, microplastics, and how plastics ingested by fish impact human consumption.

Global fish catch data are maintained by FAO to which all countries report national catch and yield. Commercial fishing catches are well monitored in developed countries but are almost certainly underestimates since illegal [and unreported] fishing constitutes as much as 40% of all catch in some areas (Agnew et al, 2009). In countries with fewer resources to devote to reporting, fishing estimates are often based on a small number of samples and are therefore less reliable. Research vessel costs are a major impediment to obtaining fisheries-independent data, particular in developing countries where even catch monitoring in ports may not be economically viable.”

Source: UN Environment GEO 6: Chapter 3: The current State of our Data and Knowledge [UN Environment, 2019].

<sup>3</sup> The UN Statistical Commission agreed, at its 50<sup>th</sup> session, proxies may be used in global monitoring exercises in order to allow reporting on targets while the methodological work on Tier III indicators continues and until data are available [IAEG, 2019]. Data custodians are not necessarily in agreement with the approved proxies.

<sup>4</sup> The UN Statistical Commission agreed, at its 47<sup>th</sup> session, to a global SDG indicator framework developed by an Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs).

<sup>5</sup> Other responsibilities include: compiling and verifying country data and metadata; submitting country data along with regional and global aggregates to the UN Department of Economic and Social Affairs Statistics Division (UNSD); validating and obtaining approval from countries for data submitted to UNSD; recommending methodologies for monitoring; strengthening national monitoring and reporting capacity; estimating or adjusting country data, together with the specific country, when country data are missing, collected using a different methodology or inconsistently reported by different sources.

### How many of the Goal 14 indicators are tier I?

Life below Water is monitored by five tier I indicators<sup>6</sup>, meaning data are regularly produced by countries for at least 50 per cent of countries and of the population in every region<sup>7</sup> where the indicator is relevant, the indicator is conceptually clear and has an internationally established methodology, and standards are available. The five tier I indicators are 14.4.1, 14.5.1, 14.6.1, 14.7.1 and 14.b.1.

One of the five tier I indicators (14.7.1) was reclassified in September 2019 from tier III to tier I. Whilst still a tier III indicator, MSC (Marine Stewardship Council) certified catch was approved as a proxy for 14.7.1 while the methodological

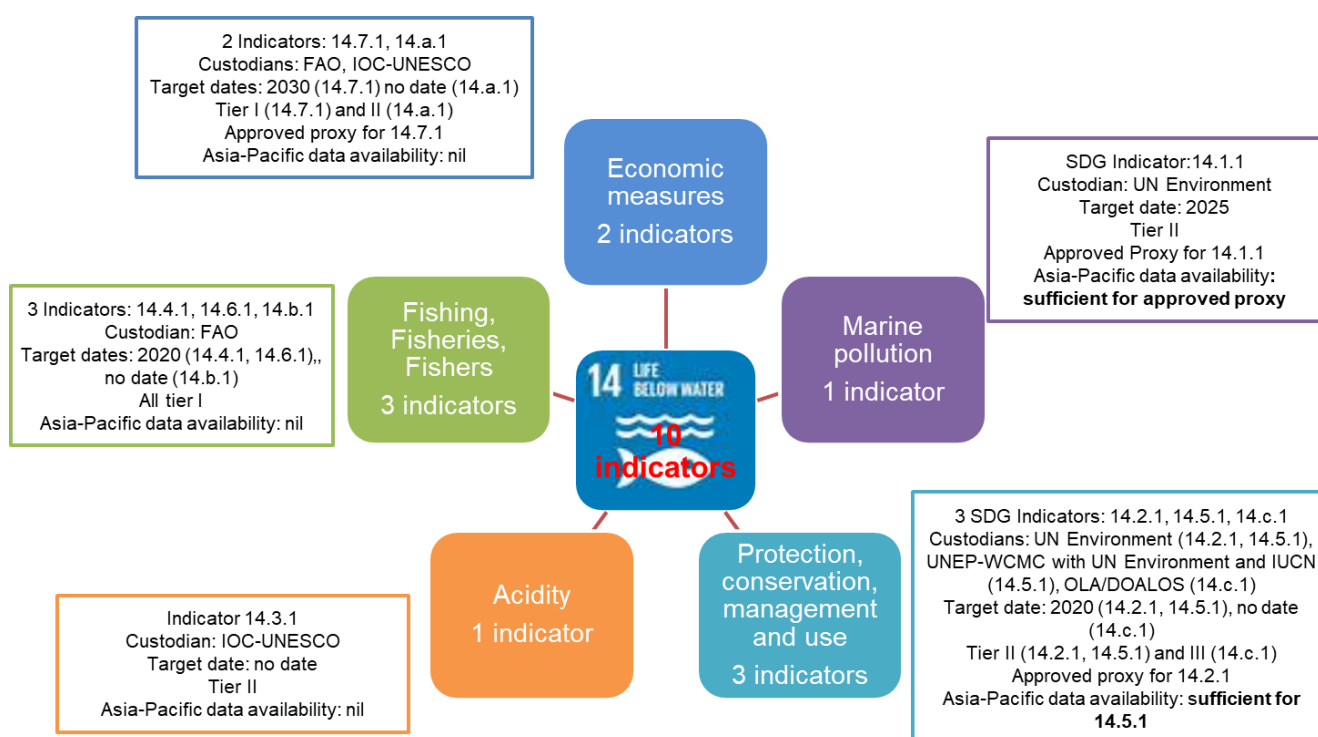
work on Tier III indicators continues and until data are available [IAEG, 2019, ESCAP underline].

Two of the five tier I indicators were reclassified from tier II to tier I based on a data availability review in November 2019.

Despite being classified as tier I, for the Asia-Pacific region, in 2019 there was only sufficient data to measure one Goal 14 tier I indicator (14.5.1). UNEP-WCMC with UN Environment and IUCN are the data custodians for this indicator.

There was insufficient data to measure the other four tier I indicators (14.4.1, 14.6.1, 14.7.1 and 14.b.1) or the approved proxy (MSC certified catch) in 2019 for the Asia-Pacific region. FAO is the data custodian for these four tier I indicators.

Figure 5. Life below Water – SDG indicators<sup>8</sup>



<sup>6</sup> As of November 2019. For tier classifications see <https://unstats.un.org/sdgs/iaeg-sdgs/tier-classification/>

<sup>7</sup> Assessment of data availability for global tier classification follows the "Standard Country or Area Codes for Statistical Use (M49)" which is different from the ESCAP groupings indicated in [Annex I](#). See <https://unstats.un.org/unsd/methodology/m49/> for details.

<sup>8</sup> Classification by UN ESCAP



### How many of the Goal 14 indicators are tier II?

Life below water is also monitored by four tier II indicators, meaning data are not regularly produced by countries despite the indicator being conceptually clear, with an internationally established methodology and with standards available. The four tier II indicators are 14.3.1, 14.6.1, 14.a.1 and 14.b.1.

Two of the four tier II indicators (14.1.1 and 14.2.1) was reclassified in October 2019 from tier III to tier II. Whilst still tier III indicators, OHI or the Ocean Health Index was approved as a proxy for 14.1.1 and the Marine Trophic Index was approved as a proxy for 14.2.1 while the methodological work on Tier III indicators continues and until data are available [IAEG, 2019, ESCAP underline].

For the Asia-Pacific region, there is no data to measure progress with any of the four tier II indicators. There is sufficient data to measure progress with one of the approved proxies, the Ocean Health Index.

### How many of the Goal 14 indicators are tier III?

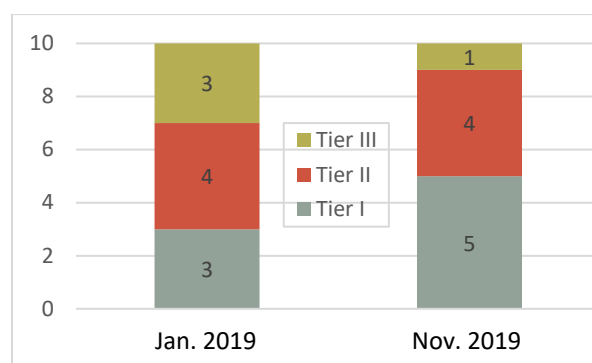
Life below water is monitored by one tier III indicator, meaning no internationally established methodology or standards are yet available for the indicator but methodology/standards are being (or will be) developed or tested. The tier III indicator is 14.c.1.

There is no approved proxy for 14.c.1.

### Despite data availability challenges, methodological progress is being made

The IAEG-SDG Indicators is tasked with review and management of the global SDG indicator framework. One of its tasks is to regularly review the tier classification of the indicators. For Goal 14, there has been rapid progress. The tier classification profile has changed from three tier I, four tier II and three tier III indicators in January 2019 to five tier I, four tier II and one tier III in November 2019. This demonstrates the commitments of countries and global data custodians to methodological development and data availability, not with-standing the lack of data at the regional level (see Figure 6).

Figure 6. SDG 14 indicators by Tier classification



### What are the data sources for the Goal 14 indicators?

Data is collected from a variety of sources for Goal 14 indicators and include international organisations; national statistical systems; national scientific agencies; Ministries of Fisheries, Environment and Ocean science; universities; and voluntary surveys.

International organizations collect, compile and/or produce data for all ten of the globally agreed SDG indicators for Goal 14. FAO for four (14.4.1, 14.7.1, 14.6.1 and 14.b.1), UN Environment Programme for two (14.1.1 and 14.2.1), IOC-UNESCO for two (14.3.1 and 14.a.1), UNEP-WCMC with UN Environment and IUCN for one (14.5.1) and UN OLA/DOALOS for one (14.c.1).

These international organizations collect or compile data from a variety of sources, including national governments (14.1.1, 14.2.1, 14.3.1, 14.5.1, 14.6.1, 14.a.1 and 14.b.1), satellite data (14.1.1), models (14.1.1 and 14.7.1), universities (14.a.1), other international partners (14.7.1) and countries (14.c.1).

Within national governments, sources include national statistical organisations (14.a.1); Ministry of Environment and other ministries responsible for the designation and maintenance of protected areas (14.5.1), Ministries of Fisheries (14.6.1, 14.b.1) and Ocean Science (14.a.1), and IOC focal points, National Oceanographic Data Centres and science agencies (14.3.1).

For one tier I indicator (14.7.1) the global data custodian (FAO) indicate no country-level data is available as the derivation of this indicator is data hungry and technically demanding because it needs stock assessment.

For the one tier III indicator (14.c.1), the data custodian expects the data source to be a voluntary web-based questionnaire to countries.

The data custodians are mindful of reporting load and minimise where possible. For example, in the case of indicators 14.1.1 and 14.2.1, UN Environment use national data collected under the Regional Seas Programme if a country is part of the Programme. In the case of 14.6.1 and 14.b.1, the FAO uses responses by FAO Member States from a FAO Code of Conduct for Responsible Fisheries questionnaire.

Both UN Environment and FAO also undertake modelling – globally modelled geospatial data for 14.1.1 and modelled fish stock status for 14.b.1.

#### *What data is available for Asia and the Pacific?*

Whilst many of the agreed SDG indicators for Goal 14 can be measured globally and five have been classified as tier I (meaning data are regularly produced by countries for at least 50 per cent of countries and of the population in every region), in Asia and the Pacific there is only sufficient data to measure progress for one of the five tier I indicators (14.5.1) and one of the three approved proxies: ocean health index (for 14.1.1).

Using the categorisation given in [Figure 5](#), there is sufficient data to measure progress in the Asia and Pacific region for one of three protection, conservation, management and use indicators (14.5.1) but not the other two (14.2.1 or 14.c.1).

There is insufficient data available for monitoring progress in the Asia and Pacific region for the three fishing, fisheries and fisher indicators (14.4.1, 14.6.1 and 14.b.1) despite all three being classified as tier I.

There is also insufficient data for monitoring progress for the two economic indicators (14.7.1 and 14.a.1) despite one (14.7.1) being classified as tier I.

There is also insufficient data for monitoring progress with marine pollution (14.1.1) although there is sufficient data for monitoring progress

based on its approved proxy (the Ocean Health Index).

There is also insufficient data for monitoring progress with ocean acidification (14.3.1), a tier II indicator.

Note UN ESCAP used the Ocean Health Index as a proxy for target 14.2, not 14.1. There were timing differences between when the Ocean Health Index became an officially approved proxy and when it was used for analysis of progress in Asia and the Pacific.

### **What are some measurement challenges to measuring Goal 14 indicators in the Asia-Pacific region?**

#### *Role of National Statistical Systems*

The 2030 Agenda for Sustainable Development follow-up and review processes are guided by a set of principles, including “that the global review will be primarily based on **national official data sources**.”<sup>9</sup> Furthermore, “follow-up and review at the high-level political forum will be informed by an annual progress report on the Sustainable Development Goals to be prepared by the Secretary-General in cooperation with the United Nations system, based on the global indicator framework **and data produced by national statistical systems** and information collected at the regional level.”<sup>10</sup>

National Statistical Systems are the ensemble of statistical organisations and units within a country that jointly collect, process and disseminate official statistics on behalf of national governments. In practice, the National Statistical System includes the National Statistics Office as well as other units and organisations within the national government such as Fisheries Ministry and the Central Bank.

Roles and responsibilities within a National Statistical System are a major issue faced by many countries in Asia and the Pacific. Whilst in some countries the National Statistical Office plays a strong coordination and quality assurance role (for example, in New Zealand), this is the exception rather than the norm. This often leads

<sup>9</sup> A/Res/70/1 paragraphs 74 and 74a

<sup>10</sup> Ibid, para 83

to a fragmented statistical system where there is little oversight of the breadth and quality of SDG data being supplied to global data custodians for global follow-up and review at the High-Level Political Forum. Current data sources for Goal 14 indicators illustrate this coordination challenge.

### *Role of international organisations*

International organisations are not, by definition, part of a national statistical system. However, for Goal 14, international organisations are, or are expected to collect, compile and/or produce data for all of the ten globally agreed indicators.

Custodian agencies have a role in working with national statistical systems, partners and other stakeholders to ensure the 2030 Agenda can be monitored at the global, regional and national level in a way that informs policy. For Goal 14, this has translated into some indicators being produced by international organisations using global data and modelling (such as 14.1.1 and 14.7.1).

### *Is Goal 14 a national priority? Is the Blue Economy a priority? Is the Ocean Economy a priority?*

Another challenge in Asia and the Pacific refers to the level of priority assigned to Goal 14 in the national context.

The 2030 Agenda is a country-led development agenda - countries localize the 2030 Agenda to their context. With such an ambitious agenda, countries in Asia and the Pacific are typically prioritizing topics and with 17 Goals to choose from, not all Goals may feature in a country priority list. For example, Goal 14 will in most cases not be a priority for land-locked countries. On the other hand, many countries, in particular SIDS, have a strong interest in conserving, protecting and managing ocean, sea and marine resources given the current and potential importance of the blue and ocean economies to national economies.

So, what is meant by “the blue economy”? According to Conservation International, at its simplest, blue economy refers to the range of economic uses of ocean and coastal resources

such as energy, shipping, fisheries, aquaculture, mining, and tourism. It also includes economic benefits that may not be marketed, such as carbon storage, coastal protection, cultural values and biodiversity.<sup>11</sup>

Globally and regionally, blue and ocean economy efforts are gaining momentum. The World Bank, OECD and European Union, and regionally, Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and the Ocean Policy Research Institute of the Sasakawa Peace Foundation (of Japan) are, amongst others, paying attention to the blue and ocean economies.

Multilateral declarations committing to developing a blue economy are being made, for instance in Asia and the Pacific, a 2012 Changwan Declaration by ten East Asian countries and a 2017 Jakarta Declaration of the Indian Ocean Rim Association.

And in 2018, twelve world leaders including Australia, Fiji, Indonesia, Japan and Palau launched a High-Level Panel for a Sustainable Ocean Economy in conjunction with the UN Special Envoy for the Oceans, Mr Peter Thomson. Canada and Kenya have since joined. The High-Level Panel is considering contributions to the 2020 UN Ocean Conference in Lisbon, Portugal.

The OECD estimates the direct contribution of the ocean economy to the world economy in 2010 to be USD1.5 trillion (measured by gross value added or GVA) or 2.5% of world GVA, less than 3% of world GDP, and 5-6% of the global “real economy”.<sup>12</sup>

### *Transboundary nature of the Oceans*

Addressing Areas Beyond National Jurisdiction (ABNJ) is a challenge in the SDG indicator framework, particularly for Goal 14.

As oceans are truly transboundary in that water and pollution in water is constantly flowing from one country to another, the need for international harmonization and standardization is imperative. The IAEG-SDG Indicator framework presents a mixed approach which employs both globally modelled and national data for many of the Goal

<sup>11</sup> <https://www.conservation.org/blog/what-on-earth-is-the-blue-economy/>

<sup>12</sup> [https://www.oecd.org/sti/ind/Session%201\\_b%20-%20Claire%20Jolly%20-%20Web.pdf](https://www.oecd.org/sti/ind/Session%201_b%20-%20Claire%20Jolly%20-%20Web.pdf)

14 indicators which will hopefully provide a balance between the need to build national statistical capacity to monitor oceans and the

need for consistent data across the world's vast oceans.

## Areas of future work in Asia and the Pacific

### *Strengthening national statistical systems*

The UN Decade of Ocean Science for Sustainable Development (2021-2030) was proclaimed to support efforts to reverse the cycle of decline in ocean health and gather ocean stakeholders worldwide behind a common framework that will ensure ocean science can fully support countries in creating improved conditions for sustainable development of the Ocean. The Decade's strong focus on data collection is recognition of the value the UN puts on data.

The 2030 Agenda for Sustainable Development is a country-led development agenda, calling for data to be compiled from national statistical systems.

The UN is fully behind strengthening national statistical systems, including for Goal 14.

UN ESCAP is helping to strengthen national statistical systems in Asia and the Pacific. In 2018, governments adopted a declaration, Navigating Policy with Data to Leave No One Behind, committing to give attention to nine areas including roles and responsibilities within a national statistical system and the strengthening of legislation to make use of frontier technologies for official statistics.



**2021**  
**2030** United Nations Decade  
of Ocean Science  
for Sustainable Development

The UN Statistical Commission has also established a Global Working Group on Big Data for Official Statistics which is strengthening the capacity of countries to use big data, such as geospatial and mobile phone data, for official statistics.

### *Supporting national statistical systems*

Global data custodians are supporting countries to deliver on the ambitions of the 2030 Agenda.

The FAO is the custodian of 21 of the global SDG indicators, four within Goal 14. The FAO has an extensive range of open access e-learning courses available including an e-learning course on SDG indicator 14.b.1 – securing sustainable small-scale fisheries. A downloadable package is available in English, Russian and Arabic, and soon in Chinese.<sup>13</sup>

FAO is also, with regard to indicator 14.6.1 and 14.b.1, including the National Statistical Office in communications with Fisheries Ministries to assist with following up at the national level and therefore ensuring a better response rate.

### *Methodological development*

UN Environment is the custodian for three of the Goal 14 indicators and has developed a *Global Manual on Ocean Statistics* to support countries in their efforts to track progress against the delivery of Goal 14 by providing a step-by-step guide to implementing two indicators (14.1.1 and 14.2.1). The document provides a step-by-step structure of the indicator methodologies to promote coherent approaches across and within countries.

For indicator 14.5.1, an internationally established methodology already exists and thus it is not extensively covered in the *Global Manual on Ocean Statistics*. Instead, the manual points towards the existing methodology which is based on the World Database on Protected Areas

<sup>13</sup> <https://elearning.fao.org/course/view.php?id=348>

(WDPA) and calculated using the WDPA, based on national data which countries either submit into the WDPA or approve.

IOC-UNESCO is custodian of two of the ten Goal 14 indicators, and supports the scientific community in developing human capacity to measure and report ocean acidification data via hands-on workshops supported by Global Ocean Acidification Observing Network (GOA-ON), a SDG 14.3.1 data portal<sup>14</sup> and in aligning the methodology with the Global Climate Indicator reporting (UNFCCC). IOC-UNESCO further encourages all Goal 14 data custodian agencies to share indicator methodologies via its platform for Ocean Best Practice.<sup>15</sup>

### *Blue Economy, Ocean Economy and Ocean Accounts*

Just as the world uses the System of National Accounts to measure macro-economic performance (e.g. GDP, GVA), countries are increasing using the System of Environmental-Economic Accounts (or SEEA) to measure economic uses of environmental resources such as energy, water and now oceans.

The System of Environment-Economic Accounts is, as the name implies, a system. The system has a Central Framework which includes thematic areas such as agriculture, forestry and fisheries which provide guidance on measuring the stocks, supply and use of food (e.g. fish and other aquatic resources) as well as guidance on measuring the environmental impact of industries (e.g., land use, carbon emissions, waste production).

The system also includes an experimental ecosystem account framework which includes thematic areas such as oceans. UN ESCAP and UN Environment are contributing to the development of international standards for the measurement of

the economic, social and environmental aspects of the ocean and coasts. The approach is to apply statistical, scientific and policy expertise to produce practical guidance for countries on measuring a feasible set of core ocean accounts. Measuring the blue economy and ocean economy is one component of these accounts.

The UN Statistical Commission (UNSC) has asked UN ESCAP and UN Environment to take the lead in developing guidance for ocean statistics and contribute to the revision of the SEEA Experimental Ecosystem Accounting for possible global adoption in 2021. A globally agreed framework for ocean accounts would enable coherent, internationally comparable measurement of the blue economy and ocean economy just as there is a coherent, internationally comparable measurement framework for the economy as a whole.

Technical guidance on ocean accounting is progressing through the newly established Global Ocean Accounts Partnership, co-founded by UN ESCAP and the University of New South Wales, Australia.<sup>16</sup>

### *Citizen science and Goal 14*

The UN Environment Programme has contributed to a recently published article on the role of Citizen Science for the UN SDGs [Fritz, 2019]. The article explores the use of non-traditional data sources for the SDG indicator framework before specifically discussing citizen science.

For Goal 14, the authors discuss use of citizen science for large-scale monitoring for SDG target 14.1: substantial reductions in marine pollution, including nutrient pollution and marine debris in coastal waters (Box 2).

<sup>14</sup> <https://oa.iode.org/>,

<sup>15</sup> <https://www.oceanbestpractices.org/>

<sup>16</sup> <https://www.oceanaccounts.org/>

## Box 2. Citizen science for tier III indicator 14.1.1<sup>17</sup>

Citizen-science communities are already engaged with quantifying marine debris—contributing, for example, to the European Union (EU) Plastics Strategy. At present, quantification of floating marine debris, specified in Indicator 14.1.1, relies mainly on visual observations by scientists, with no standardization in approaches or an internationally agreed protocol. Beyond quantifying debris that is floating, members of the public often participate in marine debris clean-ups, often recording marine debris found with the Tangaroa Blue Foundation (part of the Australian Marine Debris Initiative), OpenLitterMap, Marine Debris Tracker and other programs.

Synergies between marine and river pollution monitoring by citizen scientists could also be investigated for SDG reporting. New technologies such as computer vision are being employed in combination with visual interpretation of drone imagery by citizen scientists in quantifying marine debris (for example, in the Plastic Tide project).

The potential of citizen science for indicator 14.1.1 is included in its metadata [IAEG, 2019]

### Localizing the SDGs

In 2015, as part of the development of the global SDG indicator set, a set of priority indicators was put forward to the first meeting of the IAEG-SDG indicators. Five indicators from the existing global methodological standards for environmental-economic and experimental ecosystem accounts were prioritised – the SEEA Experimental Ecosystem Accounts for target 14.1 (marine pollution) and target 14.3 (ocean acidity), the SEEA Central Framework for target 14.6 (fisheries subsidies) and both the SEEA Central Framework as well as a Tourism Satellite Account for target 14.7 (economic benefits to SIDS and LDCs) [UN DESA, 2015]. None of these recommendations were agreed to by the IAEG-SDG at the time.

However, building on these recommendations and in the context of developing experimental ocean ecosystem accounts, UN ESCAP updated the mapping for how environmental-economic accounts could be used to support measurement of the SDG targets. ESCAP found an ocean ecosystem account as well as environmental-economic accounts from the SEEA central framework could support all ten of the global life below water targets as follows:

- SEEA Experimental Ecosystem Account for ocean:
  - condition (14.1.1 and 14.3.1)

- extent (14.2.1, 14.4.1, 14.5.1, 14.6.1, 14.7.1)
- services (14.2.1, 14.5.1)
- biodiversity (14.3.1), and
- governance (14.3.1, 14.4.1, 14.5.1, 14.6.1, 14.7.1, 14.a.1, 14.b.1, 14.c.1)
- SEEA Central Framework Accounts for
  - water (14.1.1, 14.3.1),
  - waste (14.1.1),
  - environmental protection expenditure (14.2.1, 14.4.1, 14.5.1, 14.5.1, 14.7.1, 14.a.1, 14.b.1, 14.c.1) and
  - aquatic resources (14.2.1, 14.4.1, 14.5.1, 14.6.1, 14.7.1)

By using these established, albeit developing, methodological frameworks, several development priorities can be accelerated. First and foremost, the development of national statistical systems and within it, national statistical offices. Secondly, investment in enduring statistical series beyond the 2030 Agenda (the development of statistical series for water, waste, environment protection, etc which have wide policy application beyond the 2030 Agenda). Thirdly, improved alignment between data sources and the 2030 Agenda mandate (indicators coming from non-National Statistical System actors such as universities could be replaced by National Statistical System actors).

<sup>17</sup> Source: Extract of article appearing in Nature: <https://www.nature.com/articles/s41893-019-0390-3>

## Regional Seas

The importance of regional approaches to protecting oceans has been recognized for over 40 years. In 1974, the Regional Seas Programme was launched and has developed over the years into a legal framework for protection of oceans and seas through Regional Seas Conventions and Actions Plans. Five of the global Regional Seas multilateral environment agreements are wholly located in the Asia-Pacific Region.

In 2015, the Regional Seas Programme launched an initiative to establish a set of core indicators which all Regional Seas would strive to measure in order to promote harmonization of data collection at the regional level. The Regional Seas Programme adopted a set of indicators which have been mapped to the SDG indicators.<sup>18</sup> The high alignment between the Regional Seas indicators and the SDG indicators provides an opportunity for reducing the reporting burden for countries and for ensuring a link between data and policy action through legally binding multilateral agreements.

### Leaving no-one behind

UN ESCAP, UN Women, UN Environment and IUCN are working with Asia and Pacific countries to develop a regional perspective on mainstreaming gender into environment statistics for the SDGs and beyond. Together, partners are identifying SDG indicators relevant to measuring the environmental-gender nexus in Asia-Pacific [UN ESCAP, 2019].

One Life below Water indicator, 14.4.1, is included as a context-specific indicator for use in broader analysis of gender-environment issues, providing important insights for gender analysis when used

in conjunction with gender-environment nexus indicators.

### Other nexus developments

Other resources on the nexus between thematic areas and gender are emerging. One such resource, *Advancing Gender in The Environment: Gender in Fisheries-A Sea of Opportunities*<sup>19</sup> looks at the nexus of gender and fisheries in alignment with Goals 14 and 5 (Gender Equality) as well as the Beijing Declaration and Platform for Action. The resource also discusses marginalized groups such as Indigenous Peoples. The resource was developed by the IUCN Global Programme on Governance and Rights, USAID's Office of Forestry and Biodiversity, and USAID's Office of Gender Equality and Women's Empowerment in the Bureau of Economic Growth, Education, and Environment.

### Marine Spatial Planning

ESCAP has analysed changes in the existence of marine spatial plans in the Asia-Pacific region between 2009 and 2019. Significant improvements can be observed. For example, between 2009 and 2019:

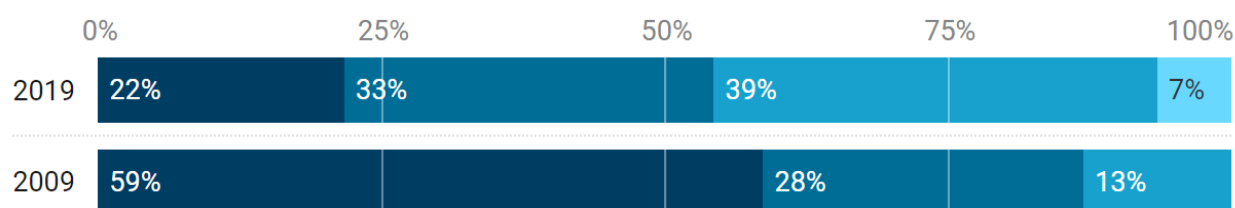
- the findability of information on marine spatial planning increased in 17 countries (stage 0)
- 14 new countries initiated or progressed marine spatial planning (Stages 1 and 2)
- 3 countries expanded marine spatial planning to cover Exclusive Economic Zone (EEZ) (stage 3).

<sup>18</sup> UN Environment (2018). Regional Seas Follow Up and Review of the Sustainable Development Goals (SDGs). UN Environment Regional Seas Reports and Studies No. 208

[https://wedocs.unep.org/bitstream/handle/20.500.11822/27295/ocean\\_SDG.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/27295/ocean_SDG.pdf?sequence=1&isAllowed=y)

<sup>19</sup> <https://genderandenvironment.org/resource/advancing-gender-in-the-environment-gender-in-fisheries-a-sea-of-opportunities/>

## Asia-Pacific MSP Snapshot 2009-2019



(Percentage of 46 Countries)

MSP Implementation Stage ■ 0: No ■ 1: Initiated ■ 2: In progress ■ 3: Full

## Conclusion

The 2030 Agenda for Sustainable Development is a shared blueprint for peace and prosperity for people and the planet, now and into the future. However, measuring the shared blueprint for Life below Water is a challenge in the Asia-Pacific region.

Sufficient data is only available to measure progress in Asia and the Pacific for one of the ten globally agreed indicators for Goal 14, despite five being classified or recently reclassified as tier I.

Promising developments include the UN Decade of Ocean Science, the emerging blue and ocean economies, global methodological standards for ocean accounts, ongoing capacity development activities by data custodians and development partners, a Global Manual on Ocean Statistics, mapping the environment-gender nexus, and the use of citizen-science.

However, increased joint efforts are necessary to support countries to regularly produce data and

information required to report progress with Goal 14. These activities must include strengthening national statistical systems which are mandated in the 2030 Agenda as the source of data for global follow-up and review.

Additionally, there is a need to better understand the land to ocean nexus. Activities on land impact not only the oceans of that country but of other countries. There is a need to understand how the pollution and actions from one country impact the rest of the region and the world. Oceanographic models can provide insight; however, high-quality, regularly produced data across Goals 14 and other related Goals including 2, 6, 12, 13 and 15 are needed.

National statistical systems in Asia-Pacific, with the support of regional organisations, international agencies and development partners, are committed to meet the data and measurement challenges.



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## Annex 1: Asia-Pacific countries and subregions

The following table provides the country groupings that had been used in this analysis along with the corresponding countries under each of them.

Region	
Asia and the Pacific	Afghanistan, American Samoa, Armenia, Australia, Azerbaijan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Cook Islands, Democratic People's Republic of Korea, Fiji, French Polynesia, Georgia, Guam, Hong Kong, China, India, Indonesia, Iran (Islamic Republic of), Japan, Kazakhstan, Kiribati, Kyrgyzstan, Lao People's Democratic Republic, Macao, China, Malaysia, Maldives, Marshall Islands, Micronesia (Federated States of), Mongolia, Myanmar, Nauru, Nepal, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Pakistan, Palau, Papua New Guinea, Philippines, Republic of Korea, Russian Federation, Samoa, Singapore, Solomon Islands, Sri Lanka, Tajikistan, Thailand, Timor-Leste, Tonga, Turkey, Turkmenistan, Tuvalu, Uzbekistan, Vanuatu, Viet Nam

Subregions	
East and North East Asia (ENEA)	China, Democratic People's Republic of Korea, Hong Kong, China, Japan, Macao, China, Mongolia, Republic of Korea
North Central Asia (NCA)	Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan, Uzbekistan
Pacific (PACIFIC)	American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu
South East Asia (SEA)	Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Viet Nam
South and South West Asia (SSWA)	Afghanistan, Bangladesh, Bhutan, India, Iran (Islamic Republic of), Maldives, Nepal, Pakistan, Sri Lanka, Turkey

## Annex 2: Global SDG14 targets and indicators

Global SDG Target	Global SDG indicator	Global SDG Data Custodian	Tier @ Nov. 2019	Data sources recommended in metadata documents by global SDG data custodians
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	<p><b>14.1.1:</b> Index of coastal eutrophication and floating plastic debris density</p> <p><u>Proxy</u> approved at UNSC 50th Session, March 2019 while methodological work continues and until data is available: Ocean Health Index (UNEP-WCMC) Data/methodology: (<a href="http://www.oceanhealthindex.org/">http://www.oceanhealthindex.org/</a>)</p> <p>The indicator includes 14.1.1a Index of coastal eutrophication (ICEP) and 14.1.1b Plastic debris density.</p>	UN Environment Programme	II	<p>Data is sourced from satellite data, global models which are based on official data from national governments as collected from UN organizations, and data provided by national governments.</p> <p>National data will be collected through the Regional Seas Programmes, or for countries not included in these Programmes, UNEP will reach out directly.</p> <p>Globally derived data is a partnership between UNEP with NOAA and GEOBluePlanet, with the Global Nutrient Management System (GNMS) and with the Scientific Advisory Committee of the Ad hoc and Open-Ended Expert Group on Marine Litter.</p>
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	<p>14.2.1: Proportion of national exclusive economic zones managed using ecosystem-based approaches</p> <p><u>Proxy</u> approved at UNSC 50<sup>th</sup> Session, March 2019 while methodological work continues and until data is available [IAEG, 2019]: Marine Trophic Index (UNEP-WCMC) Data/metadata: <a href="https://www.bipindicators.net/indicators/marine-trophic-index">https://www.bipindicators.net/indicators/marine-trophic-index</a></p>	UN Environment Programme	II	<p>Data is sourced from national governments.</p> <p>National data will be collected through the Regional Seas Programmes, or for countries not included in these Programmes, UNEP will reach out directly.</p>

Global SDG Target	Global SDG indicator	Global SDG Data Custodian	Tier @ Nov. 2019	Data sources recommended in metadata documents by global SDG data custodians
14.3: Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	14.3.1: Average marine acidity (pH) measured at agreed suite of representative sampling stations	IOC-UNESCO	II	<p>IOC-UNESCO contact IOC focal points and National Oceanographic Data Centres to request relevant data from appropriate national oceanographic data centres and/or relevant science, agencies or programmes</p> <p>GEO (Group on Earth Observations) suggest earth observations and geospatial information can provide direct measure or indirect support to the Indicator.</p>
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	14.4.1: Proportion of fish stocks within biologically sustainable levels	FAO	I	<p>FAO indicate no country-level data is available as the derivation of this indicator is data hungry and technically demanding as it needs stock assessment.</p> <p>GEO (Group on Earth Observations) suggest earth observations and geospatial information can provide direct measure or indirect support to the Indicator</p>

Global SDG Target	Global SDG indicator	Global SDG Data Custodian	Tier @ Nov. 2019	Data sources recommended in metadata documents by global SDG data custodians
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	14.5.1: Coverage of protected areas in relation to marine areas	UNEP-WCMC with UNEP and IUCN (according to Tier Classification, last viewed Nov 2019) and <a href="#">Data Collection</a> , last viewed Nov 2019).	I	<p>Spatial overlap between digital polygons from two different world databases – the World Database of Protected Areas and World Database of Key Biodiversity Areas.</p> <p>Protected area data are compiled by ministries of environment and other ministries responsible for the designation and maintenance of protected areas.</p> <p>Key Biodiversity Areas are identified at national scales through multi-stakeholder processes, following standard criteria and thresholds.</p> <p>GEO (Group on Earth Observations) suggest earth observations and geospatial information can provide direct measure or indirect support to the Indicator</p>
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	14.6.1: Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing	FAO	I	<p>FAO calculates the indicator based upon responses by FAO Member States to the biennial questionnaire for monitoring the implementation of the Code of Conduct for Responsible Fisheries. Only countries who have returned the questionnaire and agreed to release their data will have their indicator scores publicly available on the global SDG database.</p>

Global SDG Target	Global SDG indicator	Global SDG Data Custodian	Tier @ Nov. 2019	Data sources recommended in metadata documents by global SDG data custodians
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	<p>14.7.1: Sustainable fisheries as a proportion of GDP in small island developing States, least developed countries and all countries, measured as value add of sustainable marine capture fisheries divided by GDP</p> <p><a href="#">Proxy</a> approved at UNSC 50<sup>th</sup> Session, March 2019 while methodological work continues and until data is available [IAEG, 2019]:</p> <p>MSC Certified Catch (UNEP-WCMC) Data/methodology: <a href="https://www.bipindicators.net/indicators/msc-certified-catch">https://www.bipindicators.net/indicators/msc-certified-catch</a></p>	FAO (according to <a href="#">data collection</a> , last viewed Nov 2019)	I	<p>Value-added of fisheries and aquaculture and GDP are derived by FAO from the UN DESA SD National Accounts Official Country Data, or OECD Annual National Accounts DB in case of missing values.</p> <p>Stock status is modelled from base data in FAO Review of the State of World Marine Fishery Resources</p>
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	<p>14.a.1: Proportion of total research budget allocated to research in the field of marine technology</p> <p>National government research expenditure I marine technology/ national governmental R&amp;D expenditure</p>	IOC-UNESCO	II	Global data values are obtained from UNESCO IOC and UNESCO UIS who source country level data from a mixture of NSOs (for gross domestic expenditure on research and development and in the future, for government research expenditure in marine technology); ministries responsible for ocean science (for government research expenditure in marine technology) and universities (for government research expenditure in marine technology)

Global SDG Target	Global SDG indicator	Global SDG Data Custodian	Tier @ Nov. 2019	Data sources recommended in metadata documents by global SDG data custodians
14.b: Provide access for small-scale artisanal fishers to marine resources and markets	14.b.1: Progress by countries in the degree of application of a legal/regulatory/policy /institutional framework which recognizes and protects access rights for small-scale fisheries	FAO	I	The national indicator is calculated based on three questions on small-scale fisheries from the FAO Code of Conduct for Responsible Fisheries questionnaire, transformed into weighted variables for purpose of calculating a country score, and then converted into bands (very low, low, medium, high, very high implementation)
14.c: Enhance 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, 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"	14.c.1: 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 United Nation Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources	OLA/ DOALOS	III	The proposal is to use a voluntary web-based questionnaire to member States  According to the metadata, involvement of the National Statistical System is not expected