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Intergovernmental Oceanographic Commission

SDG indicator 14.3.1

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- 1. Increased understanding of the SDG 14.3 target and 14.3.1 indicator purposes.
- 2. Understanding what are the different parts of the methodology.
- 3. Identification of potential areas for improvement at the national level to support data reporting.

17 objectives to transform our world: 2030 Agenda





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SDG indicator framework



Oceanographic

- SDG Goals and Targets were set by Member States with the adoption of the 2030 Agenda for Sustainable Development (2015).
- The General Assembly tasked the UN Statistical Commission with developing a monitoring framework.
- The Inter-Agency and Expert Group on the SDG Indicators (IAEG-SDG), composed of 28 Member States as well as regional and international agencies as observers, was established to develop the indicator framework.
- IAEG-SDG agreed on a global indicator framework of 231 unique indicators. The total number of indicators listed in the global indicator framework of SDG indicators is 247. However, twelve indicators repeat under two or three different targets indicators. The IAEG aggreed on UN agencies as custodians of the various indicators. (adopted by UN General Assembly in 2017).

SDG 14 – 10 targets – 10 ways to collect data







14.1	UNEP supported by IOC-UNESCO	Tier II	2025
14.2	UNEP supported by IOC-UNESCO	Tier II	2020
14.3	IOC-UNESCO	Tier II	-
14.4	FAO	Tier I	2020
14.5	UNEP-WCMC supported by IUCN	Tier I	2020
14.6	FAO	Tier I	2020
14.7	FAO supported by UNEP-WCMC	Tier II	2030
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- Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Target 14.3Minimize 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

Tier II Indicator conceptually clear, established methodology and standards available but data are not regularly produced by countries

What does Custodianship mean?

- Develop internationally agreed standards, coordinate the indicator development, and support increased adoption and compliance with the internationally agreed standards at the national level;
- Collect data in relevant domain from countries (or regional organizations) as appropriate through existing mandates and reporting mechanism to provide internationally comparable data and calculate global and regional aggregates;
- 3. Strengthen national statistical capacity and improve reporting mechanisms







Pendelton et al. 2016

SDG indicator 14.3.1 development – THANK YOU GOA-ON













Who contributes to the 14.3.1 SDG indicator data collection?

All UN countries signed up for the 2030 Agenda and accepted regular NATIONAL reporting



- Capacity for ocean data at the administrative level of different nations is limited.
- If NODCs exists this is supposed the 'main contributor' however data and meta data collected there might be not sufficient.
- At this stage you might already contribute your data sets to other relevant data bases, however the data transfer is still not automated and often metadata sets are incomplete for the 14.3.1 purpose.
- Missing National Statistical offices to date, however this is important to increase awareness, connect scientists with higher levels and different stakeholders
- Contributions from scientists, NODCs, IOC focal points and NSOs would increase use of the information obtained, increase visibility and facilitate global, regional comparisons.
- Contributions from scientists would allow IOC to help to increase communication with government representatives and data managers.







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Data file



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14.3.1 provides guidance on:

- Definitions,
- Units
- Rationale for inclusion
- Computation method aggregation and disaggregation
- Sampling strategy, including sampling frequency
- Methods and guidance available to countries for the compilation c the national level, including:
 - o overview on best practices,
 - o standard operating mechanisms,
 - o measurement and data collection,
 - measurement and data quality
- Data sources, including:
 - \circ the collection process,
 - o data visualization and
 - quality control mechanisms





14.3.1 data portal – Facilitating Reporting https://oa.iode.org/

Title

Title

ownload all



Intergovernmental Oceanographic Commission

Welcome to the SDG 14.3.1 data portal

SDG 14.3.1 data portal



This SDG 14.3.1 Data Portal is a tool for the submission, collection Sustainable Development Goal 14.3.1 Indicator: Average marine ac

In 2015, the United Nations adopted the 2030 Agenda and a set o to "conserve and sustainably use the oceans, seas and marine res UNESCO was identified as the custodian agency for the SDG Targ scientific cooperation at all levels", and the associated SDG Indica stations").

Thanks to the cooperation and support received by the Commissie (IODE), international ocean acidification experts (including data m was developed and is now freely available.



Q: The SDG 14.3.1 Indicator calls for the "Average marine acidity (pH) measured at agreed suite of representative sampling stations." Should I submit all of my pH and carbonate data or the average value of my pH data over the year?

Q: What is the minimum number of parameters for data submission to SDG 14.3.1?

Q: Is only measured data acceptable for submission, or can I also include calculated values for certain carbonate chemistry parameters?

TITLE RV Celtic Explorer underway pCO2 data for 2018

Nuka Arctica

G O Sars

Underway physical oceanography and carbon dioxide measuremen

RV Celtic Explorer underway pCO2 data for 2017

Underway measurements of Trans Carrier 2020

Underway measurements of pCO2 on Nuka Arctica in 2020

R/V Lance

Trans Carrier

Dronning Maud Land (DML), Southern Ocean, Antarctica; project til climate change (SOPHY-CO2)". RV Kronprins Haakon

GIFT database (2012-2015): Mooring line hydrographic and pH data

Sea surface measurements of temperature, salinity, dissolved inorg Newfoundland in the North Atlantic Ocean from 1993-07-01 to 2017

Water column CO2 system measurements from January 2016 to Jan

practice and methods approved by the scientific ocean acidification community. It further offers support on how to and what kind of di ensure the production of guality controlled global and possibly regional products.

14.3.1 data







Tasman Bav – New Zealand, 2015-2017



HOTS – USA, 2010-2018



14.3.1 data





*pCO*₂ and *pH* records from the Hawaii Ocean Time Series (HOTS) in the Pacific Ocean.





*pCO*₂ and *pH* records from the Bermuda Atlantic Time Series (BATS).





pCO₂ and pH records from the European Station for Time series in the Ocean Canary Islands (ESTOC).

Year	Annual equally weighted mean pH				
	HOTS	BATS	ESTOC		
1989	8.108				
1990	8.119				
1991	8.111	8.113			
1992	8.107	8.118			
1993	8.110	8.125			
1994	8.107	8.115			
1995	8.104	8.105	8.077		
1996	8.096	8.105	8.104		
1997	8.100	8.095	8.090		
1998	8.094	8.114	8.094		
1999	8.095	8.102	8.110		
2000	8.087	8.106	8.099		
2001	8.087	8.112	8.088		
2002	8.089	8.090	8.093		
2003	8.093	8.101	8.086		
2004	8.091	8.094	8.088		
2005	8.083	8.084	8.080		
2006	8.087	8.087	8.077		
2007	8.077	8.090	8.080		
2008	8.079	8.082	8.087		
2009	8.076	8.087	8.083		
2010	8.078	8.110			
2011	8.078	8.085			
2012	8.068	8.086			
2013	8.069	8.085			
2014	8.071	8.070			
2015	8.067	8.081			
2016	8.070	8.133			
Annual average	0.0017	0.0017	0.001		
change pH					

202

Outcome Documents/information

AND SUSTAINABLY USE THE OCEANS, SEA AND



Intergovernmental Oceanographic Commission

The Sustainable Development Goals Report 2019





14 <u></u>	CONSERVE AND SUSTAINABLY USE THE OCEANS, SEA AN Marine resources for sustainable development

90%

67%



MEASURES, THE

FIRST BINDING

INTERNATIONAL

UNREPORTED AND

UNREGULATED FISHING





United Nations >> Department of Economic and Social Affairs >> Statistics Division

HOME NEWS HLG-PCCB IAEG-SDGs EVENTS SDG INDICATORS - REPORTS - FUNCT TOOLKIT-

SDG indicators

Welcome to the dissemination platform of the Global SDG Indicators Database. This platform provides access to data compiled through the UN System in preparation for the Secretary-General's annual report on "Progress towards the Sustainable Development Goals"

Please read our Frequently Asked Questions if you need help using this site. The development of this global SDG database dissemination platform is an ongoing process. Please send your feedback and suggestions for improvements to statistics@un.org

Starting 2019, major updates are expected to be released in March, June/July, September and December. Earlier versions of the database are available here.

Explore the Metadata repository

E All



GOAL 17 Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

This interface works best with Google Chrome and Firefox and may not properly work under other browsers.





Continuing ocean acidification threatens the marine environment and ecosystem services

The ocean is the planet's largest carbon sink, absorbing around 23 per cent of annual CO₂ emissions generated by human activity and helping to mitigate the impacts of climate change. However, the absorbed CO₂ has caused seawater to become more acidic, evidenced by a 26 per cent drop in pH levels since pre-industrial times. Ocean acidification endangers coral reefs and other key species that are the base of the marine food chain, and has negative effects on marine ecosystem services, including fisheries and aquaculture, coastal protection, transportation and tourism. The more acidic the ocean becomes, the lower its capacity to absorb CO₂ from the atmosphere and to moderate climate change. Information drawn from a new ocean acidification data portal shows an increase in pH variability (up to 10–30 per cent in the past five years) and in ocean acidity. By the end of this century, a 100–150 per cent rise in acidity is projected, affecting half of all marine life.

Calculated ocean surface pH values (minimum, average and maximum) for the period 1 January 2010 to 8 January 2020 from global measurements



IOC contributes to the 'WMO Statement on the State of the Global Climate' and 'The Global Climate in 2015-2019'

 pCO_2 and pH record for the Hawaii Ocean Time-Series in the Pacific Ocean, with five-year running average pCO_2 and pH indicated by black bars.

Clearly visible increase in the pCO₂ and simultaneous decrease in pH

© Australian Bureau of Statistics, GeoNames, Microsoft, Navinfo, TomTom, Wikipedia

Minimum pH O Maximum pH + Average pH

Calculated surface pH values based on ocean acidification data submitted to the 14.3.1 data portal (<u>http://oa.iode.org</u>). Blue crosses – average annual pH reported from quality assured measurements; orange diamonds – annual minimum pH values reported for each station; green circles – annual maximum pH values reported for each station.

Map illustration surface ocean carbonate chemistry measurement locations received for the 14.3.1 ocean acidification reporting. Blue – countries whose data was reported in accordance with the SDG 14.3.1 Indicator Methodology; dark grey – countries reporting ocean acidification observation data not collected in accordance with the SDG 14.3.1 Indicator Methodology.

SDG 14.3.1 reporting – GOOD news

2019 – 8 countries submitted data and information
2020 – 30 countries submitted data and information

Capacity training done by GOA-ON and partners actively supports this initiative

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Intergovernmental Oceanographic Commission Federated data system for ocean acidification data

The global call to collect ocean acidification data?

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Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

14 LIFE BELOW WATER Target 14.3 Minimize and
address the impacts of
ocean acidification, incl.
through enhanced
scientific cooperation at all
levels.Image: Target 14.3 Minimize and
address the impacts of
ocean acidification, incl.

Indicator 14.3.1 Average marine acidity (pH) measured at agreed suite of representative sampling stations.

Currently a number of national and international projects and databases also collect and host data relevant for the SDG 14.3.1 reporting.

To avoid duplication of efforts, and to increase the amount of data sets collected towards the SDG Indicator, it is envisaged to develop a federated system to automatically harvest data from these other relevant databases on a regular basis.

With the development of the federated system the 14.3.1 portal would become one of the platforms to be harvested on a regular basis and could act as a mirror to support visualization/exchange and ensure long term availability of the data.

Current 14.3.1 portal

Intergovernmenta Oceanographic Commission

Currently the portal fulfils basic functions related to the collection of data towards the SDG 14.3.1 Indicator. Users can:

- 1. upload data and metadata files in excel format directly to the portal;
- 2. fill in the metadata information online;
- 3. include several data sets per metadata file (e.g. for repeated measurements);
- 4. check data automatically to ensure the files were uploaded/prepared correctly;
- 5. verify the localization data on a map.
- 6. search for data sets submitted and download;
- 7. see available data sets on the map,
- 8. find more information on a dedicated FAQ webpage.

Tasks

- i. Set up a federated data integration/ingestion system using DAP (preferably ERDDAP) services for data ission relevant to the SDG 14.3.1 Indicator. The main outcome would be to establish ways to harvest data and metadata from different NODCs, and international data bases to obtain information relevant for the 14.3.1 SDG indicator involving relevant NODCs, NOAA, SOCAT, EMODNET, GLODAP among others, to agree on the metadata and data as well as with IODE's Ocean Data and Information System (ODIS) and IODE Ocean InfoHub
- **ii.** Develop visualization tools embedded in the federated system, according to the SDG 14.3.1 methodology, to include maps showing the origin of the datasets received, organised by data quality; maps depicting trends for long-term datasets (>5 years).
- iii. Improve the ingestion of relevant data provided by individual scientists, research organizations, as well as other data centres and data platforms to the SDG 14.3.1 Data Portal, and ensure interoperability of relevant data; Update and upgrade the SDG 14.3.1 Data Portal to include additional settings for data providers and users, including search functions, downloading of data sets, data quality assurance mechanisms, FAQs and help desk. The newly established 14.3.1 data portal would be part of the federated system; however, to ensure the compatibility and that it in turn feeds into the other relevant databases some further work is required, such as enabling the uploading of different formats in addition to the excel.

THANK YOU