INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
COMMISSION OCÉANOGRAPHIQUE INTERGOUVERNEMENTALE
COMISIÓN OCEANOGRÁFICA INTERGUBERNAMENTAL
МЕЖПРАВИТЕЛЬСТВЕННАЯ ОКЕАНОГРАФИЧЕСКАЯ КОМИССИЯ
اللجنة الدولية الحكومية لعلوم المحيطات
政府间海洋学委员会

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IOC Circular Letter No 2970
(Available in English, French and Spanish)

IOC/VR/KI/KS
31 October 2023

To : IOC Member States (Official National Coordinating Bodies for liaison with the IOC)

C.c. : Permanent Delegates/Observer Missions to UNESCO, and
National Commissions for UNESCO in IOC Member States
IOC Officers

Subject: Fifth annual data compilation towards Sustainable Development Goal 14 Indicator 14.3.1: average marine acidity (pH) measured at agreed suite of representative sampling stations

With this letter, I would like to invite all IOC Member States for the fifth time since 2019 (IOC Circular Letter 2792; Circular Letter 2815 in 2020; Circular Letter 2859 in 2021 and Circular Letter 2911 in 2022) to contribute to the annual ocean acidification data collection in relation to the Sustainable Development Goal 14.3.1 Indicator: *'Average marine acidity (pH) measured at agreed suite of representative sampling stations.'* A similar invitation has been sent to National Statistical Offices (NSOs) and to IODE National Oceanographic Data Centres (NODCs).

Data submitted towards the SDG 14.3.1 Indicator must be validated as "national data submissions from the Member States of IOC". To ensure this, the data should be submitted through a relevant national agency such as a National Oceanographic Data Centre (NODC), a National Statistical Office (NSO), or a similar agency officially designated by the country, which will then forward the data to the IOC as an official national data submission. We are counting on you, as the national focal point, to help with data collection by mobilising the data providers in your country to transmit the required data to the national agency which has been identified and mandated to transmit the national data collected under indicator 14.3.1 to the IOC.

To facilitate the data submission, IOC has developed an online portal based on the SDG 14.3.1 Indicator Methodology and the associated data and metadata files, in cooperation with the International Oceanographic Data and Information Exchange (IODE). The online data submission interface allows for the uploading of the completed data and metadata files, with some additional information. The data portal also serves to store the data and make the data accessible to all. All data submissions should follow the instructions and guidelines laid out in the SDG 14.3.1 Indicator Methodology. An annex with the technical background and practical information is also attached hereafter for additional reference.

To facilitate this fifth annual compilation, we invite the IOC National Focal Points to join the IOC Secretariat for an online English-speaking workshop introducing the SDG Indicator 14.3.1 Methodology, including required data and metadata as well as the data collection and data validation procedures. The objective of the workshop is to support Member States in obtaining the requested information at the national level and improving national SDG reporting. This workshop will be held in two sessions, and the Secretariat invites you to register for the session most suited to your time zone. The first session will take place on Monday, 20 November at 2:00 p.m. UTC, and the second on Tuesday, 21 November 2023 at 8:00 a.m. UTC.

Following this letter, we look forward to receiving your national contributions from the relevant agencies in your country via the above-mentioned SDG 14.3.1 data portal (https://oa.iode.org/) by **10 January 2024**.

Please feel free to contact the IOC Secretariat, Ms Kirsten Isensee (k.isensee@unesco.org) and Ms Katherina Schoo (k.schoo@unesco.org) for further information.

Yours sincerely,

[signed]

Vladimir Ryabinin
Executive Secretary

Enclosure: A technical background and practical information on the submission of national data towards SDG 14.3.1 Indicator

ANNEX: A technical background and practical information on the submission of national data towards SDG 14.3.1 Indicator

Technical background

In 2015, the United Nations adopted the 2030 Agenda and a set of Sustainable Development Goals (SDG), including a goal dedicated to the ocean, SDG 14, which calls to *'conserve and sustainably use the oceans, seas and marine resources for sustainable development'*. This constitutes an essential point of reference for IOC's engagement with its Member States, as well as for its programmes at the global, regional and country levels.

During the same year at its 46th session, the United Nations Statistical Commission created an Interagency and Expert Group on SDG Indicators (IAEG-SDGs) composed of Member States with the task to: (i) develop an indicator framework for the follow-up and review of the goals and targets of the 2030 Agenda at the global level; (ii) provide technical support for the implementation of the approved indicator and monitoring framework over the 15-year period leading up to 2030; and (iii) regularly review methodological developments and issues related to the indicators and their metadata.

One year later in 2016, the IOC Executive Council at its 49th session through decision EC-XLIX/4.1(I) decided that IOC should 'provide normative support to countries to establish, implement, monitor and report on implementation of the 'Ocean' SDG 14 and its related targets'.

That same year, the IAEG-SDGs agreed on a list of indicators for all SDGs, which was approved by the UN Statistical Commission. IOC was identified as the custodian agency for two SDG 14 targets and related indicators, namely ocean acidification (Target 14.3) and marine scientific research (Target 14.a). As the custodian agency, IOC was tasked with developing the methodology for the SDG 14.3.1 Indicator '*Average marine acidity (pH) measured at agreed suite of representative sampling stations*.' IOC is further responsible to collect relevant data towards the indicator from Member States and to report the results to the United Nations.

The SDG Indicator Methodology 14.3.1, endorsed by the IOC Executive Council at its 51st session in 2018, provides the necessary guidance on how to conduct ocean acidification observation, using different types of technology and measuring different variables, including pH, carbon dioxide partial pressure [*p*CO2], total dissolved inorganic carbon [CT/DIC], and total alkalinity [AT/TA], as well as salinity and temperature. It further provides support on how to and what kind of data sets to submit to IOC, to ensure the production of quality controlled global and possibly regional products. The Methodology was developed in collaboration with IOC's International Oceanographic Data and Information Exchange Programme (IODE), international ocean acidification experts (including data managers) and the Global Ocean Acidification Observing Network (GOA-ON).

The IOC is currently collaborating with data managers and other experts in the field of ocean carbon observations to develop a federated data system for the SDG 14.3.1 Data Portal, linking this data portal to other national and international databases hosting ocean acidification data. When this system is operational, datasets relevant to the SDG 14.3.1 Indicator will be automatically exchanged between databases, thereby eliminating the need for data originators and data managers to submit their data to more than one database.

All of the data will be freely available, in accordance with the FAIR data principles[1] and the IOC Data Exchange Policy and Terms of Use (2023) (IOC decision A-32/4.4.)[2]. Open data access is encouraged, and it is expected that data and metadata contributions will be shared and used under one of the following Creative Commons licenses: data sets which can be freely shared without restrictions (CC0, CC-BY); with restrictions for commercial use (CC-NC); as well as those which only

[1] FAIR data principles: https://www.nature.com/articles/sdata201618
[2] Decision A-32/4.4 setting out the text of the IOC Data Exchange Policy and Terms of Use (2023) can be found at https://www.iode.org/policy and in document IOC/A-32/Decisions at https://oceanexpert.org/document/32845

allow for IOC-UNESCO to derive products used for the purpose of the SDG 14.3.1 Indicator reporting. The data submission process on the portal includes and explains all the steps outlined above.

Practical information

1. **DATA SUBMISSION:** Data submitted towards the SDG 14.3.1 Indicator must be validated as national data submissions from the Member States of IOC. To ensure this, the data should be submitted through a relevant national agency such as a national Oceanographic Data Centre (NODC), or a similar agency officially designated by the country, which will then submit the data to the IOC as an official national data submission. Due to the novelty of collecting ocean acidification data on a global scale, the pathways and infrastructure required for this data collection may not always be in place. Whenever data is submitted to the SDG Indicator through different pathways, be it by individual researchers, data originators or research institutes, IOC will contact the relevant national agency for validation of the submitted dataset as a national data submission by the IOC Member State. Data originators may be unaware of the relevant data managers and the NODCs responsible for handling their data. NODCs may not be equipped to manage the data or may be altogether absent.

2. **NATIONAL DATA CENTRES:** For this reason, data originators are encouraged to enquire about the relevant data centres in their countries. The International Oceanographic Data and Information Exchange (IODE) of the IOC has a list of national data centres available on its website[3]. For those countries not listed, data originators can contact the IODE to receive further guidance or get in contact with their national IOC focal point[4]. In those cases where countries do not have a National Oceanographic Data Centre, the IODE can assist with the establishment of an Associated Data Unit (ADU), which, once it has been authorized by the country in question, can also submit official national data.

3. **COMPLEMENTARY DATA SOURCES:** Simultaneously, data managers may not be aware of the researchers collecting the relevant ocean acidification observation data in their country (data originators). Therefore, data generated by data originators may not be submitted to the relevant data centres and thus ultimately not be submitted towards the Indicator. One of the sources data managers can use to connect to data originators with relevant data in their country is the Global Ocean Acidification Observing Network (GOA-ON[5]) and its data explorer[6]. GOA-ON has members in over 100 countries, and many have listed their observation assets on the data portal. Additionally, contacting national and regional research institutes, universities and agencies can help connect data managers with data originators.

4. **DATA PORTAL:** To facilitate data submission, the IODE hosts a data portal[7] for the SDG 14.3.1 Indicator. The portal consists of a web-based interface, which enable both data originators and data managers to submit the data and metadata sheets online. The data portal also serves to store the data and make the data accessible to all. All data submitted towards the SDG 14.3.1 Indicator will be stored on a server hosted by the International Oceanographic Data and Information Exchange (IODE) of the IOC. The server will include a data portal for the submission (see above), storage, quality control and sharing of the data. To submit data, please follow the Instructions on the data portal page. For additional guidance about the

[3] The list of national data centres can be found here: https://www.iode.org/index.php?option=com_content&view=article&id=61&Itemid=100057
[4] The list of IOC national focal points is available here: https://oceanexpert.org/doclist/78
[5] GOA-ON website: http://goa-on.org/home.php
[6] The GOA-ON data explorer portal is here: http://portal.goa-on.org/Explorer
[7] SDG data portal: https://oa.iode.org

submission process, please refer to the ‘Frequently Asked Questions’ tab on the data portal page.

5. **ALTERNATIVE DATA SUBMISSION OPTIONS:** Alternative submissions using appropriate data formats (e.g.: .csv or .xls) are also accepted. For that purpose, templates for the data and metadata files for the required information can be found at the online portal (https://oa.iode.org/). These data files can be downloaded and, once completed, can be sent directly to the IOC Secretariat at the following email addresses: Ms Kirsten Isensee (k.isensee@unesco.org) and Ms Katherina Schoo (k.schoo@unesco.org).