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 3035
(Available in English, French, Spanish, Russian)

IOC/VH/KE/YJL
25 March 2025

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

C.c. : Permanent Delegations to UNESCO of IOC Member States
National Commissions for UNESCO of IOC Member States
IOC Officers
Chair and Vice-Chairs of IOC Subsidiary Bodies (Scientific, Technical and Regional)

Subject: Request for information for the compilation of the third edition of the *Global Ocean Science Report* (GOSR-III)

Based on two decisions of its Executive Council in 2014 (EC-XLVII/6.2) and its Assembly in 2015 (IOC-XXVIII/5.1), the Intergovernmental Oceanographic Commission of UNESCO undertook to prepare and publish the *Global Ocean Science Report*, a UNESCO Flagship Global Report, aiming at covering a five-year period. The first edition of the GOSR was published in 2017 and assessed for the first time the status and trends in ocean science capacity around the world and was followed by a second edition published in 2020.

The *Global Ocean Science* Report, or GOSR, is a resource for policymakers, academics and other stakeholders seeking to harness the potential of ocean science to address global challenges by informing strategic decisions related to funding for ocean science, pointing to opportunities for scientific collaborations and fostering partnerships aimed at developing further capacity in ocean science. Importantly, the GOSR is utilized to monitor progress against indicator 14.a.1 of Sustainable Development Goal 14: 'Proportion of total research budget allocated to research in the field of marine technology' and therefore represents Member State reporting on this indicator.

The GOSR plays a central role in driving a transformative process aimed at providing the necessary capacities in ocean science in the context of the United Nations Decade of Ocean Science for Sustainable Development (2021–2030), the 2030 Agenda as a whole, and Sustainable Development Goal (SDG) 14 (Life below water), in particular. It is intended to serve as a benchmark to assess progress in capacity development in ocean science. The third edition of the GOSR is expected to be published in early 2026.

With this letter, I invite IOC Member States to contribute data and information on ocean science funding, capacity and infrastructure through an online questionnaire hosted on the GOSR Data Portal. GOSR.

To facilitate the compilation of data, I invite Member States to nominate a national focal point for GOSR-III using the nomination form attached to this letter. Once designated, the focal point will have access to the GOSR data portal, and to the online questionnaire. The secretariat would like to receive your nominations no later than 18 April 2025 by email to Ms Yun Jie Lee (yj.lee@unesco.org) and Dr Kirsten Isensee (k.isensee@unesco.org).

In completing the questionnaire, Member States are encouraged to use the most reliable and authoritative sources in their countries, including ocean science institutions and national coordinators of ocean science programmes. The national focal point for GOSR-III should also naturally rely on the national focal point for the International Oceanographic Data and Information Exchange programme (IODE) (see the IODE community).

A pdf version of the questionnaire is attached to this circular letter and available via OceanExpert at https://oceanexpert.org/document/35940 to give Member States quick access to the information being requested and to facilitate exchanges between the various institutions and data sources. Contributions to the GOSR, however, should preferably be submitted via the online questionnaire available on the GOSR data portal.

Following the nomination of focal points, the Secretariat would like to receive online submissions of the questionnaire from Member States no later than 31 May 2025.

To assist Member States completing their online submissions, two online information sessions will be organized by the Secretariat during April 2025. The dates and times of these information sessions will be announced in the *IOC e-Newsletter* and by direct communication to the designated focal points for GOSR-III.

For further details and any questions on GOSR III, please contact the Head of the Ocean Science Section, Dr Karen Evans (k.evans@unesco.org) with copy to Dr Kirsten Isensee (k.isensee@unesco.org).

With the assurances of my highest consideration, I remain,

Yours sincerely,

[signature]

Vidar Helgesen
Executive Secretary

Enclosures: 1/ Nomination form for GOSR III National Focal Point.
2/ GOSR-III questionnaire.

(available in English and French only)

Annex 1/ *Global Ocean Science Report* (GOSR) National Focal Point Nomination Form

Name:

Position:

Institution:

Tel:

Email:

Postal Address:

Additional comments:

Nomination submitted by:

Signature:

Position

Government Department/Agency:

Date:

Nomination Forms duly completed and signed should be sent by **18 April 2025** to the IOC Secretariat by email to yj.lee@unesco through one of the following channels:

1. The coordinating body for liaison with IOC (see the list)
2. Head of UNESCO National Commission
3. Permanent Delegate to UNESCO

Note: Any questions regarding the GOSR and the GOSR Editorial Board can be addressed to the Head of the Ocean Science Section, Dr Karen Evans (k.evans@unesco.org), with a copy to Dr Kirsten Isensee (k.isensee@unesco.org).

Annex 2/ The *Global Ocean Science Report*-III Questionnaire Form

The Global Ocean Science Report III (GOSR-III) questionnaire is a mechanism used to gather information about current ocean science efforts and capacity in IOC Member States. Responses to the questionnaire will be collated and analyzed for the purposes of the production of the third edition of the IOC-produced Global Ocean Science Report (GOSR). Information gathered through this questionnaire will be archived and managed in the related Global Ocean Science Report data portal (https://gosr.ioc-unesco.org/home) following the IOC data policy and terms of use (https://iode.org/resources/ioc-data-policy-and-terms-of-use-2023/).

IOC Member States contributing to the GOSR via this questionnaire should identify one focal point who provides the online submission of this questionnaire and serves as the contact point for the submission. The submission by this contact point is expected to reflect a consolidated national authorized response. Multiple submissions associated with a Member State will not be accepted.

This PDF provides a working example of the online questionnaire of the Global Ocean Science Report (GOSR). Previous contributions to the first and second edition will be shared with the IOC focal point where relevant to assist with completing the questionnaire.

In the online version of the questionnaire, submitting focal points will be able to save answers to each of the questions at any point as they progress through the questionnaire before final submission to the IOC Secretariat. The questionnaire is divided into seven parts:

Part A Respondent details: Identification of the Member State focal point, including address, institution and email address.

Part B Ocean science governmental organization and general information: Information about ocean science organization in your country, including ministerial oversight, ocean science institutions, ocean science strategies and focus areas.

Part C Ocean science spending: Information about spending on ocean science efforts within your country. If this information is not available, please provide estimated data calculated using budget allocations for ocean science or other methodologies and identify the estimation via an explanation. Ocean science spending should be reported in your national currency (preferably).

Part D National research capacity and infrastructure: Information about ocean science personal in general, including data about the age distribution and gender of researchers; ocean observation platforms and technologies including vessels; emerging ocean science technologies.

Part E Oceanographic data and information management and exchange: Information about oceanographic data and information facilities, services, users provided in your country.

Part F Capacity development and transfer of marine technology: Information about ocean capacity development needs in your country, as well as related activities your country contributes to, or benefits from.

Part G Sustainable development: Information about ocean science related actions related to the 2030 Agenda, in particular the Sustainable Development Goal 14 ‘Conserve and sustainably use the oceans, seas and marine resources for sustainable development’.

The IOC secretariat acknowledges that providing information to each question of the questionnaire might be difficult. The IOC Secretariat will be organizing an information session to support Member States in

providing input for the third GOSR in April 2025. Member State focal points are also encouraged to contact the IOC Secretariat with any questions/queries they might have.

Many information requests in the questionnaire include comment sections, where further context associated with data and information provided can be included. This includes identifying if data provided are estimates or information comprises part of the ocean science landscape in your country (e.g. human capacity data for only one ocean science institution). If data provided are estimated, please state the source of these estimates and if data are only representative of part of the ocean science system or ocean science activities, please provide further information that identifies to what extent the data reflects the overall ocean science activities in your country.

Member States are encouraged to provide the best information available, obtained via consulting colleagues in your country and relevant ocean science institutions. Part E of the questionnaire focuses on data management and data services. We encourage focal points to contact national IODE focal points to assist in collating information for this section of the questionnaire (see the list of IODE National Oceanographic Data Center contacts, Associated Data Units contacts and Associate Information Unit contacts).

For further information on the report and the questionnaire please send an email to Ms. Yun Jie Lee (yj.lee@unesco.org) and Ms. Kirsten Isensee (k.isensee@unesco.org) .

PART A: RESPONDENT DETAILS

PLEASE NOTE THAT THIS INFORMATION WILL BE USED TO FOLLOW UP WITH THE RESPONDENT IN CASE FURTHER QUESTIONS REGARDING A SUBMISSION ARISE.

DATA AND INFORMATION PROVIDED ARE TREATED AS NATIONAL AUTHORIZED SUBMISSION. INFORMATION AND DATA GATHERED WILL BE MANAGED FOLLOWING THE IOC DATA POLICY AND TERMS OF USE (HTTPS://IODE.ORG/RESOURCES/IOC-DATA-POLICY-AND-TERMS-OF-USE-2023/).

1. Country
   [free field]
2. Full name respondent (Last Name, First Name)
   [free field]
3. Organization
   [free field]
4. Postal address
   [free field]
5. Email address
   [free field]
6. OceanExpert ID (www.oceanexpert.net)
   [free field]

PART B: OCEAN SCIENCE GOVERNMENTAL ORGANIZATION AND GENERAL INFORMATION

OCEAN SCIENCE GOVERNMENTAL ORGANIZATION AND GENERAL INFORMATION: INFORMATION ABOUT OCEAN SCIENCE ORGANIZATION IN YOUR COUNTRY, INCLUDING MINISTERIAL OVERSIGHT, OCEAN SCIENCE INSTITUTIONS, OCEAN SCIENCE STRATEGIES AND FOCUS AREAS.

7. Which ministry(ies) manage/coordinate/fund/facilitate ocean science in your country? (multiple answers possible)
   [multiple choice; multiple select]

Ministry of agriculture
Ministry for culture
Ministry for defense
Ministry for education/higher education
Ministry of energy
Ministry for environment
Ministry for fisheries
Ministry for food security
Ministry of health
Ministry for planning
Ministry for public works
Ministry for research and development
Ministry for science and technology
Ministry for the sea
Ministry of transport
Ministry of economy
Office of the president
Office of the prime minister
Others (Please name the respective ministry/ies):

Comments:
[free field]

8. Please list research institutions and universities or university faculties/departments specialized in ocean science in your country. Please provide the name and full address and if available the OceanExpert institution ID (https://www.oceanexpert.net/) .
   [paragraph]

9. Does your country have a national ocean science strategy?
   [multiple choice; single select]
   Yes
   No
   If yes, please provide the details of where this might be able to accessed online (URL): [free field]

10. If you answered yes to question 9, does the strategy incorporate gender-related elements?
    [multiple choice; single select]
    Yes
    No

11. Please rate each of the below thematic areas of ocean science individually with regard to relevance for your country (1 lowest rating, 5 highest rating). Relevance can be based on the number of institutions with a focus on the topic, national strategies focused on the topic, investment in science focused on the topic etc.

Definitions as used in previous editions of the GOSR:
Marine ecosystems functions and processes: This category refers to marine ecosystem's structure, diversity and integrity and includes abiotic and biotic characteristics. Marine ecosystem functions include biogeochemical, chemical, physical and biological processes. They are characterized by nutrient cycles, energy flow, exchanges of material, as well as trophic dynamics and structure. All these processes are marked by a variability in—and diversity of—natural dynamics, including seasonal, temporal and spatial differences and perturbations. The report comprises the following topics under Marine ecosystems functions and processes: biodiversity; physical setting; primary production; consumption; sedimentation; respiration; aerobic and anaerobic processes across the different trophic levels; biological pump, etc.

Ocean and climate: This category refers to research on the interaction between the ocean and the atmosphere to provide better predictions and understanding of reciprocal changes in the ocean and climate system. The ocean and climate category comprises the following topics: palaeoceanography; ocean warming; ocean acidification; deoxygenation; sea-level rise; changes in ocean stratification, circulation, air-sea interaction and related services such as weather forecasting etc. but does not include studies on extreme weather events.

Ocean health: This category refers to research covering the condition of the marine environment from the perspective of adverse and cumulative effects caused by anthropogenic activities, in particular, changes in biodiversity, genetic diversity, phenotypic plasticity, habitat loss and alteration in ecosystem structure and processes. Ocean health comprises studies on marine pollution (hazardous substances and litter), marine noise, eutrophication, alien and invasive species, disruption of ecosystems, marine protected areas, and marine spatial planning, etc.

Human health and wellbeing: This category includes research on the relationship between the ocean and human health and wellbeing. Human health and wellbeing covers physical and social studies on provision of marine ecosystem services, in particular food safety as well as recreation, harmful algae blooms, and human-related social, educational and aesthetic values, etc.

Blue economy: This category refers to the research on—and in support of—sustainable use of marine resources, including the research on economically important species with regard to food security (fisheries and aquaculture). Blue growth further covers studies on the utilization of new energy resources in the ocean and marine bio-resources, research on exploitation of minerals (deep sea mining), oil and gas (ocean drilling), coastal tourism, as well as on the development of clean technologies, pharmaceuticals, cosmetics, and desalination, etc.

Ocean crust and marine geohazards: This category refers to geological/geophysical marine research, including hydrothermal vents, seismology, movements and associated marine hazards (tsunamis, gas/fluid escape above huge sub-seafloor, rapid sea-level rise, flooding, hurricanes, and extreme coastal weather events), etc.

Ocean technology: This category refers to research related to marine innovation and the design and development of equipment and systems for marine science and exploration and exploitation of ocean resources. It covers studies on marine engineering for application in research and ocean industries. Examples are development of marine energy solutions, satellites and remote-sensing techniques, Remotely Operated Vehicles (ROV), gliders, floats, sensors, new measurement devices and techniques, etc. in addition to marine geoengineering (e.g. solar radiation management and carbon dioxide removal techniques).

Ocean observation and marine data: This category refers to the collection, management, dissemination and use of marine data and information to create knowledge on the seas and ocean. This cross-cutting category underpins all marine and maritime activities in particular marine scientific research. It also covers studies on—and development of—marine data platforms, marine databases, data reporting and management activities.

	1 (lowest priority)	**2**	**3**	**4**	**5** (highest priority)
Marine ecosystem function and processes					
Ocean and climate					
Ocean health					
Human health and wellbeing					
Blue economy					
Ocean crust and marine biohazards					
Ocean technology					
Ocean observation					

Comment: [free field]

12. Have national ocean science activities, including human and technical capacities, been published by your country in a specialized report or part of national report at any time over the past 15 years (2010-2024)?
    [multiple choice; single select]
    Yes
    No
    If yes, please provide the details of where this might be able to accessed online (URL): [free field]

PART C: OCEAN R&D AND OCEAN SCIENCE EXPENDITURES

THIS PART OF THE QUESTIONNAIRE AIMS TO COLLECT DATA ON NATIONAL EXPENDITURES RELATED TO OCEAN RESEARCH AND DEVELOPMENT (R&D) AND BROADER OCEAN SCIENCE ACTIVITIES.

Definitions

Ocean Research and Development (Ocean R&*D) refers to systematic, creative, and novel research activities undertaken to expand knowledge of the ocean and its processes or to develop new technologies, methodologies, or applications related to marine environments.*

In terms of scope, ocean R&D spans multiple scientific and technological fields, including:

- *Physical and Chemical Oceanography (e.g., salinity, temperature, acidification).*
- *Marine Biology and Ecology (e.g., habitats and biodiversity).*
- *Geosciences and Marine Geology (e.g., underwater volcanism, sediment transport).*
- *Engineering and Technology (e.g., offshore structures, remote sensing tools).*
- *Social Sciences and Economics (e.g., human behaviours, livelihoods and connections to the ocean, ocean-based industries, trade and financial systems).*

Ocean R&D expenditures *include all expenses for ocean R&D performed within a sector of the economy, covering both current costs and capital expenditures for ocean R&D.*

Ocean science expenditures beyond ocean R&D *include expenses in human and technical capacity and capabilities, , the procurement and maintenance of ocean science equipment, training, support to and investment in ocean data management, and observation.*

13. Does your country track **Gross Domestic Expenditure on R&D (GERD)** specifically related to **ocean R&D**?
    [multiple choice; single select]

    Yes, ocean R&D expenditure is separately tracked.

    No, ocean R&D expenditure is included in broader industry classifications.

    If yes, and this information is made publicly available, please provide details of the website where this information is provided (URL)
    [free field]

14. If you answered yes to question 13, what is the annual **total GERD** in your country? Please provide details for the most recent year available. (Please specify currency and year) [prefilled]

    Total GERD: [free field] Currency: [free field] Year: [free field]

    GDP: [free field] Currency: [free field] Year: [free field]

    Comment: [free field]

15. What is the total annual **expenditure on ocean R&D** in your country for the most recent year available? (Please specify currency and year)
    Total annual expenditure: [free field] Currency: [free field] Year: [free field]

    Comment: [free field]

16. Is ocean R&D expenditure disaggregated across funding sectors in your national statistics?
    [multiple choice; single select]

Yes, detailed by sector (government, business, non-profit etc.)
No, ocean R&D is not separately detailed

17. If you answered yes to question 16, who funds ocean R&D in your country? (Check all that apply and provide estimates if available)
[multiple choice; multiple select]
Government (Public Sector): [maximum three-digit number] %
Business Enterprises [maximum three-digit number]%
Non-profit Organizations [maximum three-digit number]%
International Cooperation/Grants [maximum three-digit number]%
Other (please specify): [free field]

18. What are the main ocean science areas (definition see question 11) within ocean R&D receiving funding in your country?
[multiple choice; multiple select]
Marine ecosystem function and processes
Ocean and climate
Ocean health
Human health and wellbeing
Blue economy
Ocean crust and marine biohazards
Ocean technology
Ocean observation

19. Beyond ocean R&D, does your country track expenditures related to ocean science (e.g., environmental monitoring, conservation, observation, technical and human infrastructures)?
[multiple choice; single select]
Yes
No

20. If you answered yes to question 19, what are the main sources of funding for ocean science beyond R&D in your country?
[multiple choice; multiple select]
Government (Public Sector): [maximum three-digit number] %
Business Enterprises[maximum three-digit number]%
Non-profit Organizations [maximum three-digit number]%
International Cooperation/Grants [maximum three-digit number]%
Other (please specify): [free field]

21. Does your country contribute financially to international and/or regional ocean science collaboration mechanisms either through membership fees or specific donations. Examples of such mechanisms include UN bodies (including the IOC), regional intergovernmental organisations (such as the EU Commission, ICES, the Asia Pacific Network, JPI Oceans), consortia of funding bodies (such as the Belmont Forum) and convention finance mechanisms (such as the Global Environment Facility).
[multiple choice; single select]
Yes
No
I do not know

22. If you answered yes to question 21, please specify the amount of money for each collaboration for the most recent year available? (Please specify currency and year) (Maximum 5 mechanisms)
    Collaboration1: [free field] Currency: [free field] Year: [free field]
    Collaboration2: [free field] Currency: [free field] Year: [free field]
    Collaboration3: [free field] Currency: [free field] Year: [free field]
    Collaboration4: [free field] Currency: [free field] Year: [free field]
    Collaboration5: [free field] Currency: [free field] Year: [free field]
    Comment: [free field]

23. What challenges do you face in tracking ocean R&D expenditures and ocean science expenditures beyond ocean R&D?
    [multiple choice; multiple select]
    Lack of specific classification in national statistics
    Overlap with broader environmental or climate-related spending
    Decentralized funding sources make tracking difficult
    Other (please specify): [free field]

24. Do you have any additional comments regarding the tracking of Ocean R&D and ocean science expenditure beyond R&D?
    [free field]

PART D: NATIONAL RESEARCH CAPACITY AND INFRASTRUCTURE

NATIONAL RESEARCH CAPACITY AND INFRASTRUCTURE: INFORMATION ABOUT OCEAN SCIENCE PERSONAL IN GENERAL, INCLUDING DATA ABOUT THE AGE DISTRIBUTION AND GENDER OF RESEARCHERS; OCEAN OBSERVATION PLATFORMS AND TECHNOLOGIES INCLUDING VESSELS; EMERGING OCEAN SCIENCE TECHNOLOGIES.

Ocean Science Personnel

Ocean science personnel by functional categories

Researchers are professionals engaged in the conception or creation of new knowledge. They conduct research and improve or develop concepts, theories, models, techniques, instrumentation, software, or operational methods.	**Technicians and equivalent staff** are professionals that develop and deliver technical knowledge and experience in one or more fields of engineering, the physical and life sciences, or the social sciences, humanities, and the arts. They participate in research and development by performing technical tasks involving the application of concepts and operational methods and the use of research equipment, normally under the supervision of researchers.	**Other supporting staff** includes skilled and unskilled craftspeople, and administrative staff supporting research and development projects (e.g., workshop staff, vessel operators, administration officers, financial officers).

25. Please specify the number of ocean science personnel employed in your country. If information is available only on the total numbers of staff employed by institutions/organisations involved in ocean science, please provide total number only. If information on staff by functional categories is available, please provide this detail. Numbers provided can be representative of head counts (HC), where a person employed part-time is considered the same as a person employed full-time or can be representative of Full Time Equivalents (FTEs). Full-time equivalent (sometimes defined as whole-time equivalent) is calculated as the total number of hours worked by an individual in a year divided by the total number of working hours in a year. An FTE of 1.0 is equivalent to a full-time workload, while an FTE of 0.5 is equivalent to half of a full workload. Please provide any further relevant detail as a comment.

Year	HC or FTE (please specify)	Total ocean science personnel	Ocean Science Personnel categories		
			Researcher	Technical equivalent staff	Other supporting staff
2024					
2023					
2022					
2021					
2020					
2019					
2018					
2017					

Comment: [free field]

26. If information on the gender of individuals employed in ocean science is available, please specify the total number of female and male ocean science personnel employed in your country. If information on gender is available for each function (researcher, technician, supporting staff), please provide this detail. Numbers provided should be representative of head counts, so a person employed part-time is considered the same as a person employed full-time. Please provide any further relevant detail as a comment.

Year	Total ocean science personnel		Ocean Science Personnel categories					
			Researcher		Technical equivalent staff		Other supporting staff	
	Female	Male	Female	Male	Female	Male	Female	Male
2024								
2023								
2022								
2021								
2020								
2019								
2018								
2017								

Comment: [free field]

27. If information on the age of personnel employed in ocean science is available, please specify the total number of ocean science personnel in each age group employed in your country. If information on gender is available for each age group, please provide this detail for each age group. Numbers provided should be representative of head counts, so a person employed part-time is considered the same as a person employed full-time. Please provide any further relevant detail as a comment. (T = total; F = female; M = male)

	Under 25 years			25-34 years			35-44 years			45-54 years			55-64 years			65 years and more		
Year	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M
2024																		
2023																		
2022																		
2021																		
2020																		
2019																		
2028																		
2017																		

Comment: [free field]

28. If information on the qualifications held by personnel employed in ocean science is available, please specify the total number of ocean science personnel in each qualification group employed in your country (based on International Standard Classification of Education (ISCED) developed by UNESCO). If information on gender is available for each qualification group, please provide this detail for each age group. Numbers provided should be representative of head counts, so a person employed part-time is considered the same as a person employed full-time. Please provide any further relevant detail as a comment. (T = total; F = female; M = male)

	Doctoral or equivalent (ISCED 8)			Master's or equivalent (ISCED 7)			Bachelor's or equivalent (ISCED 6)			Short-cycle tertiary (ISCED 5)			All other qualifications (ISCED 4 and below)		
Year	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M
2024															
2023															
2022															
2021															
2020															
2019															
2018															
2017															

Comment: [free field]

29. Of those personnel employed by institutions/organisations involved in ocean science, please specify the percentage of those that are employed permanently or indefinitely. Please provide any further relevant detail as a comment.
    [multiple choice; single select]
    0%
    1-25%
    26-50%
    51-71%
    72-100%

    Comment: [free field]

Research Infrastructure

30. Does your country have ocean observation programme(s)/activity(ies)?
    [multiple choice; single select]
    Yes
    No

31. If you answered yes to question 30, please specify the types of observations collected.
    [multiple choice; multiple select]
    Physical observations
    Chemical observations
    Biological observations

32. Do your country's ocean observation activities include deploying satellites for ocean observation or utilizing satellite-derived observations?
    [multiple choice; multiple select]

    Yes, we deploy satellites for ocean observation.
    Yes, we contribute to the deployment of satellites for ocean observation.
    Yes, we use satellite-derived ocean data and information.
    No, we are not involved in the collection or use of satellite-derived ocean data and information.
    I do not know.

33. Does your country own and maintain research vessels?
    [multiple choice; single select]
    Yes
    No

34. Does your country utilize non-research vessels (e.g. including naval, fishing, and cargo vessels) to collect ocean observations?
    [multiple choice; single select]
    Yes
    No

35. Please specify the number of research vessels, and non-research vessels (see question 35 for examples of these) collecting ocean observations in your country (over the period 2020-2024). If information is available on the size of these vessels, please provide this detail. Please provide any further relevant detail as a comment.

Vessel type	Total number of vessels	<15 m	≥15 m <24 m	≥24 m <50 m	≥50 m <100 m	≥100 m
Research vessels						
Non-research vessels						

Comment: [free field]

36. Please list the name and IMO number of research vessels operated by your country. [One entry must be completed for each research vessel]

Vessel name: [free field] IMO number: [free field]
Vessel name: [free field] IMO number: [free field]
Vessel name: [free field] IMO number: [free field]
Vessel name: [free field] IMO number: [free field]

37. Please specify the number of days spent at sea by research vessels and non-research vessels (see question 35 for examples of these) operated by your country across the period 2020-2024. If information is available that provides the detail of days spent in your Exclusive Economic Zone (EEZ), and in Areas Beyond National Jurisdiction (High Seas), please provide this. Please provide any further relevant detail as a comment.

	Research vessel			Non-research vessel		
Year	Total No days at sea	EEZ	High seas	Total No days at sea	EEZ	High seas
2024						
2023						
2022						
2021						
2020						
2019						
2018						
2017						

Comment: [free field]

38. Are there policies and procedures relating to gender and/or prevention of harassment in place for research vessels operated by your country?
    [multiple choice; single select]
    Policies and procedures for both are in place
    Policies and procedures associated with gender only are in place
    Policies and procedures associated with prevention of harassment only are in place
    Policies and procedures for both are in development
    Policies and procedures for gender only are in development
    Policies and procedures for the prevention of harassment only are in development
    No
    I do not know

39. Are gender considerations accounted for in the design of research vessels operated by your country (see question 38 for examples)?
    [multiple choice; single select]
    Yes
    No

40. If you answered yes to question 39, please detail design specifications incorporated into the design of research vessel operating in your country (e.g., separate sleeping quarters, gender specific bathrooms, appropriate sizing of personal protective equipment, appropriate hygiene management equipment in quarters and bathrooms).
    [free field]

41. Is your country investing in the application of artificial intelligence in the field of ocean science?
    [multiple choice; single select]
    Yes
    No
    If yes, please provide more information in the comments

    Comment: [free field]

42. Does your country support research activities in the area of deep-sea research? If your answer is yes, please provide more information on the research being conducted in the comments (e.g., institutions involved, research websites, publications etc.)
    [multiple choice; single select]
    Yes
    No

    Comment: [free field]

PART E: OCEANOGRAPHIC DATA AND INFORMATION MANAGEMENT AND EXCHANGE

OCEANOGRAPHIC DATA AND INFORMATION MANAGEMENT AND EXCHANGE: INFORMATION ABOUT OCEANOGRAPHIC DATA AND INFORMATION FACILITIES, SERVICES, USERS PROVIDED IN YOUR COUNTRY.

43. Does your country host any of the following? (multiple answers possible) If your country hosts any of the identified data centres/units, please provide the details of any related websites (URL) in the comment section.
    [multiple choice; multiple select]
    IODE National Oceanographic Data Centre(s) (NODC)?
    IODE Associated Data Unit(s) (ADU)?
    IODE Associated Information Unit(s) (AIU)?
    Regional/Thematic Ocean Biogeographic Information System Node(s)?
    Other data repositories/management agencies
    Marine Library(ies)?
    No

    Comments
    [free field]

44. Please identify if any of the following data types are regularly collected and managed by your country's data centre(s)? (Multiple answers possible).
    [multiple choice; multiple select]
    Biological (including. taxonomic, ecological and genomic data)
    Physical (including temperature, hydrography, sea level)
    Geological and geophysical (including sediments, bathymetry, sub-surface structures)
    Chemical (including nutrients, dissolved gases, carbon, alkalinity)
    Pollutants, (including atmospheric, liquid and solid wastes)
    Sector-based, (including economic data e.g., shipping, fisheries, offshore infrastructure, tourism)
    Social (including demographic, value-based data)
    Other data types (please specify in the comments)

    Comments
    [free field]

45. Are the data managed by your country's data centre(s) available in:
    [multiple choice; single select]
    Real-time
    Delayed mode
    A mix of both

46. Do(es) the data centre(s) in your country provide any of the following data/information products? (Multiple answers possible).
[multiple choice; multiple select]
Online access to metadata
Online access to data
Online access to library catalogue
Online access to documents and publications
Published ocean data (e.g., "snapshots" of datasets as used for publications)
Online access to communication and capacity development products: webinars, audiovisual products, photo libraries
GIS products (maps, atlases)
Model outputs/products
Other data/information products (please specify in the comments)

Comments
[free field]

47. Do(es) the data centre(s) in your country provide any of the following services? (Multiple answers possible).
[multiple choice; multiple select]
Metadata and data archival
Personal data repository
Cloud computing facilities
Virtual research environment
Web services (see http://www.webopedia.com/TERM/W/Web_Services.html)
Provision of persistent identifiers (e.g., DOIs)
Data analysis tools
Data visualisation tools
Data quality control/assurance tools
Communication tools (hosting of web sites, mailing lists, group discussion support, project management tools)
Special tools (vocabularies, format descriptions
Access to documented methods, standards and guidelines
Other services (please specify in the comments)

Comments
[free field]

48. Do(es) the data centre(s) in your country have data management and sharing policies and procedures in place?
[multiple choice; single select]
Yes, the IOC Oceanographic Data Exchange Policy adopted as Resolution IOC- XXII-6
Yes, institutional (please specify in the comments, including providing details of where the policies and procedures can be accessed)
Yes, national (please specify in the comments, including providing details of where the policies and procedures can be accessed)
Yes, international (please specify in the comments, including providing details of where the policies and procedures can be accessed)
No
I don't know

Comments
[free field]

49. Do(es) the data centre(s) in your country apply FAIR data management principles? To support knowledge discovery and innovation both by humans and machines and to acknowledge Indigenous data governance, data should meet the FAIR Guiding Principles (Findable, Accessible, Interoperable and Reusable) to the greatest extent practicable.
[multiple choice; single select]
Yes
Partially
No
I do not Know

50. Do(es) the data centre(s) in your country apply CARE data management principles? To support knowledge discovery and innovation both by humans and machines and to acknowledge Indigenous data governance,, data should meet the CARE principles (Collective Benefit, Authority to Control, Responsibility, Ethics) to the greatest extent practicable.
[multiple choice; single select]
Yes
Partially
No
I do not Know

51. Do(es) the data centre(s) in your country restrict access to data/information?
[multiple choice; single select]
No data/information is restricted.
Certain data/information are restricted.
Data/information collected in certain geographic areas is restricted.
Data/information is restricted for defined periods of time (embargo).
Data/information is restricted in other ways restrictions (please specify in the comments)

Comments
[free field]

52. Please identify if any of the following utilize the data, products or services provided by the data centre(s) in your country. (Multiple answers possible)
[multiple choice; multiple select]
Only those in the institution hosting the data centre(s)
Researchers in my country
Researchers in any country
Policy makers in the ministries of my country
Policy makers in the ministries of any country (eg through UN commitments)
Military
Civil society
Private sector (including service providers such as private weather providers)
Primary/secondary/tertiary students
General public
Media organisations
Other clients and end users (please specify in the comments)

Comments
[free field]

53. Were the questions of Part E answered by or answered in consultation with an IODE focal point?
[multiple choice; single select]
Yes (please specify the IODE focal point's name, contact details and their OceanExpert ID in the comments)
No

Comments
[free field]

PART F: CAPACITY DEVELOPMENT AND TRANSFER OF MARINE TECHNOLOGY

CAPACITY DEVELOPMENT AND TRANSFER OF MARINE TECHNOLOGY: INFORMATION ABOUT OCEAN CAPACITY DEVELOPMENT NEEDS IN YOUR COUNTRY, AS WELL AS RELATED ACTIVITIES YOUR COUNTRY CONTRIBUTES TO, OR BENEFITS FROM.

54. Please rate the specific capacity and capability development needs of priority to your country (1 lowest priority, 5 highest priority).

	1 (lowest priority)	**2**	**3**	**4**	**5** (highest priority)
Academic (higher) training, basic training in ocean science					
Specialized technical (advanced) training in certain topics, short term courses					
Human capacity development including an increase the number of ocean science personnel					
Equipment needed for sampling and analysis (e.g. for water, geological, biological, chemical samples)					
Observation facilities and equipment (e.g. remote sensing equipment, buoys, tide gauges, shipboard and other means of ocean observation)					
Laboratory equipment					
Computer, computer software and analysis methods, including models and modeling techniques					
Conference and other networking opportunities					
Building of networks (community building)					
Funding					
Internet connectivity					
Other (specify in comments)					

Comments
[free field]

55. Please rate the following types of technical training courses with respect to your national capacity and capability development needs (1 lowest priority, 5 highest priority).

	1 (lowest priority)	**2**	**3**	**4**	**5** (highest priority)
Technical training for ocean science related to research activities, e.g. designing, conducting and delivering basic and applied research					
Technical training for ocean science related to ocean observation					
Technical training for ocean science data management					
Technical training for ocean science related to early warning systems, including forecasting and modelling					
Technical training for ocean science related to the sustainable management of human activities					
Technical training for ocean science communication					
Other (specify in comments)					

Comments
[free field]

56. How would you rate the current capability of ocean science researchers in your country to be able to access national and international scientific literature and information (e.g. peer reviewed journals, databases)?
[multiple choice; single select]
Poor
Fair
Good
Very good
Excellent

57. Are there any peer reviewed journals in national languages focused on ocean science published in your country?
[multiple choice; single select]
Yes (please specify the details including the journal's website in the comments)
No
I don't know

Comments
[free field]

58. Does your country employ specific efforts and mechanisms to retain graduates in ocean science related positions and activities (e.g., young scientist funding resources, exchange programmes, internships, early career support)?
[multiple choice; single select]
Yes (please specify the effort/mechanism in the comments)
No

Comments
[free field]

59. Does your country employ specific efforts and mechanisms to support female graduates and scientists in ocean science related positions and activities?
[multiple choice; single select]
Yes (please specify the efforts/mechanisms in the comments)
No

Comments
[free field]

60. What are the mechanisms that are in place to facilitate the participation of outside national experts in your country's ocean science projects and policymaking?
[multiple choice; multiple select]
Guest positions
Exchange programmes
Board memberships
Advisory capacity
Others (please specify in the comments)
There are none

Comments
[free field]

61. Does your country take part in bilateral support / training to increase ocean science related capacities, (e.g., Fullbright scholarships, EEA and Norway Grants (EØS-midlene))?
[multiple choice; single select]
Yes (please specify in the comments)
No
I do not know

Comments
[free field]

62. Does your country take part in regional/international ocean science programmes (e.g., POGO, SCOR, Ocean Teacher, Regional Network of Training and Research Centers, PICES) to increase scientific in particular ocean science related capacities?
[multiple choice; single select]
Yes (please specify in the comments)
No
I do not know

Comments
[free field]

PART G SUSTAINABLE DEVELOPMENT

SUSTAINABLE DEVELOPMENT: INFORMATION ABOUT OCEAN SCIENCE RELATED ACTIONS RELATED TO THE 2030 AGENDA, IN PARTICULAR THE SUSTAINABLE DEVELOPMENT GOAL 14 'CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT'.

63. Does your country have a national strategy for contributing to achieving Agenda 2030, in particular the Sustainable Development Goal 14 (https://sustainabledevelopment.un.org/sdg14) and related targets?
[multiple choice; single select]
Yes (please specify in the comments)
No
I do not know

Comments
[free field]

64. Does your country have reporting mechanisms for the individual SDG 14 targets and indicators in place?
[multiple choice; single select]
Yes (please specify in the comments)
No
I do not know

Comments
[free field]

65. Please rate the below marine and coastal ecosystem services (Cooley et al., 2022) by their importance for your country (1 lowest priority, 5 highest priority).

Ecosystem service	1 (lowest priority)	2	3	4	5 (highest priority)
Provisioning ecosystem services					
Food and feed: Status of harvested marine fish, invertebrates, mammals and plants.					
Medicinal, biochemical and genetic resources: Existence of, and access to, biological resources that could offer prospects for future development, including marine fish, invertebrates, mammals, plants, microbes and viruses.					
Materials and assistance: Existence of, and access to, minerals, shells, stones, coral branches and dyes used to create other goods; availability of marine organisms to exhibit in zoos, aquariums and as pets.					

Ecosystem service	1 (lowest priority)	2	3	4	5 (highest priority)
Energy: Existence of, and access to, sources of energy, including oil and gas reserves; solar, tidal and thermal ocean energy; and biofuels from marine plants.					
Supporting and regulating ecosystem services					
Habitat creation and maintenance: Status of nesting, feeding, nursery and mating sites for birds, mammals and other marine life, and of resting and overwintering places for migratory marine life or insects. Connectivity of ocean habitats.					
Dispersal and other propagules: Ability of marine life to spread gametes and larvae successfully by broadcast spawning reproduction, and ability of adults to disperse widely.					
Regulation of climate: Status of carbon storage and sequestration, methane cycling in wetlands, and dimethyl sulphide creation and destruction.					
Regulation of air quality: Status of aquatic processes that maintain and balance CO_2, oxygen, nitrogen oxides, sulphur oxides, volatile organic compounds, particulates and aerosols.					
Regulation of ocean acidification: Status of chemical and biological aquatic processes that maintain and balance CO_2 and other acids/bases.					
Regulation of freshwater quantity, location and timing: Status of water storage by coastal systems, including groundwater flow, aquifer recharge and flooding responses of wetlands, coastal water bodies and developed spaces.					
Regulation of freshwater and coastal water quality: Status of chemical and biological aquatic processes that retain and filter coastal waters, capture pollutants and particles, and oxygenate water (e.g., natural filtration by sediments including adsorbent minerals and microbes).					

Ecosystem service	1 (lowest priority)	2	3	4	5 (highest priority)
Regulation of organisms detrimental to humans and marine life: Status of grazing that controls harmful algal blooms and algal overgrowth of key ecosystems. Environmental conditions that suppress marine pathogens.					
Formation, protection and decontamination of soils and sediments: Status of chemical and biological aquatic processes that capture pollutants and particles (e.g., adsorption by minerals, microbial breakdown of pollutants).					
Regulation of hazards and extreme events: Ability of coastal environments to serve as wave-energy dissipators, barriers and wave breaks.					
Regulation of key elements: Status of aquatic processes that maintain and balance stocks of carbon, nitrogen, phosphorus and other elements critical for life.					
Cultural ecosystem services					
Physical and psychological experiences: Existence of, and access to, recreational opportunities including visiting beaches and coastal environments; and aquatic activities such as fishing, boating, swimming and diving.					
Supporting identities: Existence of, and access to, cultural, heritage and religious activities, and opportunities for intergenerational knowledge transfer; sense of place.					
Learning and inspiration: Existence of educational opportunities and characteristics to be emulated, as in biomimicry.					
Maintenance of options: Existence of opportunities to develop new medicines, materials, foods, and resources, or to adapt to a warmer climate and emergent diseases.					

Comments

[free field]

66. Does your country have policies and/or strategies (including management/regulation frameworks) for the sustainable use of the ocean and its resources?
[multiple choice; single select]
Yes
No
I do not know

67. If you answered yes to question 66, do those policies or strategies relate to the following sectors:
[multiple choice; multiple select]
Fisheries and/or aquaculture
Shipping
Non-renewable energy
Renewable energy
Tourism
The blue economy as a whole
Other (please specify in the comments)

Comments
[free field]

68. Does your country employ planning processes for ocean use (e.g. marine spatial plans, sustainable ocean plans)?
[multiple choice; single select]
Yes, at the national level (please provide details in the comments)
Yes at the sub-national level (please provide details in the comments)
No
I don’t know

Comments
[free field]