IOC Circular Letter No 2744
(Available in English, French, Russian, Spanish)
(16 November 2018)

To : National Official Coordinating Bodies for liaison with IOC

cc. : Permanent Delegates/Observer Missions to UNESCO and National Commissions for UNESCO of IOC Member States Chair and Vice-Chairs of IOC and Major Subsidiary Bodies

Subject: Follow-up to the preparation of the second edition of the IOC Global Ocean Science Report (GOSR-II): new deadline

I am writing to follow up on our recent IOC Circular Letter 2729 dated 3 September by which I called for the contribution of all IOC Member States to the preparation of the second edition of the Global Ocean Science Report and related data portal and solicited your intermediary to coordinate the compilation of the information in a dedicated online survey (https://gosr.ioc-unesco.org/en/) by 18 November.

To date, only a few number of Member States have designated a national focal point for GOSR-II. Please note that only one access per Member State was given to ensure validation and unicity of the source of information. In the case of Member States who have not designated a national focal point for GOSR-II, the unique access to the questionnaire was given to the IOC focal point. In this regard I remind you that the online questionnaire is available in English, Spanish and French. The GOSR-II questionnaire can also be downloaded in pdf format only for the purpose of facilitating consultations at the national level. Since September the Secretariat has had constructive exchanges with GOSR focal points and is building a community of practice necessary considering the innovative character of the survey. I encourage you to contact our GOSR team to let us know of any technical difficulties, questions and delay in progress to date. Kirsten Isensee: k.isensee@unesco.org and Salvatore Aricò: s.arico@unesco.org are available to receive your comments and questions.

Mindful of the difficulty of the task for Member States and of the need to gather the broadest possible representation of countries, the deadline to contribute information through the online questionnaire is extended to 15 February 2019.

Last July, the IOC Executive Council in its decision IOC/EC-LI/4.3 reaffirmed the importance of GOSR as the main mechanism to measure progress towards the achievement of Sustainable Development Goal (SDG) 14, Target 14.a (SDG indicator 14.a.1) and recognized that investments...
in ocean science are key to developing sustainable ocean economies. Thanks to the contributions of IOC Member States to the first edition of GOSR, this indicator has been given a new classification from Tier III to Tier II by the Inter-agency and Expert Group on SDG Indicators, meaning that this indicator is now conceptually clear, has an internationally established methodology and standards are available, but data are not regularly produced by countries.

It is therefore critical that the second edition of GOSR be as comprehensive as possible in reflecting information on the needs and resources of IOC Member States in relation to investments in ocean science and related economic and societal benefits.

I look forward to your active coordination with national authorities and synergy with the Secretariat.

Yours sincerely,

[signed]

Vladimir Ryabinin
Executive Secretary

Enclosure: Copy of GOSR-II questionnaire
The Global Ocean Science Report II (GOSR-II) questionnaire seeks to gain information about current ocean science capacity in your country. Your response will be used for the production of the second edition of the IOC GOSR-II (cf. Global Ocean Science Report for more information on the Report) and the related Global Ocean Science Report Data portal.

Please note that each IOC Member State has only one focal point who is allowed to the online submission of the answers to the questions. Please further note, that this submission is expected to reflect a consolidated national authorized response. The IOC secretariat acknowledges, that providing information to each question of the questionnaire might be difficult, therefore please feel free to contact the IOC Secretariat if you have further questions. The answering fields further include comment sections, where you will have the possibility to state whether the data provided are estimates (please state the source on which these estimates are based) or only reflect part of the ocean science landscape (e.g. human capacity data for only one part of the national ocean science institutions).

Member States are encouraged to use the best information available, obtained via consulting colleagues in your country and the respective ocean science institutions. Part E for example focuses on data management and data services, therefore we encourage you to invite your national IODE focal point to help you filling in this part (if present in your country, as per List of IODE National Oceanographic Data Centres and Associated Data Units) when answering these questions.

In the online version of the questionnaire (https://gosr.ioc-unesco.org/en/survey), you will be able to save your answers throughout the data collection period without submitting it to the IOC Secretariat. The present PDF is an example of the online questionnaire of the Global Ocean Science Report (GOSR). Some questions have more interactive options in the online questionnaire. For example, the possibility to add multiple entries is represented by a “+” button. In other cases, more information to fill will pop-up if you answered yes to a question.

The questionnaire is divided into seven parts:

**Part A** Respondent details: Personal information about you, including address, institution and email address.

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

**Part C** Ocean science spending: Information about actual expenses for ocean science made by your country. If they are not available, please provide estimated data calculated using budget allocations for ocean science or other methodologies and explain as a note. Ocean science spending should be reported in your national currency (preferably) or US Dollar (using the conversion rate for the respective year).

**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, vessels; emerging ocean science technologies engaged in ocean science.
Part E Oceanographic data and information 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, 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’.

Please send an email to Ms. Kirsten Isensee (k.isensee@unesco.org) for further information and/or in case you have questions related to your submission.

Thank you very much.
PART A RESPONDENT DETAILS - PLEASE NOTE THAT THIS INFORMATION WILL BE USED TO FOLLOW UP WITH THE RESPONDENT IN CASE FURTHER QUESTIONS REGARDING THE INFORMATION PROVIDED ARISE. DATA AND INFORMATION PROVIDED ARE TREATED AS NATIONAL AUTHORIZED SUBMISSION:

1. Country: 

2. Full name of respondent (First name, family name): 

3. Organization: 

4. Postal contact details (Address): 

5. Email: 

6. Telephone number: 

PART B: OCEAN SCIENCE GOVERNMENTAL ORGANIZATION AND GENERAL INFORMATION

8. Which ministry(ies) is/are involved in ocean science in your country? If in your country the ministry(ies) has/have several responsibilities, list it below in the comment box and tick the relevant boxes (e.g. ministry for culture, sports, and education) (multiple answers possible).

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

In the online version you can enter more than one ministry when you tick the Others box.

Comments

9. Please list research institutions and universities or university faculties/departments specialized in ocean science in your country. Please provide the name and full address or the OceanExpert institution ID (https://www.oceanexpert.net) if available. One entry must be completed for each research institutions and universities or university faculties/departments.

10. Does your country have a national ocean science strategy?

- [ ] Yes  If you answered yes, please provide the title and URL.
- [ ] No

11. Please rate each ocean science category individually with regard to relevance for your country (from 5 highest to 1 lowest).

- Marine ecosystem's functions and processes

- Marine ecosystem's functions and processes

- Ocean and climate
Ocean health

Human health and wellbeing

Blue growth

Ocean crust and marine geohazards

Ocean technology and engineering

Overarching theme: Ocean observation and marine data

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<tr>
<th>Question</th>
<th>Rating</th>
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<tbody>
<tr>
<td>12. Are the national ocean science activities, including human and technical capacities, published in a specialized report or part of national report since 2010, e.g. Canada - Ocean Science in Canada: Meeting the Challenge, Seizing the Opportunity (2013), Belgium - Compendium for Coast and Sea 2015: An integrated knowledge document about the socio-economic, environmental and institutional aspects of the coast and sea in Flanders and Belgium (2015)?</td>
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<th>Question</th>
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<td>13. Does your country have a national communication strategy for ocean science, e.g. to ensure knowledge transfer among scientists, to the general public, politicians, policymakers and industries?</td>
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<td>Yes</td>
<td>If you answered yes, please provide the title and URL.</td>
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The questions 8 and 9 have the possibility to add multiple entries. Questions 8, 9, 10, 12 and 13 are interactive questions in the online questionnaire. When you have white stars in a question (as in question 11), in the online questionnaire, you will be able to colour the number of stars you want in yellow for the ranking of the topic in the question.
PART C: OCEAN SCIENCE SPENDING

The data requested in the Part C should relate to actual expenses for ocean science made by your country. If they are not available, please provide estimated data calculated using budget allocations for ocean science or other methodologies and explain as a note. Ocean science spending should be reported in your national currency (preferably) or US Dollar (using the conversion rate for the respective year).

14. Please specify the amount of money spent on ocean science by the respective ministries or the specific department and/or section involved in ocean science in each ministry identified in question 8 (Part B).

<table>
<thead>
<tr>
<th>Year</th>
<th>Name of ministry</th>
<th>Monetary unit (i.e. millions, thousands)</th>
<th>Currency</th>
<th>Conversion rate applied (if data are provided in US$)</th>
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Type of period considered
- [ ] Calendar year
- [ ] Fiscal year; starting month:

One entry must be completed for each ministry.

Comments

More comments...

15. Please specify the amount of money spent by the respective institutions and universities or university faculties/departments identified in question 9 (Part B) for ocean science activities per year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Name of institution/university or university faculty/department</th>
<th>Monetary unit (i.e. millions, thousands)</th>
<th>Currency</th>
<th>Conversion rate applied (if data are provided in US$)</th>
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Type of period considered
- [ ] Calendar year
- [ ] Fiscal year; starting month:

One entry must be completed for each research institutions and universities or university faculties/departments.
16. Please provide the amount of money spent on ocean science in your country by governmental resources. Please also provide the breakdown of spending by level of government, if this information is available: central (or federal), regional (or state) and local (or municipal).

<table>
<thead>
<tr>
<th>Year</th>
<th>Total governmental spending for ocean science (A+B)</th>
<th>Central (or federal) governmental spending for ocean science (A)</th>
<th>Regional (or state) and local (or municipal) governmental spending for ocean science (B)</th>
<th>Monetary unit (i.e. millions, thousands)</th>
<th>Currency</th>
<th>Conversion rate applied (if data are provided in US$)</th>
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Type of period considered

- [ ] Calendar year
- [ ] Fiscal year; starting month:

Comments

More comments...

17. Please provide the amount of money spent on ocean science in your country by institutions corresponding to private non-profit and business enterprise sectors.

<table>
<thead>
<tr>
<th>Year</th>
<th>Private non-profit sector spending for ocean science</th>
<th>Business enterprise sector spending for ocean science</th>
<th>Monetary unit (i.e. millions, thousands)</th>
<th>Currency</th>
<th>Conversion rate applied (if data are provided in US$)</th>
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Type of period considered
18. Does your country contribute financially to international (global, regional) ocean science funding regimes, e.g. Horizon 2020, Belmont Forum, JPI Oceans, WIOMSA, Global Environmental Facility, UN bodies, Asia Pacific Network, Pacific Alliance?

- Yes
- No
- I do not know

If you answered yes, please provide the title and URL.

19. If you answered yes to question 18, please specify the amount of money contributed to the individual collaboration programmes for each year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Name of collaboration programme</th>
<th>Amount contributed to ocean science</th>
<th>Monetary unit (i.e. millions, thousands)</th>
<th>Currency</th>
<th>Conversion rate applied (if data are provided in US$)</th>
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One entry must be completed for each individual collaboration programs

20. Do the scientists in your country receive financial support from international (global, regional) ocean science funding regimes, e.g. Horizon 2020, Belmont Forum, JPI Oceans, WIOMSA, Global Environmental Facility, UN bodies, Asia Pacific Network, Pacific Alliance?

- Yes
- No
- I do not know

If you answered yes, please provide the title and URL.

21. If you answered yes to previous question, please specify the amount of money received from the individual collaboration programmes for each year.
<table>
<thead>
<tr>
<th>Year</th>
<th>Name of collaboration programme</th>
<th>Amount received for ocean science</th>
<th>Monetary unit (i.e. millions, thousands)</th>
<th>Currency</th>
<th>Conversion rate applied (if data are provided in US$)</th>
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Comments

More comments...

One entry must be completed for each individual collaboration program.

In Part C, all questions are interactive questions in the online questionnaire.
**Human Resource in Ocean Science**

**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 persons whose main tasks require technical knowledge and experience in one or more fields of engineering, the physical and life sciences (technicians) or the social sciences, humanities and the arts (equivalent staff). They participate in R&D by performing scientific and 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 craftsmen, and administrative, secretarial and clerical staff participating in R&D projects or directly associated with such projects.

### 22. Ocean science personnel by function – Headcounts (HC).

<table>
<thead>
<tr>
<th>Year</th>
<th>Total ocean science personnel (A+B+C+D)</th>
<th>Researchers (A)</th>
<th>Technicians and equivalent staff (B)</th>
<th>Other supporting staff (C)</th>
<th>Not specified (D)</th>
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**HC data cover the total number of persons who are mainly or partially employed in ocean science.**

**Comments**

More comments...

### 23. Ocean science personnel by function – Full-time equivalents (FTE).

<table>
<thead>
<tr>
<th>Year</th>
<th>Total ocean science personnel (A+B+C+D)</th>
<th>Researchers (A)</th>
<th>Technicians and equivalent staff (B)</th>
<th>Other supporting staff (C)</th>
<th>Not specified (D)</th>
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**FTE data measure the volume of human resources in ocean science.**

**Comments**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total ocean science personnel</th>
<th>Ocean science Researchers</th>
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<tbody>
<tr>
<td></td>
<td>Total (A+B)</td>
<td>Female (A)</td>
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Comments

More comments...
25. Please provide information about the age distribution and gender of researchers engaged in ocean science – Headcounts (HC).

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (A+B+C+D+E+F)</th>
<th>Age class under 25 years (A)</th>
<th>Age class 25-34 years (B)</th>
<th>Age class 35-44 years (C)</th>
<th>Age class 45-54 years (D)</th>
<th>Age class 55-64 years (E)</th>
<th>Age class 65 years and more (F)</th>
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<tr>
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<td>Total Female Male</td>
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Comments

More comments...
26. Please provide information about the qualification and gender of researchers engaged in ocean science – Headcounts (HC).

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (A+B+C+D+E+F)</th>
<th>Doctoral or equivalent (ISCED 8) (A)</th>
<th>Master’s or equivalent (ISCED 7) (B)</th>
<th>Bachelor’s or equivalent (ISCED 6) (C)</th>
<th>Short-cycle tertiary (ISCED 5) (D)</th>
<th>All other qualifications (ISCED 4 and below) (E)</th>
<th>Not specified (F)</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments

More comments...
27. Please provide the percentage of permanent employees of your country’s current ocean science personal (overall).

- 0%
- 1-25%
- 26-50%
- 51-71%
- 72-100%

Comments

More comments...

Ocean Observation

28. Does your country have ocean observation programme(s)/activity(ies)?

- Yes  If you answered yes, please provide the title and URL.
- No

29. Does your country’s ocean observation include satellite observations?

- Yes, we conduct ocean satellite observation.
- Yes, we contribute to ocean satellite observation.  If you answered yes, please provide the title and URL.
- Yes, we use ocean satellite observation information.
- No.
- I do not know.
Vessels

30. Does your country own and maintain research vessels?
   - Yes
   - No

31. Does your country own and maintain vessels partly used for ocean science?
   - Yes
   - No

32. Do ocean science institutions, universities and/or faculties/departments of universities in your country involved in ocean science participate in efforts related to ships of opportunity/voluntary observing ships?
   - Yes
   - No

33. Do ocean science researchers have access to research vessels, which are not encompassed by questions 30-32?
   - Yes
   - No

34. Please provide information about the number of research vessels, vessels partly used for ocean science (e.g. navy ships used for ocean science), and ships of opportunity (commercial vessels equipped with ocean observation equipment.) are operated by your nation. Further, please specify their length (if information is available).

<table>
<thead>
<tr>
<th>Vessel</th>
<th>Year</th>
<th>Number of vessels (A+B+C+D+E)</th>
<th>Length of the vessels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt;10 m (A)</td>
</tr>
<tr>
<td>Research vessels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vessels partly used for ocean science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ships of opportunity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Please add rows for different years**

Comments

More comments...

35. Please list the name and IMO number of research vessels bigger than 55 m.

<table>
<thead>
<tr>
<th>Ship name</th>
<th>IMO number</th>
</tr>
</thead>
</table>

One entry must be completed for each research vessels bigger than 55 m.

36. For research vessels, please specify the days at sea, distinguishing between Territorial Waters, the Exclusive Economic Zone and High Seas (days per year for 2017 or the last year with available data).
<table>
<thead>
<tr>
<th>Vessel</th>
<th>Year</th>
<th>Days at sea</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Territorial waters (A)</td>
</tr>
<tr>
<td>Research vessels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vessels partly used for ocean science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ships of opportunity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please add rows for different years.
Comments

More comments...

Emerging ocean science technology

37. Do researchers in your country have access to the following new ocean science technologies (multiple choices possible):

**Field Work Infrastructure**
- [ ] Human Operated Vessel (Submersible)
- [ ] Surface Unmanned Vessel (SUV)
- [ ] Remotely Operated Vessel (ROV)
- [ ] Autonomous Underwater Vessel (AUV)
- [ ] Underwater Glider
- [ ] Wave Glider
- [ ] Marine Drone
- [ ] Mooring Buoy
- [ ] Underwater Cable System

**Field Work Equipment (to be equipped on ship)**
- [ ] Doppler Rader System
- [ ] Radiosonde Launcher
- [ ] Scientific Fish Finder.
- [ ] Single Channel Hydrophone Array (Streamer)
- [ ] Multichannel Hydrophone Array (Streamer)
- [ ] Multicable Multichannel Hydrophone Array
- [ ] Air Gun/ Water Gun
- [ ] Sub-bottom profiler
- [ ] Multi narrow beam bottom profiler
- [ ] Remotely operated Drilling equipment
- [ ] Remotely operated seafloor sampler
- [ ] Multinet plankton sampler
- [ ] Deep-Sea Camera System.
- [ ] Stereoscopic Deep-sea Camera System
Equipment for bathymetric studies

**Laboratory Equipment on Board**
- Auto Analyzer for chemical analyses
- X-ray tomography
- Mass Spectrometer
- FITC
- Radio Isotope laboratory
- DNA sequencer
- Deep Freezer
- Liquid Nitrogen Generator
- others

**Data Processing**
- Supercomputer
- Satellite Communication Antenna

*In Part D, questions 28, 29, 34, 35 and 36 are interactive questions in the online questionnaire.*
38. Were the questions of Part E answered by or answered in consultation with an IODE focal point?

- Yes
- No

If you answered yes, please provide the full name (first name, family name) of the respondent, his organization, his postal contact details (address), his email, his telephone number and his OceanExpert ID.

39. Does your country have - (multiple answers possible).

- IODE National Oceanographic Data Centre(s) (NODC)? Please provide the name(s) and URL(s) of this (these) data centre(s).
- IODE Associate Data Unit(s) (ADU)? Please provide the name(s) and URL(s) of this (these) data centre(s).
- Regional OBIS (Ocean Biogeographic Information System) Node(s)? Please provide the name(s) and URL(s) of this (these) data centre(s).
- Marine Library(ies)? Please provide the name(s) and URL(s) of this (these) centre(s).

If you have a centre of these types, please provide the title and URL.

40. Is/are your country’s (data) centre(s) involved in the following types of collaboration? (Multiple answers possible).

- National (between your centre and other national institutions)
- Regional (e.g. Europe, Africa, South East Asia)
- International (in addition to IODE)

Please provide more information on the collaborations (title, URL).

41. Is/are your country’s data centre(s) collaborating with other IOC programmes, projects (in addition to IODE)? (Multiple answers possible).

- Ocean science (BCI, CCLME, GOA-ON, GO2NE, GOSR, HABs, IGMETS, TrendsPO, WG40, WG41, WCRP)
- Ocean Observations and Services (GOOS)
- Tsunami Unit
- Marine Policy (including marine spatial planning, large marine ecosystems, integrated coastal area management)
- I do not know

42. What observational data types are regularly collected and managed by your country’s data centre(s)? (Multiple answers possible).

- Biological data (incl. taxonomic and physiological data, data about phyto- and zooplankton, benthos, pigments, fauna, flora, microorganisms,...)
- Physical data (waves, currents, hydrography, sea level, temperature, salinity, optics, acoustics)
- Geological and geophysical (sediments, bathymetry,...)
- Chemical (nutrients, pH, CO2, dissolved gases, ...)
- Pollutant (monitoring)
- Fisheries data
- Socio-economic (ocean related)
- Real-time data
- Other data types

If you ticked Other box, please provide details.

43. What data/information products do(es) your country’s data centre(s) provide to its/their clients? (Multiple answers possible).
Online access to metadata
Online access to data
Online access to library catalogue
Online access to e-documents and e-publications
Published ocean data (e.g. "snapshots" of datasets as used for publications)
Online access to communication and capacity development products: webinars, audiovisual products, photolibrary
GIS products (maps, atlases)
Portals
Numerical model data
CD-ROM products
Other data/information products

44. What services do(es) your county’s data centre(s) provide to its/their clients? (Multiple answers possible).
   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 PIDs (persistent identify, e.g. DOI minting)
   Data analysis tools
   Data visualisation tools
   Data quality control tools
   Communication tools (hosting of web sites, mailing lists, group discussion support, project management tools...)
   Special tools (vocabularies, format descriptions, gazetteers, ...)
   Access to documented methods, standards and guidelines
   Other services

45. Does your country’s data centre(s) apply a data (sharing) policy on the management and sharing of data/information?
   Yes, institutional
   Yes, national
   Yes, international
   No

If you ticked Other box, please provide details.

If you answered yes, please provide the title, the URL and a contact email to find out more.
46. Do your country’s data centre(s) comply with the FAIR data management criteria.

**FAIR Criteria**

<table>
<thead>
<tr>
<th>Findable</th>
<th>Accessible</th>
<th>Interoperable</th>
<th>Reusable</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1. (meta)data are assigned a globally unique and persistent identifier.</td>
<td>A1. (meta)data are retrievable by their identifier using a standardized communications protocol.</td>
<td>I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.</td>
<td>R1. (meta)data are richly described with a plurality of accurate and relevant attributes.</td>
</tr>
<tr>
<td>F2. data are described with rich metadata (defined by R1 below).</td>
<td>A1.1. the protocol is open, free, and universally implementable.</td>
<td>I2. (meta)data use vocabularies that follow FAIR principles.</td>
<td>R1.1. (meta)data are released with a clear and accessible data usage license.</td>
</tr>
<tr>
<td>F3. metadata clearly and explicitly include the identifier of the data it describes.</td>
<td>A1.2. the protocol allows for an authentication and authorization procedure, where necessary.</td>
<td>I3. (meta)data include qualified references to other (meta)data.</td>
<td>R1.2. (meta)data are associated with detailed provenance.</td>
</tr>
<tr>
<td>F4. (meta)data are registered or indexed in a searchable resource.</td>
<td>A2. metadata are accessible, even when the data are no longer available.</td>
<td></td>
<td>R1.3. (meta)data meet domain-relevant community standards.</td>
</tr>
</tbody>
</table>

- Yes
- No
- I do not Know

47. Do(es) your country’s data centre(s) restrict access to data/information?

- [ ] We do not restrict at all.
- [ ] We restrict access to certain data types.
- [ ] We restrict access to data collected in certain geographic areas.
- [ ] We restrict access during a certain period of time (embargo).
- [ ] Any other restrictions: If you ticked Any other restrictions box, please provide details.

Comments

48. Do(es) your country’s data centre(s) apply the IOC Oceanographic Data Exchange Policy adopted as Resolution IOC- XXII-6?

- [ ] Yes
- [ ] No
- [ ] I do not Know

49. Who are the clients and end users of the data, products or services provided by your country’s data centre(s)? (Multiple answers possible).

- [ ] Only users in my own institution
- [ ] National researchers in my own country
Researchers in any country
Policy makers of my own ministry
Policy makers in other ministries of my country
Policy makers in any country (eg through UN commitments)
Military
Civil protection
Private sector (eg fisheries, hotels, industry,...)
School children
Undergraduate students
General public
Print/TV press
Social media
Service providers, e.g. weather forecast organizations/institutions
Other clients and end users If you ticked Other box, please provide details.

50. Are data and information from your country’s data centre contributing to international systems (meaning that you actively send data, or make data and metadata available, to e.g. the ICSU World Data System, GDACs, WMO Global Telecommunication System (GTS) or other such international systems?

☐ Yes If you answered yes, please provide the title and URL.
☐ No

51. What are the URLs of the section of your country’s data/information centre(s) web site(s) that deal(s) with your online products and services (enter 1 to 5): You can add up to 5 URLs.

URL

In Part E, questions 38, 39, 40, 42, 43, 44, 45, 47, 49, 50 and 51 are interactive questions in the online questionnaire.
52. Please rank your country’s top five specific capacity (development) needs (from 5 highest to 1 lowest).

- Academic (higher) training basic training in ocean science
- Specialized technical (advanced) training in certain topics, training, short term courses
- Human capacity, increase the number of ocean science personnel
- Sampling and analysis equipment (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)
- Equipment for in situ and laboratory observations, analysis and experimentation
- Computer and computer software, including models and modeling techniques
- Opportunities to share our experience at conferences
- Networking (community building) with colleagues
- Funding
- Internet connectivity

You can also add other needs if the ones provided do not correspond to the needs of your country.

53. Please rank the following types of technical training courses with respect to your national capacity development needs (from 5 highest priority to 1 lowest priority).

- Technical training for ocean science related to research activities, e.g. climate change, ocean acidification, eutrophication
- Technical training for ocean science related to ocean observation
- Technical training for ocean science data management
- Technical training for ocean science related to sustainable management
- Technical training for ocean science communication
54. How would you rank your country's access to national and international scientific literature and information (e.g., peer reviewed journals, data bases)?
   - Poor
   - Fair
   - Good
   - Very good
   - Excellent

55. How many peer reviewed journals in national languages not indexed in Web of Science are published in your country?
   - <5
   - 5-10
   - 10-50
   - >50

56. Does your country have special national efforts and mechanisms to absorb and keep graduates in ocean science related positions and activities (e.g., PhD programmes, young scientist funding resources, exchange programmes, early career support)?
   - Yes
   - No
   If you answered yes, please provide the title and URL.

57. Does your country have special national efforts and mechanisms to support female graduates and scientists in ocean science related positions and activities?
   - Yes
   - No
   If you answered yes, please provide the title and URL.

58. 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?
   - Guest positions
   - Exchange programmes
   - Board memberships
   - Advisory capacity
   - Others
   - There are none

Comments

More comments...

59. Does your country take part in bilateral support / training to increase scientific in particular ocean science related capacities, e.g. Fulbright scholarships, EEA and Norway Grants (EOS-midlene), Fish for Development and civil society 2018-2022?
   - Yes
   - No
   - I do not know
   If you answered yes, please provide the title and URL.
60. Does your country take part in regional/international support/training programmes, such as POGO, SCOR, OT (Ocean Teacher), Regional Network of Training and Research Centers (RTRC), ICES, PICES, IOC to increase scientific in particular ocean science related capacities?

☐ Yes  If you answered yes, please provide the title and URL.

☐ No

☐ I do not know

In Part F, questions 52, 56, 57, 59 and 60 are interactive questions in the online questionnaire. When you have white stars in a question (as in questions 52 and 53), in the online questionnaire, you will be able to colour the number of stars you want in yellow for the ranking of the topic in the question.
**PART G SUSTAINABLE DEVELOPMENT**

61. Does your country have a national strategy to achieve the goals of the Agenda 2030 in particular the Sustainable Development Goal 14 ([https://sustainabledevelopment.un.org/sdg14](https://sustainabledevelopment.un.org/sdg14)) and related targets?

- Yes
- Yes, specific SDG 14
- No

**If you answered yes, please provide the title and URL.**

62. Does your country have a national focal point for the Sustainable Development Goal 14 ([https://sustainabledevelopment.un.org/sdg14](https://sustainabledevelopment.un.org/sdg14)) and related targets?

- Yes
- No

**If you answered yes, please provide the name, the URL and the email address of the focal point.**

63. Does your country have reporting mechanisms for the individual SDG 14 targets and indicators in place?

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

<table>
<thead>
<tr>
<th>SDG 14 Target</th>
<th>Description</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1</td>
<td>By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.</td>
<td>14.1.1 Index of coastal eutrophication and floating plastic debris density.</td>
</tr>
<tr>
<td>14.2</td>
<td>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.</td>
<td>14.2.1 Proportion of national exclusive economic zones managed using ecosystem-based approaches.</td>
</tr>
<tr>
<td>14.3</td>
<td>Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.</td>
<td>14.3.1 Average marine acidity (pH) measured at agreed suite of representative sampling stations.</td>
</tr>
<tr>
<td>14.4</td>
<td>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.</td>
<td>14.4.1 Proportion of fish stocks within biologically sustainable levels.</td>
</tr>
<tr>
<td>14.5</td>
<td>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.</td>
<td>14.5.1 Coverage of protected areas in relation to marine areas.</td>
</tr>
<tr>
<td>14.6</td>
<td>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.</td>
<td>14.6.1 Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing.</td>
</tr>
<tr>
<td>14.7</td>
<td>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.</td>
<td>14.7.1 Sustainable fisheries as a proportion of GDP in small island developing States, least developed countries and all countries.</td>
</tr>
</tbody>
</table>
64. Please select 5 ocean services and rank the below marine and coastal ecosystem services (adopted from Liquete et al. 2013) by their importance for your country (from 5 highest priority to 1 lowest priority).

**Provisioning:**

- Food provision
- Water storage and provision
- Biotic materials and biofuels

**Regulating and maintenance:**

- Water purification
- Air quality regulation
- Coastal protection
- Climate regulation
Weather regulation

Ocean nourishment

Life cycle maintenance

Biological regulation

**Cultural:**

Symbolic and aesthetic values

Recreation and tourism

Cognitive effects

65. Does your country have specific activities contributing to economies related to the sustainable use of ocean resources and/or developed a blue/ocean economy strategy?

- [ ] Yes
- [ ] No

If you answered yes, please provide the name and URL.

In Part G, questions 61, 62 and 65 are interactive questions in the online questionnaire. When you have white stars in a question (as in question 64), in the online questionnaire, you will be able to colour the number of stars you want in yellow for the ranking of the topic in the question.