



**The First Meeting
of the Editorial Board of the
Global Ocean Science Report (GOSR) 2nd Edition**

**Paris, France, IOC HQ, 24 – 26 April 2018
Meeting Report**

23 May 2018

Global Ocean Science Report 2nd Edition

Editorial Board Meeting, 24-26 April 2018, Paris, France, IOC HQ



Participants

Co-Chairs

Jan Mees	VLIZ, Belgium
Jacqueline Uku	WIOMSA, Kenya

Members

Claire Jolly	OECD
Kwame Koranteng	Ghana
Ana Lara-Lopez	University of Tasmania, Australia
Youn-ho Lee	KIOST, Republic of Korea
Leonard Nurse	UWI, Barbados
Susan Roberts	NAS, USA,
Yoshihisa Shirayama	JAMSTEC, Japan
Paula Sierra Correa	Invemar, Colombia,
Luis Valdés	IEO, Spain,
Christian Wexels Riser	The Research Council of Norway, Norway Editorial Coordinator

Director of the Publication

Vladimir Ryabinin	Executive Secretary, IOC
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IOC-UNESCO Support Team:

Salvatore Aricò	Head, OSS (Coordinator of GOSR-II and Secretary of the EB)
Henrik Oksfeldt Enevoldsen	Head, IOC HAB, OSS
Kirsten Isensee	OSS, (Assistant Editor)
Peter Pissierssens	Head, IODE
Simonetta Secco	OSS
Yosub Kim	OSS

UNESCO Institute for Statistics

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Contents

1	Purpose of the meeting	3
2	Terms of reference Editorial Board.....	3
3	Report –Discussions, Observations, Recommendations	3
3.1	Scope and overall structure of GOSR-II.....	4
3.2	GOSR – structure and elements.....	5
3.3	GOSR-II questionnaire.....	8
3.4	Data portal	9
4	Timeline	10
	Annex 1 – Agenda	11
	Annex 2 – Terms of reference of the GOSR-II Editorial Board.....	13

1 Purpose of the meeting

From the 24th to the 26th of April 2018 the IOC Secretariat hosted the first meeting of the Global Ocean Science Report (GOSR)–II Editorial Board at UNESCO HQ in Paris. The goal was to develop and to discuss the content and scope of the GOSR-II. The Editorial Board, an external and independent panel of international qualified experts with experience and expertise in ocean science and/or science diplomacy, statistics, and evaluation, was established to support the IOC secretariat in ensuring quality and timely delivery of the GOSR throughout the production period, which will end in 2020.

The agenda (Annex 1) provides detailed information on the different issues discussed. In brief, the main items which needed to be addressed during the three days meeting were:

- New scope and order of chapters,
- GOSR questionnaire,
- What to change and what to continue from the previous report,
- Distribution of responsibilities
- GOSR data portal,
- GOSR time line.

2 Terms of reference Editorial Board

The IOC Secretariat shared the terms of reference of the Editorial Board (EB) with the members of this expert panel prior to the meeting (Annex 2).

3 Report –Discussions, Observations, Recommendations

Prior to the meeting, the agenda and some background documentation, including draft timeline, terms of references for the EB were shared with its members (see <http://ioc->

unesco.org/index.php?option=com_content&view=article&id=2266). After the meeting, the presentations given by some of the participants were published on the same webpage. In addition, a news item on the IOC website highlighted the event (http://www.unesco.org/new/en/natural-sciences/ioc-oceans/single-view-oceans/news/experts_kick_off_production_of_the_second_global_ocean_sci/).

The following sections summarize the discussion of the meeting and the decisions made.

3.1 Scope and overall structure of GOSR-II

General guidance

- GOSR-II should be part of a transformative process. The report is expected to be framed around and to feed into the UN Decade of Ocean Science for Sustainable Development (2021-2030), the 2030 Agenda at large, and the Sustainable Development Goal (SDG) 14 in particular.
- It will provide the baseline information on existing human and technical capacity before the decade.
- The EB expressed that the GOSR-II should try to document if Member States are fostering science capacity and develop a research strategy with respect to ocean science. The GOSR-II should document the big achievements of ocean science to date and the future challenges.
- GOSR-II will need to identify breakthroughs in science for the protection of oceans and sustainability.
- The EB stressed that the GOSR-II will need to provide a vision for ocean science, that it and will need to look 10 years ahead.
- **A new subtitle for GOSR-II will need to be identified. Luis Valdes presented some options, which need to be reviewed by the GOSR-II EB and the IOC Secretariat.**
- The EB further highlighted the importance of communicating the report's outcomes. The EB advised the IOC Secretariat to develop a communication and dissemination strategy in the early stages of the GOSR-II preparations.
- **The EB will decide on the regional assessments/groupings based on IOC Secretariat analysis by 15 May 2018.**
- Each chapter will be headed by some key messages, to be developed and extracted by the authors of the respective chapters.
- The EB expressed strong interest in that the GOSR should give guidance on how to establish national reporting mechanisms in order to assess the national status of the ocean, and in particular how to facilitate data collection (questionnaire) at the national level.
- The presentations addressing the lessons learned from the GOSR-I should guide the drafting process and might be considered in the forward looking parts of the GOSR-II.
- Prior to the invitation to the lead- and co-authors of the different chapters, a 'guide to authors' will be developed by the IOC Secretariat and the EB.
- The EB decided on the following sequence of chapters (working titles):
 - I. Introduction
 - II. Definitions, data collection and analyses
 - III. Ocean science funding
 - IV. Research capacity and infrastructure
 - V. Data and information
 - VI. Research productivity and science impact
 - VII. Implications and application of ocean science for sustainable development

VIII. Conclusions and recommendations

- **The EB asked the IOC Secretariat to prepare a list of GOSR-II elements, which will need additional financial support in order to be implemented (by end June 2018).**

New Items to include in the GOSR-II and to adjust from the GOSR-I

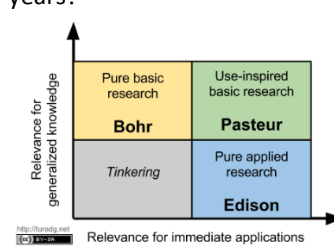
- Each chapter will start with a box with approximately five key messages, which include emerging issues and highlight specific items of relevance to the UN Decade of Ocean Science for Sustainable Development.
- Examples and regional assessments to be highlighted in boxes in each chapter.
- Highlight why countries conduct and why they should enforce/support ocean science.
- New focus areas: ocean science capacity development, innovative ways to measure ocean science output, e.g. patents.
- Each chapter needs to be self-standing, including references, citation etc.

3.2 GOSR – structure and elements

The following table contains the structure and elements of the different GOSR-II chapters as agreed among the members of the EB. It further lists two members of the board for each chapter, who agreed to take the lead in supporting the IOC Secretariat in the preparation of this part of the report.

Chapter	Editorial Board Lead and supporter	Guidance	Items to include/adjust
Executive Summary	Co-chairs EB GOSR-II: Jan Mees; Jacqueline Uku	1. Executive Summary and Introduction to be led / drafted by same experts. 2. The Executive Summary will refer to: <ul style="list-style-type: none"> • Key findings from the individual chapters(messages) • Facts & Figures (who, what for, how much (spending), performance, data, policy impact) – see GOSR-I • Recommendations 	1. Authors of the individual chapters will be requested to provide the highlights for their respective chapters to the lead experts of the Executive Summary.
Preface	TBD	1. Brief history of the GOSR, vision and process.	
Introduction	Co-chairs EB GOSR-II: Jan Mees; Jacqueline Uku	1. Important to highlight the added value of the GOSR-II. 2. Highlight that capacity development and the contribution of ocean science for sustainable development are now included in the GOSR.	1. Include a vision/an outlook for ocean science, what the perspectives are for ocean science within the framework of the decade – Where should ocean science be in 2030? 2. Provide some examples on, how ocean science influences human livelihood. 3. Highlight a few emerging ocean science developments, e.g. with respect to new techniques, but also new ocean science needs in certain regions.

Chapter	Editorial Board Lead and supporter	Guidance	Items to include/adjust
Definitions, data collection and analyses	Rohan Pathirage; Claire Jolly (TBC)	<ol style="list-style-type: none"> 1. Use ocean science definition of GOSR I, complemented by the definition provided by the Decade. 2. Definitions of 8 categories: to be reviewed by EB until 4 May. 3. Keywords used in the bibliometric search to be reviewed by EB until 4 May in light of new research fields and to avoid inflated results in articles count due to non-marine issues. 4. IOC secretariat to consult with UIS and OECD to improve and update definitions. 5. Important to establish a 'quality control mechanisms' for information submitted by Member States, i.e. the cover letter of the questionnaire will state that the information will be treated as a national authorized submission and one person needs to act as a validator. In case estimates are submitted, Member States are required to provide information on how the estimate was calculated. 	<ol style="list-style-type: none"> 1. Additional data resources need to be identified – follow up item for the whole EB. 2. The EB recommended to continue with the analysis of international ocean science conferences as conducted for part of the human resources analysis in GOSR-I. 3. The fields of ocean science used in part of the analysis in GOSR-I (Fisheries, Observation and other ocean science) will not be used in GOSR-II. This classification caused unnecessary confusion among Member States (Difference between fields and categories) and the final analysis only made use of these fields in a few analysis.
Research capacity and infrastructure	Paula Sierra Correa; Kwame Koranteng	<ol style="list-style-type: none"> 1. Chapter should include a forward looking/visionary part, references to the different Decade foci need to be made, including mapping, new techniques for ocean observation, cloud computing, robotics, acoustic and image sampling etc. 2. Should include a new separate part on capacity development (CD). 3. EB highlighted, that it may be difficult to obtain quantitative data on training/CD activities globally via the GOSR-II questionnaire, therefore it is indispensable to identify additional resources besides questionnaire. 	<ol style="list-style-type: none"> 1. Repetition of vessel, human resources analysis, Argo developments. 2. New to include: Estimate of number of ocean science researcher globally/regionally, quantitative analysis on graduate students, new emerging techniques (e.g. robotics, remote sensing), inventory of ocean science communication strategies, capacity building activities, computing facilities, deep see observation techniques (see revised GOSR-II questionnaire). 3. Include regional assessments for most of the quantitative analysis. 4. Not to repeat: marine field stations, time series, as these are

Chapter	Editorial Board Lead and supporter	Guidance	Items to include/adjust
			considered to be stable since the publication).
Ocean science funding	Claire Jolly (TBC); Youn-ho Lee	<ol style="list-style-type: none"> 1. Pay special attention to definitions and terminology in this chapter (IOC Secretariat in consultation with UIS, OECD). 2. As information provided by member States via the questionnaire might be limited the use of case studies via using freely available information online, will be especially important. 3. Use ministry, funding agency, ocean research institute specific budgetary information to illustrate the funding of ocean science (new analysis to be included). 	<ol style="list-style-type: none"> 1. Include data on regional and local funding mechanisms. 2. Include data on if and how much Member States spent on international cooperation. 3. Private and philanthropy funding will be most probably be explained via examples as globally comparable data are difficult to collect.
Research productivity and science impact	Anna Lara-Lopez; Jan Mees; Luis Valdes	<ol style="list-style-type: none"> 1. Seek to include more non-A1 literature. 2. For A1 literature, continue working with ScienceMetrix. 3. Annual disaggregated updates on bibliometric data sets from 2004 on. 4. Important to review the keywords for bibliometric analysis, to identify missing topics and which keywords might cause an inflation in the number taking into account for the analysis. 5. Collaborate with ASFA to include non-English peer reviewed literature – Decision pending, whether this part will be explained in this chapter or the chapter focusing on data and information. 	<ol style="list-style-type: none"> 1. Repeat main figures. 2. Include data on patents to describe another form of productivity. 3. Include data on participation in science-policy reports. 4. Based on the Bohr- Pasteur-Edison Quadrant model, try to identify if there is any pattern for such a change in the ocean research emphasis over 25 years?  <p>The diagram is a 2x2 matrix with 'Relevance for generalized knowledge' on the vertical axis and 'Relevance for immediate applications' on the horizontal axis. The quadrants are: Top-Left (Yellow) 'Pure basic research' labeled 'Bohr'; Top-Right (Green) 'Use-inspired basic research' labeled 'Pasteur'; Bottom-Left (Grey) 'Tinkering'; Bottom-Right (Blue) 'Pure applied research' labeled 'Edison'.</p>
Data and information	Yoshihisa Shirayama; Paula Sierra Correa	<ol style="list-style-type: none"> 1. Potentially the non-A1 literature will be addressed in this chapter (e.g. ASFA), in order to highlight that all literature relevant to ocean science. 2. New questions to be included in questionnaire: Number of peer reviewed journals in national languages (not 	<ol style="list-style-type: none"> 1. Present data on access to journals (see questionnaire). 2. Address the potential of big data in ocean science, e.g. remote sensing data, Argo data, Obis.

Chapter	Editorial Board Lead and supporter	Guidance	Items to include/adjust
		indexed in Web of Science) including journal name and URL (collaboration with ASFA). 3. Consider question on societal relevant use of data (see questionnaire).	
Implications and applications of ocean science for sustainable development	Jaqueline Uku; Susan Roberts (TBC)	1. Do not repeat or summarize previous report chapter on international organizations supporting ocean science and how ocean science contributed to ocean and coastal policies and sustainable development).	1. Analysis of how ocean science contributes to the SDG 14 and specific decade objectives. 2. Highlight some contributions of Ocean science to other SDGs and some specific targets, e.g. SDG 5, 13, 17. 3. Identify gaps of ocean science resources, technology, gaps in the SDG reporting process as well as in the implementation of measures to achieve the targets and goals.
Conclusions and recommendations	Co-chairs EB GOSR-II: Jan Mees; Jacqueline Uku	1. Narrative analysis of gaps and highlights addressed in the individual chapters, based on key findings (compilation of key messages, as given in each chapter). 2. Recommendations: policy orientated advice (not policy prescriptive, but illustrate the relevance, timeliness, saliency of ocean science, e.g. for ocean economy, ocean health) (<i>it will be the recommendations of the EB-to be stated</i>)	1. Combine the emerging issues identified in each chapter and position them in Decade and SDG perspective. 2. Seek a foresight focus: Where do we need to be by 2030 in terms of Ocean Science?

3.3 GOSR-II questionnaire

Prior to the meeting the IOC Secretariat shared a draft questionnaire with the Philippines, the UK and colleagues from the UIS. A revised version, taking into account the comments and suggestions received, was presented during the first meeting of the EB of the GOSR-II., which was followed by an in depth discussion of the questionnaire, providing general guidance and specific suggestions. A new draft taking the comments into account will be shared with the EB in May 2018.

General guidance

- The GOSR-II questionnaire will need to include a comprehensive scoping note for each language version (questionnaire).
- The GOSR-II questionnaire will combine the questions of the GOSR-I questionnaire and survey.

- The GOSR-II questionnaire will be an online questionnaire, giving the possibility to have multiple data submitters and one validator per country. The online version will need to provide the possibility to be revisited and changed by the Member States.
- The online questionnaire and analysis is envisaged to facilitate and increase Member States submissions and contributions.
- In case Member States submit estimates, they will be requested to state the source and calculations on which this estimate is based on, in order to have the estimate considered in the GOSR-II (quality control mechanisms).
- Not all the information collected will/must be part of the GOSR-II, but has the possibility to be displayed in the data portal.
- It is important to include quality checks conducted by the IOC Secretariat, e.g. comparison of data submitted by Member States and similar data sets freely available online.
- It is important to reduce number of open questions from GOSR-I.
- Quantitative analysis will be mostly based on questions using ranking and multiple answer possibilities.
- It is important to include new questions about emerging ocean science technologies.

3.4 Data portal

The discussions about the GOSR-II data portal addressed the data collection, accessibility for Member States and data visualization.

General guidance

- In the beginning the data portal will provide access to the GOSR-II questionnaire.
- After submission of answers by Member States and the analysis by the IOC Secretariat of the provided data and information, the data portal will display the data and information received, including data and information obtained from other resources e.g. ScienceMetrix.
- Depending on financial support, it is expected that the GOSR-II data portal will grow into an information system.
- IOC Secretariat needs to investigate with UIS/UNESCO Legal Affairs if a disclaimer for the questionnaire is needed stating that all data submitted will be open access.
- The IOC Secretariat will ensure that there is a copyright agreement with ScienceMetrix.
- IOC Secretariat is requested to develop a concept note, describing the different elements and functionalities of the portal, no later than end 3Q of 2018.

4 Timeline

Timetable for the preparation of GOSR-II

Dates	Actions
1Q 2018	Decision concerning endorsement of the GOSR & Fundraising Invitation of EB & Online survey development
2Q 2018	Collection of information with regard to the approved outline EB meeting (confirmation of questionnaire)
3Q 2018	Circular Letter and Launching online survey
4Q 2018 ~1Q 2019	Submission of questionnaire and analysis Designing GOSR data portal and development Identification of co-authors and writing of individual chapters
2Q ~ 3Q 2019	Draft of the first text elements
2Q 2019	Start of the GOSR Portal beta service Identification of further expertise if needed Discussions by e-mail and teleconference with the EB and experts from Member States Review of the first text elements GOSR survey 2 nd round Second EB meeting (April-May possibly hosted by WIOMSA) Dates to be confirmed before 1 June.
3Q-4Q 2019	Writing and improving of text elements
1Q 2020	Finalization of discussions by e-mail and teleconference Review of conclusions and recommendations Completion of the structure
2Q 2020	Finalization of the report and executive summary Preparation of the presentation

Annex 1 – Agenda

Global Ocean Science Report-II – Editorial Board meeting 24-26 April 2018**Annotated Agenda****Day 1: Tuesday, 24 April 2018***08:30-09:15***Registration**

Participants will be greeted at the reception desk of the UNESCO main building and directed towards the meeting room, where they will register.

*09:30-13:00***Opening remarks and adoption of the agenda**

Mr Vladimir Ryabinin, Executive Secretary and UNESCO Assistant Director- General IOC will welcome the participants. Participants will briefly introduce themselves.

Mr Ryabinin will invite Ms Jacqueline Uku and Mr Jan Mees to take the chair. The Co-Chairs will invite participants to adopt the provisional agenda.

*10:30-10:45 Coffee break***1. Introduction to the GOSR-II**

The Co-Chairs will invite Mr Salvatore Aricò, Head of the Ocean Science Section, IOC, to provide an introduction to the process related to GOSR-II. Mr Aricò will recall the background related to the Report and its purpose. He will also introduce the terms of reference of the Editorial Board and what is expected of the Board in relation to GOSR-II. A discussion will follow.

2. Presentation of lessons learned from GOSR-I

The Co-Chairs will invite Mr Luis Valdés, Editor of GOSR-I, to present the process related to the production of GOSR-I, the main contents and findings of the Report, and his general views on GOSR-II. The Co-Chairs will invite Ms Kirsten Isensee, Assistant Editor of GOSR-I, to present lesson learned in relation to GOSR-I. A discussion will follow.

*13:00-14:00 Lunch break – preceded by a Group photo**14:00-17:30***3. Outline of GOSR-II**

It is proposed that a series of presentations and related discussions take place according to the draft outline for GOSR-II. The Co-Chairs will invite members of the Editorial Board and the IOC Secretariat to give those presentations, as follows:

- Chapter 1. Introduction: Rationale and scope of the report - Ms Jacqueline Uku and Mr Jan Mees
- Chapter 2. Definitions, data collections and analyses - Mr Rohan Pathirage and Ms Kirsten Isensee
- Chapter 3. Research capacity and infrastructure - Mr Kwame Koranteng, Mr Leonard Nurse, Ms Paula Cristina Sierra Correa, Mr Yoshihisa Shirayama and Mr Luis Valdés

15:30-15:45 Coffee break

- Chapter 4. Ocean Science investments - Ms Claire Jolly and Mr Youn-Ho Lee
- Chapter 5. Research productivity and science impact - Mr Rohan Pathirage and Mr Luis Valdés



- Chapter 6. Ocean science data and information - Mr Peter Pissierssens
- Chapter 7. Implications and applications of ocean science for sustainable development - Mr Salvatore Aricò
- Chapter 8. Conclusions and recommendations - Mr Salvatore Aricò
- followed by a general discussion

Day 2: Wednesday 25 April 2018

09:00-13:00

4. Outline of GOSR-II (ctd.)

10:30-10:45 *Coffee break*

5. Outline of GOSR-II (ctd.)

13:00-14:00 *Lunch break*

14:00-17:30

6. GOSR-II draft questionnaire and survey; and GOSR-II Data Portal

The Co-Chairs will invite participants to split into two breakout groups, on the GOSR-II draft questionnaire and survey, for which Ms Kirsten Isensee will act as the facilitator; and on the GOSR-II Data Portal, for which Mr Peter Pissierssens will act as the facilitator. The breakout groups will then report to Plenary.

15:30-15:45 *Coffee break*

Day 3: Thursday 26 April 2018

09:00-13:00

7. Review key issues or recommendations produced on Day 2

The Co-Chairs will invite Mr Henrik Enevoldsen to present an account of issues or recommendations drawn from the discussions on Day 1 and 2. A general discussion will follow.

8. Organization of work

The Co-Chairs will invite Ms Kirsten Isensee and Mr Henrik Enevoldsen to present plans for the organization of work related to GOSR-II, including the related attribution of tasks, timetable, and organization of the peer review process. The dates for the second meeting of the GOSR-II Editorial Board meeting will also be agreed upon.

10:30-10:45 *Coffee break*

9. Closure

The Co-Chairs will summarize the discussions and outcomes of the meeting and indicate next steps in the process from their perspective. The Executive Secretary and UNESCO Assistant Director-General IOC or his representative will formally close the meeting.

Annex 2 – Terms of reference of the GOSR-II Editorial Board

Terms of Reference of the GOSR-II Editorial Board

In pursuance to Decision IOC-XXIX/5.1, adopted by the IOC Assembly at its 29th session (Paris, 21–29 June 2017), the Editorial Board will guide the production of the second edition of the Global Ocean Science Report (GOSR-II). More specifically, the Editorial Board

1. Provide strategic and substantive guidance on the framing of GOSR-II, in order to deliver against the Report's main goal: assess the status and trends of ocean science capacity around the world; and building on, and taking into account lessons learned in the production of, GOSR-I.
2. Provide guidance to ensure quality assurance and quality control of the contents of GOSR-II, inter alia by:
 - a. Approving the final selection of lead and contributing authors of GOSR-II, taking into account the need for discipline, issue area, geographic and gender balance;
 - b. Designing an adequate peer-review process;
 - c. Designating individual members of the Board as curators of individual chapters of II.
3. Provide guidance on the contribution of GOSR to the refinement of the methodology to measure progress towards the achievement of Sustainable Development Goal 14 of the United Nations 2030 Agenda on Sustainable Development and, specifically, its indicator A.1 "Proportion of total research budget allocated to research in the field of marine technology."¹
4. Provide guidance on the design of the GOSR Data Portal.
5. Design a methodology to evaluate the success of previous editions of GOSR, in terms of expected results and intended outcome.
6. Provide initial guidance on a methodology for assessing the contribution of ocean science to sustainable development and, in particular, to assessing the outcomes of tracked changes in ocean science capacities at the national, regional and global level.
7. Provide guidance on communication efforts aimed at promoting GOSR as a resource for policy-makers, academics and other stakeholders seeking to harness the potential of ocean science to address global challenges.
8. Provide guidance in relation to the launch of GOSR-II at the second United Nations Ocean Conference (tentatively to be held in Lisbon, Portugal, in the first half of 2020).

¹ Target 14.a reads "Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries".