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# IOC/SC-WESTPAC-XI/7.1

Bangkok, 16 March 2017

English only



## INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (of UNESCO)

**Eleventh Intergovernmental Session of the IOC Sub-  
Commission for the Western Pacific (WESTPAC-XI)**

Qingdao, China, 21-23 April 2017

Item **3.3.1** of the Provisional Agenda

### **DRAFT IOC PROGRAMME AND BUDGET FOR 2018-2019 (DRAFT 39 C/5)**

\*2018-2021 39 C/5 Volume 1 – Draft Resolutions First biennium 2018-2019  
available at <http://iocwestpac.org/calendar/794.html>



**INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION**  
(of UNESCO)

**Twenty-ninth Session of the Assembly**  
UNESCO, Paris, 21-29 June 2017

Items 3.2 and 11.1 of the Provisional Agenda

**DRAFT PROGRAMME AND BUDGET FOR 2018-2021 (DRAFT 39 C/5)**

**(First Biennium 2018-2019)**

Summary

This document contains the Secretariat's proposal of the Draft 39 C/5, which builds on the preliminary draft reviewed by the IOC Executive Council at its 49<sup>th</sup> session in June 2016 and Resolution EC-XLIX.2. This proposal also reflects the priorities and guidelines agreed by the IOC Governing bodies, the Executive Roadmap 'Future of the IOC' and the recommendations of the External Auditor of UNESCO in his report on the audit of the Commission conducted in April 2016 (200 EX/20.INF.2).

Decision: Following an introduction by the Executive Secretary, this document will be examined by the statutory open-ended Financial Committee and the decision reflected in the Draft Resolution that the Financial Committee will be submitting for adoption by the Executive Council in accordance with paragraph 15 of the [draft revised guidelines for the preparation and consideration of draft resolutions](#) (IOC/INF-1315).

## INTRODUCTION

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The present proposal for the Draft Programme and Budget for 2018-2021 (39 C/5) covers the second and final quinquennium of the Medium Term Strategy for 2014-2021. It is consistent with the guiding principles, mission and vision statement, functions, high-level and strategic objectives and global priorities defined therein.

At the time when the IOC's work and competences are in high demand, reconfirmed by the Member States responses to the UNESCO 39 C/5 questionnaire that place SDG 14 on Ocean and SDG 13 on Climate Change among the five highest priorities for more than 50% of responding Member States, the Commission has undertaken an extensive mapping exercise, linking key aspects of its mandate and core functions to the new international strategic frameworks and the current proposal for the IOC Draft Programme and Budget for 2018-2021. This exercise also builds on the priorities and guidelines agreed by the IOC Governing Bodies, including the June 2016 review by the 49th IOC Executive Council of the Strategic Results Report, the Executive Roadmap "Future of the IOC", and the recommendations of the External Auditor of UNESCO in his report on the audit of IOC conducted in April 2016.

These proposals were subject to an in-depth discussion by the IOC Officers at their annual meeting in Paris, 16-18 January 2017. They further benefitted from the co-design approach to programming through integration of regional priorities into global programmes objectives established in consultation with IOC's Regional Subsidiary Bodies.

In preparing it, the Secretariat's intention was to sharpen its action and to fully reflect the critical intergovernmental value of the IOC to its communities of stakeholders.

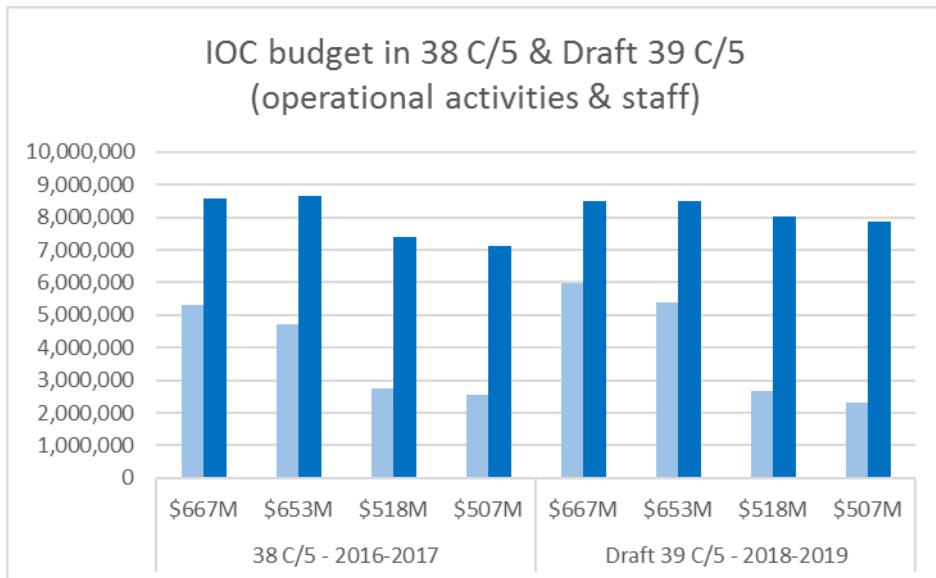
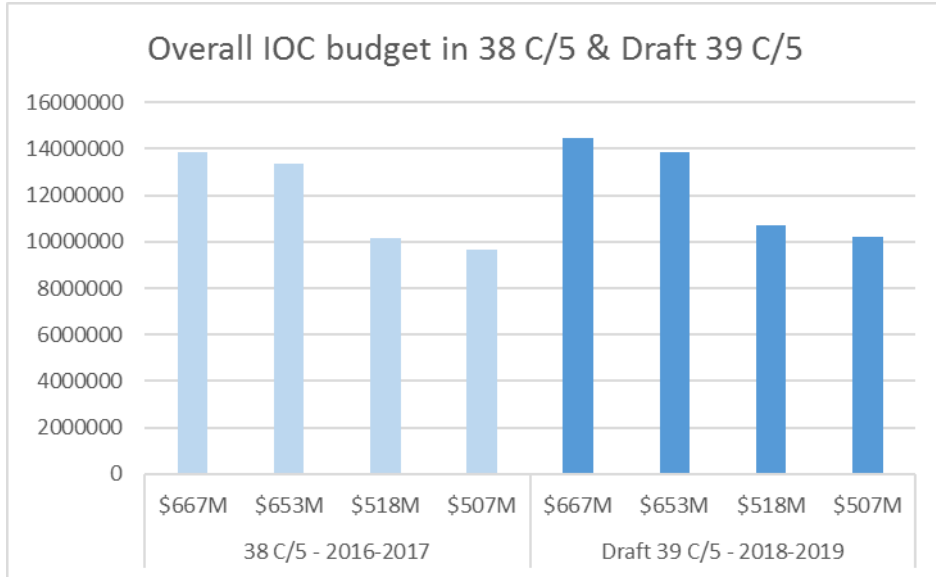
It should be noted that, in pursuance to the decisions of the IOC Executive Council in June 2016, endorsed by the UNESCO Executive Board in October 2016, the IOC is for the first time presented in a stand-alone chapter of the UNESCO C/5 (Addendum I to this document), thus highlighting its specific functioning, intervention modalities and key role in the achievement of the SDG 14 on the Ocean.

In accordance with UNESCO Member States' decisions, the Programme and Budget proposals submitted to the 201<sup>st</sup> session of the Executive Board contain two scenarios: one based on the regular budget of \$667M for UNESCO (\$14.5M for IOC) and one based on the regular budget of \$653M for UNESCO (\$13.9M for IOC). These are presented in Part I of this document.

In addition, two corresponding expenditure plans are prepared based on the expected assessed contributions for 2018-2019: one based on regular budget of \$518M for UNESCO (\$10.7M for IOC) and one based on regular budget of \$507M for UNESCO (\$10.2M for IOC). These are presented in Part II of this document.

In order to clarify the budgetary information provided further in this document, the table and charts below offer a simple comparison between the current 2016-2017 biennium and the proposals for 2018-2019.

	38 C/5 - 2016-2017				Draft 39 C/5 - 2018-2019			
	\$667M	\$653M	\$518M	\$507M	\$667M	\$653M	\$518M	\$507M
Operations	5,296,300	4,705,800	2,748,400	2,540,700	5,971,900	5,381,800	2,659,100	2,324,900
Staff	8,564,600	8,654,600	7,406,600	7,132,100	8,487,100	8,487,100	8,022,200	7,873,300
<b>Total</b>	<b>13,860,900</b>	<b>13,360,400</b>	<b>10,155,000</b>	<b>9,672,800</b>	<b>14,459,000</b>	<b>13,868,900</b>	<b>10,681,300</b>	<b>10,198,200</b>

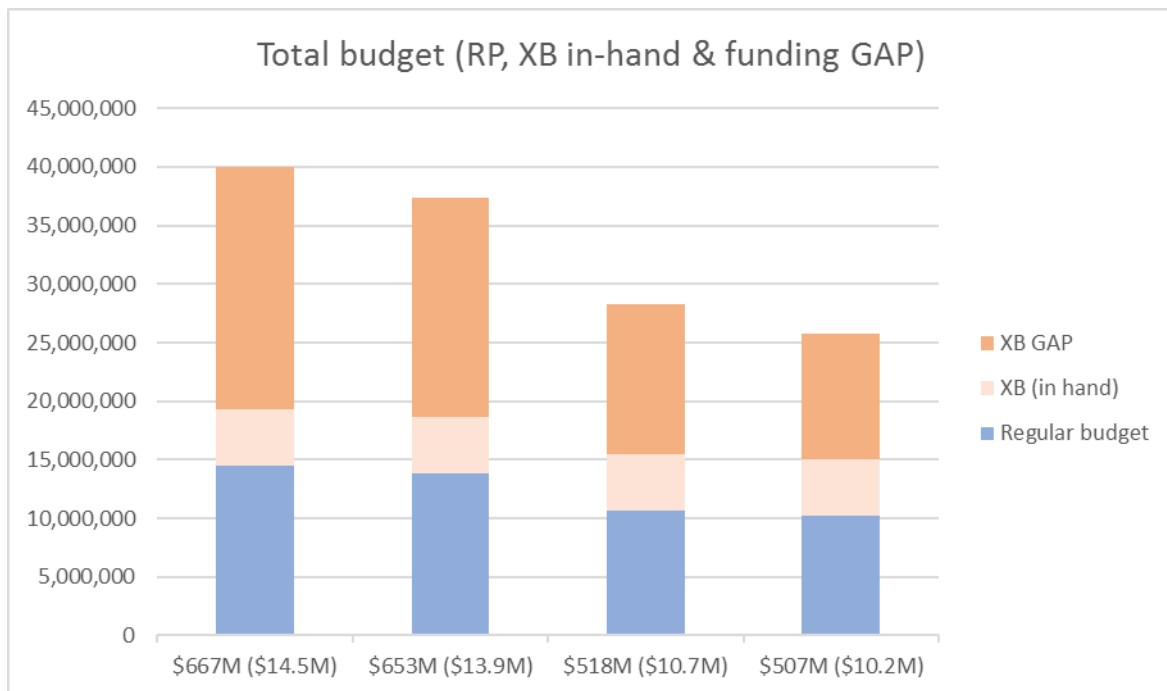


For the first time as well, in compliance with UNESCO Member States' decisions, UNESCO's – and therefore IOC's – C/5 Budget is based on an Integrated Budget Framework, allowing greater transparency of resources and helping to align resources with the collectively decided priorities. This is intended to facilitate the Structured Financing Dialogue, which has already largely been taking place as regards IOC with the endorsement by its Governing Bodies of the Complementary Additional Programme of Extrabudgetary Resources, along with the regular budget and special account allocations. The new approach should further bring together Member States and the Secretariat, to jointly ensure the funding necessary for the implementation of the programme and achievement of the expected results, including, but not limited to, the opportunities offered by Article 10.4 of the Statutes.

At the date of the preparation of this document, the amount of extrabudgetary funding in-hand or firmly committed through signed agreements, is of \$4,800,000.00. The Secretariat has defined extrabudgetary targets representing the funding it ambitions to raise for each of the 4 budgetary scenario. The difference between these extrabudgetary targets and the funds already in-hand or firmly committed represents the gap in funding that will guide the Commission's resource mobilisation efforts.

The tables and charts below provide the summary of this data for each of the 4 scenarios. More detailed breakdown of the same data by 'operational activities' and 'staff', as well as by regions, is provided further down in the document, under the detailed description of each scenario.

	<b>\$667M (\$14.5M)</b>	<b>\$653M (\$13.9M)</b>	<b>\$518M (\$10.7M)</b>	<b>\$507M (\$10.2M)</b>
<b>Regular budget</b>	<b>14,459,000</b>	13,868,900	<b>10,681,300</b>	10,198,200
<b>XB (in hand)</b>	<b>4,800,000</b>	4,800,000	<b>4,800,000</b>	4,800,000
<b>XB GAP</b>	<b>20,773,400</b>	18,713,400	<b>12,776,400</b>	10,726,400
<b>TOTAL</b>	<b>40,032,400</b>	37,382,300	<b>28,257,700</b>	25,724,600



## Part I

### **DRAFT PROGRAMME AND BUDGET 2018-2021 (First biennium 2018-2019)**

The years 2014-2015 were marked by significant developments in the global environmental governance, in which ocean issues were highly visible and sensitive. To a certain extent, these years offered for the IOC of UNESCO a test on relevance and impact. The active participation of UNESCO and its IOC in the Rio+20 Conference (2012) and follow-up activities strongly contributed to the adoption of the stand-alone Ocean Sustainable Development Goal no 14. SDG 14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development) recognizes the role of ocean science and IOC's standard-setting role as essential contributions to all challenges or dimensions of ocean sustainability (e.g. pollution, ocean acidification, fisheries, coastal livelihoods). The Commission will build on this recognition to fulfil its mandate as the leading United Nations mechanism for global and regional cooperation on ocean science.

Consistent with Resolution EC-XLIX.2 adopted by the IOC Executive Council in June 2016, the Commission's work will aim at achieving the following result: *"Science-informed policies for reduced vulnerability to ocean hazards, for the global conservation and sustainable use of oceans, seas and marine resources, and increased resilience and adaptation to climate change, developed and implemented by Member States, towards the realization of the 2030 Agenda"*.

In accordance with the IOC Medium-Term Strategy and Resolution XXVIII-3 of the IOC Assembly, during the quadrennium 2018-2021 the IOC will focus on the following four thematic programme areas (IOC High Level Objectives), with particular attention to ensuring that all its Member States have the capacity to meet their objectives. These areas are briefly outlined below.

#### **Ensuring healthy ocean ecosystems and sustaining ecosystem services**

In order to generate the knowledge relative to marine ecosystem function at the appropriate time scale and resolution, it is essential to build capacity and a globally managed and quality controlled knowledge base. IOC's work in this area will include coordination of essential research on ocean ecosystem health, extension of the ocean observing systems to embrace biology and ecosystem variables, a focus on strengthening the existing global network of data and information centres with an emphasis on data/information product/service development contributing to continuous monitoring of the identified indicators; support to the World Ocean Assessment and other related processes, and development of capacity to ensure strong science-policy interfaces in ocean management.

#### **Effective early warning for ocean hazards, including tsunami**

IOC's work in this regard will continue to focus on four areas: (i) support for the intergovernmental coordination of regionally harmonized tsunami warning systems; (ii) strengthening the work of regional Tsunami Information Centres that provide a clearing house for the development of educational and preparedness materials; (iii) targeted capacity development (CD) and technical assistance to enhance Member States' own ability to develop preparedness and awareness in a multi-hazard framework; and (iv) support for enabling research and policy development that lead to improved tsunami and ocean-related warning systems and preparedness.

## Increasing resiliency and adaptability to climate change and variability

IOC will address this through scientifically founded services and adaptation and mitigation strategies with an end-to-end effort that:

- begins with an ocean observing system sustainably monitoring the major global scales of climate (both physics and ocean carbon), building readiness and capacity in providing local information required in adaptation at the coast and to address the impact of climate change and ocean acidification on marine and coastal ecosystems, and linked to a data management system built on global standards and best practices,
- coordinates ocean climate research that improves understanding of the climate system and prediction of its variability and change and builds a knowledge base on linked ocean ecosystem changes and adaptation strategies,
- partners in the Global Framework for Climate Services and informs IOC-led and other assessment processes, and
- applies the scientific knowledge to improve regional management and governance of climate adaptation and mitigation strategies, building capacity through demonstration projects and shared tools.

## Enhancing knowledge of emerging issues

There is a broad range of emerging environmental issues such as new contaminants (including microplastics), invasive species, marine renewable energies, the expansion and intensification of uses of marine resources, and cumulative effects of human maritime activities. IOC’s work will focus on improving the understanding of the opportunities and of the changes that are occurring within the ocean, including the deep sea. Continued coordination of scientific research and call out of these issues in a way that can be communicated to policy will be important, in order to articulate and promote the principle of science-based sustainable ocean economies/blue growth approach.

<b>Intergovernmental Oceanographic Commission:</b> “Promoting knowledge and capacity for protecting and sustainably managing the ocean and coasts”		
<b>37 C/4 Strategic objectives</b>	<b>SO 5:</b> Promoting international scientific cooperation on critical challenges to sustainable development	<b>SO4:</b> Strengthening science technology and innovation systems and policy – nationally, regionally and globally
<b>IOC Expected Result</b> (as approved by the IOC Council, June 2016)	Science-informed policies for reduced vulnerability to ocean hazards, for the global conservation and sustainable use of oceans, seas and marine resources, and increased resilience and adaptation to climate change, developed and implemented by Member States, towards the realization of Agenda 2030	
<b>Proposed Thematic areas:</b>	1. <b>Ensuring healthy ocean ecosystems and sustaining ecosystem services (SDG 14,</b> but also SDGs 2, 4, 6, 8, 12, 14 and 15)	

	<p>2. <b>Effective early warning for ocean hazards, including tsunami</b> (SDGs 11, 13, 1, 2 and 3)</p> <p>3. <b>Increasing resiliency and adaptability to climate change and variability</b> (SDGs 14, 13, 1, 2 and 11)</p> <p>4. <b>Enhancing knowledge of emerging issues</b> (SDGs 14, 13 and 9)</p> <p>Supported by institutional <b>Capacity Development</b> (CD) as a cross-cutting function, with focus on Global Priorities, Africa and Gender Equality (in line with SDG 5 target 5.5), and on SIDS (all of the above SDGs)</p>
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**Supporting Member States in the implementation of the 2030 Agenda and other ocean related global agendas**

The IOC approach is consistent with the recognition in the UNGA Resolution A/RES/70/1 on the 2030 Agenda of the *“integrated nature of the Goals as well as the interlinkages between them”* and the need for intergovernmental bodies and mechanisms like the IOC to support the thematic reviews of progress on the SDGs, including cross-cutting issues like the Ocean and its role in climate change mitigation and adaptation, by engaging *“all relevant stakeholders and, where possible, feed into, and be aligned with, the cycle of the high-level political forum”*.

With broad objectives relevant to the Agenda 2030 IOC possesses expertise and has a strong coordination role for monitoring and assessing the progress in implementing relevant SDG targets. As such, the Commission has been identified as “custodian agency” and a key contributor for the SDG 14 targets focused on ocean acidification, marine science capacity and marine pollution. Beyond SDG 14, most of the Goals are dependent on the ocean, especially SDG 2 on food security and improved nutrition, SDG 4 on lifelong learning opportunities, SDG 8 on economic growth and productive employment, SDG 11 on resilient and sustainable cities, and SDG 13 on climate change. Visual indication of relevance of IOC thematic areas to all SDGs, with a detailed breakdown into targets of SDG14, is presented in the table below. It is recalled that the entirety of IOC programmes and its expected result contribute to SDG 1 on the eradication of poverty and to SDG 10 on the reduction of inequalities.



## Mapping of IOC's contribution to the implementation of the 2030 Agenda

### INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (IOC)



IOC Thematic areas and Expected result	SDG 1 SDG 2 SDG 3 SDG 4 SDG 5 SDG 6 SDG 7 SDG 8 SDG 9 SDG 10 SDG 11 SDG 12 SDG 13 SDG 14 SDG 15 SDG 16 SDG 17																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Ensuring healthy ocean ecosystems and sustaining ecosystem services IOC-ER		2.4		4.7		6.5		8.4				12.2	14.1 14.2 14.3 14.5 14.7 14.a 14.c	15.5			
2. Effective early warning for ocean hazards, including tsunamis IOC-ER	1.5	2.4	3.9 3.d								11.b	13.1 13.3					
3. Increasing resiliency and adaptability to climate change and variability IOC-ER	1.5	2.4									11.b	13.1 13.2 13.3 13.b	14.2 14.3				
4. Enhancing knowledge of emerging issues IOC-ER								9.5				13.3	14.3 14.5 14.a				
Capacity development (cross-cutting thematic area) IOC-ER	1.5		3.9 3.d	4.7	5.5	6.5		8.4	9.5		11.b	12.2 12.8 12.a	13.1 13.2 13.3 13.b	15.5			17.6 17.9 17.16

IOC will be able to contribute to the SDG implementation and reporting through its regional programmes and global initiatives and the IOC's Global Ocean Science Report (GOSR), as well as its global network of national ocean data centres under IODE.

While the role of the Ocean is still insufficiently acknowledged in the climate change debate, despite increased visibility during COP 21, the fact that the world now has agreed on a universal comprehensive climate regime, creates an opportunity for UNESCO and its IOC to engage in and contribute to the implementation process of the Paris Climate Agreement. Systematic observations being explicitly recognized as crucial to strengthening scientific knowledge on climate and supporting decision-making, IOC's main entry point into the climate change regime will continue to be through ocean observation contributions to the Global Climate Observing System (GCOS) through the Global Ocean Observing System (GOOS), and scientific contributions to the Intergovernmental Panel on Climate Change (IPCC), through the World Climate Research Programme and its own scientific programmes. The Commission's future relevance will depend on its ability to mobilize Member States and engage with the scientific community and civil society to highlight the tight links between ocean and climate within the context of the next UNFCCC COPs. The recent decision of the IPCC to launch a special report on the climate change, cryosphere and the ocean will provide an opportunity for IOC to contribute as the lead United Nations body for global ocean observations, with key source of data and information for all aspects of work on climate. In this context, its cooperation with WMO through the Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM) – a unique joint commission of two United Nations bodies – and the co-sponsorship of the World Climate Research Programme (WCRP), the main international research body focusing on climate knowledge, predictions and research-based applications, is of utmost importance.

The SIDS Accelerated Modalities of Action (SAMOA) Pathway of 2014 highlights the significant risks posed by sea-level rise and other adverse impacts of climate change and the fact that growth prospects of SIDS have been hindered by the impacts of natural disasters and the

degradation of coastal and marine ecosystems. The SAMOA Pathway calls for increased attention by the international community to extreme weather events, sea-level rise, coastal erosion and ocean acidification. It urges for heightened technology, finance and capacity-building support in the context of climate change adaptation, calling for assistance to improve baseline monitoring of island systems. IOC's engagement in support of SIDS will be guided by the IOC SIDS Action Plan and Strategy adopted by IOC Member States in June 2016 in response to the SAMOA Pathway, with particular emphasis on the building of SIDS actions related to tsunami early warning systems, marine spatial planning, the development of marine scientific and technological capacity of SIDS, and enhanced cooperation to assess ocean acidification impacts.

The Sendai Framework for Disaster Risk Reduction (2015-2030) highlights international, regional, sub-regional and transboundary cooperation and calls for a broad and more people-centred preventive approach to disaster risk. It specifies seven global targets, among which is the need to substantially increase assistance to developing countries to complement their national action and ensure access to multi-hazard warning systems and disaster risk information and assessment by 2030. At present, with a very modest budget, the IOC coordinates a global tsunami warning system worth of hundreds of millions of dollars, supported by four regional tsunami warning systems in all tsunami-prone areas of the ocean. The IOC's hazard warning system develops in complete accordance with the Sendai Framework and is highly relevant in the context of SIDS and low-lying coastal countries. The Commission will continue the development of services to address the needs of governments and general public for warning and mitigation of coastal hazards, including tsunamis, extreme wave conditions and flooding, harmful algal blooms, coral bleaching, marine pollution incidents, supported by sustained observations and data and information management, as is the case for sea-level with the Global Sea Level Observing System (GLOSS).

As regards global and regional assessments and science-based information for policy, IOC's comparative advantage lies in its unique position as an intergovernmental framework to advance research and identify new scientific issues through collaborate action. The Commission's programme in ocean-sciences and its regional subsidiary bodies are focused on assisting its Member States with regard to the emerging issues of deoxygenation, climate change and global trends of phytoplankton and Blue Carbon, while continuing its leadership in coordinating the research on ocean acidification, marine ecological time series, marine pollution (including plastics and microplastics), nutrient enrichment and harmful algal blooms. These will provide essential IOC contributions to global science-policy processes such as the second cycle of the United Nations World Ocean Assessment (WOA-II) and the Intergovernmental Policy Platform on Biodiversity and Ecosystem Services (IPBES).

The global and regional ocean assessments will be also built on IOC's International Oceanographic Data and Information Exchange (IODE), as the only organizational framework that deals exclusively with international oceanographic data exchange, supported by field knowledge and expertise of the IOC Regional Subsidiary Bodies, and the Ocean Biogeographic Information System (OBIS) – the world's leading database on ocean biodiversity contributing to at least 20 United Nations biodiversity targets, with their global network of data and information centres. IODE and OBIS will be essential to build the necessary capacity and globally managed and quality controlled knowledge base.

IOC will maintain its recognized role as the lead United Nations organization in the development of marine spatial planning, as already demonstrated by the uptake of the IOC guidelines by more than 40 countries engaged in ocean management. Through its programme related to

Integrated Coastal Management, the Commission will, working in close cooperation with other United Nations partners, provide technical support to Member States engaged in 17 GEF Large Marine Ecosystems regional projects, primarily operating in the developing world, and will develop new tools and capacity in relation to ecosystem based management at national and regional scale.

The IOC will contribute to the development of a new legally-binding instrument to conserve and sustainably use marine biodiversity of areas beyond national jurisdiction (the High Seas and the Area) under the United Nations Convention on the Law of the Sea (UNCLOS) to be adopted in 2018, particularly in relation to marine scientific research, capacity development and transfer of marine technology.

### **Global Priority Africa**

The African Union's Agenda 2063 recognised that 'Africa's Blue economy shall be a major contributor to continental transformation and growth, advancing knowledge on marine and aquatic biotechnology, the growth of an Africa-wide shipping industry, the development of sea, river and lake transport and fishing; and exploitation and beneficiation of deep sea mineral and other resources.' The African Union has also adopted the 2050 Africa's Integrated Maritime Strategy (AIMS2050), which outlines the actions that should be implemented to foster increased wealth creation from Africa's oceans and seas by developing a sustainable thriving blue economy on a secure environmentally sustainable manner. Both the AIMS2050 and the SDGs specifically recognize UNESCO/IOC's role in the promotion of scientific research and capacity development as well as transfer of technology in marine sciences.

The IOC's Sub Commission for Africa and Adjacent Island States (IOCAFRICA) has coordinated the development and implementation of initiatives to create scientifically literate citizens in ocean sciences in Africa targeting all sectors of society and promoting collaboration between marine scientists, educators and other stakeholders, such as policy-makers and the private sector.

In the next quadrennium, the IOCAFRICA Secretariat, located in the UNESCO Office in Nairobi will focus on developing a lead project in this area, jointly with UNESCO Venice Office and in collaboration with the Education Sector. The main objectives of this Priority Africa-related intersectoral initiative will be to: (i) provide scientific information targeting different categories of users, especially resource managers, research and academic institutions, as well as regional and international programmes, in order to facilitate the integrated management of the marine and coastal environment and resources; (ii) develop and strengthen links between the scientific community and governments, regional and international bodies and programmes (including UN agencies and NGO's) and other potential users of ocean science and research results (including the public) and ; (iii) improve science-policy interface for marine sciences in Africa.

The IOC will allocate the appropriate financial and human resources from its Regular Programme and seek extra-budgetary funding, as necessary, to develop and implement the above indicated key initiatives. The Commission will make the best use of its field presence in Africa, through IOCAFRICA while also strengthening collaboration with the Regional Economic Communities and by participation in relevant United Nations thematic groups (i.e. Regional Coordination Mechanisms) to identify strategic projects and programmes targeting institutional capacity development.

### **Global Priority Gender Equality**

The IOC will continue to implement the Global Priority Gender Equality of the Organization, in particular through the information to be delivered by the Global Ocean Science Report, which will be launched in June 2017. The Report will provide a disaggregated by sex overview of distribution of researchers in different fields of ocean science. These data will serve as a baseline for developing meaningful biennial performance indicators and targets for the next quadrennial period of IOC's work in support of SDG 5, target 5.5.

International networks in marine science are important to foster ocean research globally in particular in SIDS, developing countries, and Africa. During the next quadrennial period, a comprehensive set of actions will be elaborated to encourage gender equality in both the leadership and membership in IOC networks.

### **Intersectoral cooperation**

In terms of intersectoral cooperation, IOC actively contributes to house-wide cooperation coordinated by the Natural Sciences Sector in the areas of DRR, SIDS and climate change. In addition to this and to the historically strong collaboration with IHP in integrated water resource management, and with CLT as regards Marine Spatial Planning, enhanced collaboration with SHS will be sought in relation to ethics and ocean.

Moreover, intersectoral initiatives will be developed at regional level, in particular in Africa, see section above on Global Priority Africa.

### **Programme delivery**

#### *Partnerships*

IOC intends to further reinforce and widen its partnerships, through enhanced association with NGOs, regional science organizations, practitioners, institution and expert networks and the public through its regional and other subsidiary bodies. In order to do this, the IOC will need to implement an efficient and tailored communication strategy enabling it to fully demonstrate the impact of its work. Taking into account that the ocean and marine affairs drive many socio-economic activities, IOC will engage with Member States and international and regional economic institutions to seek their support in highlighting to the relevant stakeholders the importance of the ocean activities for national economy and growth. In ocean literacy, IOC must equally further reaffirm its mediating role between the scientific and the policy communities. In the context of the UN-Oceans, the Commission will work in cooperation with other members such as UNEP, FAO and WMO in the development of 'SDG enabling activities'. IOC would also like to see such joint activities emerge from the intersectoral work on the 2030 Agenda, SIDS Action Plan, Sendai Framework, UNFCCC COP processes, etc., to maximize the comparative advantage of UNESCO's comprehensive interdisciplinary approach to key societal issues.

#### *Resource mobilization*

To ensure adequate resource mobilization for its core activities, IOC will engage more strategically in the management and coordination of extrabudgetary projects or provision of services. While IOC aims to develop core systems in oceanography, which is challenging and requires a sustained and focused effort, there are now many other organizations in the world that use ocean data and observations to generate products that raise their own visibility.

Because of that, the up-stream role of IOC in the information delivery process is sometimes difficult to explain to main stakeholders and funders, and even more so to the general public. To be successful, IOC will exercise careful selection and prioritisation of fundraising targets and develop an efficient, tailored and productive communication strategy in order to achieve its overall organizational objectives, engage effectively with relevant stakeholders, and demonstrate the impact of its work.

As part of that drive, and of the house-wide resource mobilization strategy, IOC will further engage with its resource partners in bilateral and collective donor consultations leading up to the Structured financing dialogues after the approval of the C/5 with the aim to jointly work together to address funding needs.

Against this backdrop, efforts will be made to diversify the existing donor base of IOC and to establish more long-term, predictable arrangements with resource partners. Emphasis will also be placed on securing an increasing proportion of more flexible, lightly earmarked funding.

### *Programme sustainability*

At the time when the IOC's work and competences are in high demand, reconfirmed by the responses to the 39 C/5 questionnaire that place SDG 14 on Ocean and SCG 13 on Climate Change among the five highest priorities for more than 50% of responding Member States, the Commission has undertaken an extensive mapping exercise, linking key aspects of its mandate and core functions to the new international strategic frameworks and the current proposal for the IOC Draft Programme and Budget for 2018-2021. This exercise also builds on the priorities, guidelines agreed by the IOC Governing Bodies, including the June 2016 review by the 49th IOC Executive Council of the Strategic Results Report, the Executive Roadmap "Future of the IOC", and the recommendation of the External Auditor of UNESCO in his report on the audit of IOC conducted in April 2016. These strategic reviews and the implementation of recommendations will raise the profile of the IOC in its core and unique mandate in the fields of long-term sustained observations and related data and information management, early warning systems for coastal hazards, capacity development, marine scientific research, transfer of marine technology and science-policy interface, linking the global priorities to regional and national ones.

IOC's very small secretariat is expected to oversee programme implementation, provide secretariat support to expert groups and IOC governing bodies, and must also respond to the UNESCO programme oversight, governance, and reporting requirements. The incompatibility of the current size of the secretariat and the scope of IOC activities is the main risk for proper programme delivery. To quote the very apt expression of the UNESCO External Auditor, 'IOC is at the crossroads'.

IOC will continue to build on existing strengths in identified functions and programmes that leverage, with a very small resource base, a multi-billion-dollar annual investment by Member States in ocean science, observations, data systems, and delivery of relevant ocean information for society. To maximize its impact and delivery towards the realization of the 2030 Agenda, the Commission will refocus its programmes and resources on the following directions: (i) developing capacities, brokering innovation and learning, and facilitating the transfer of marine technology; (ii) providing normative support to countries to establish, implement, monitor and report on implementation of the Ocean SDG 14 and its related targets; (iii) providing science-based policy advice for the implementation of integrated ocean governance and management;

(iv) maximizing IOC's convening role by bringing together stakeholders across public and private, policy and science sectors to implement, monitor and report on ocean-related issues; (v) further operationalizing the IOC Capacity Development Strategy 2015-2021, building on the findings of the first IOC Global Ocean Science Report (GOSR).

### **Budget scenarios and related adjustments**

The US \$ 653 M scenario will impact IOC's ability to assist and support its Member States in the SDG-14 implementation and monitoring process, and in particular as regards the development of capacities of Small Island Developing States (SIDS) and Least Developed Countries (LDCs). In addition to the responsibilities that come with the designation of UNESCO's IOC as a custodian of a number of SDG 14 indicators, sufficient stable regular budget is essential to the success of the concrete proposals being currently elaborated by the Commission for approval by IOC's and UNESCO's Governing Bodies and aiming at positioning the Organization at the heart of the international development agenda in terms of addressing the current and emerging major issues in marine scientific research, observations and services to help securing 'the Ocean We Need for the Future We Want'.

## Promoting knowledge and capacity for protecting and sustainably managing the ocean and coasts

IOC's result framework proposed below is structured around IOC's six functions as defined in IOC's Medium-term Strategy for 2014-2021. It benefitted from the co-design approach to programming through integration of regional priorities into global programmes objectives established in consultation with IOC's Regional Subsidiary Bodies. These functions are described below, together with relevant information concerning IOC's proposed key interventions and activities to be developed during the 2018-2021 quadrennium, in pursuance of the implementation of each of them:

### **IOC Function A: Ocean research**

The WMO-IOC-ICSU co-sponsored World Climate Research Programme (WCRP) conducts long-term large-scale observational and modelling projects in climate science and provides a highly recognized international forum for evaluating progress and setting perspective research directions to improve climate knowledge and convert it into a multitude of practical application of direct societal benefit. Working together, IOC and WCRP move forward the science needed to predict the regional climate change, to deeper understand and quantify the role of the ocean as a natural sink for CO<sub>2</sub>, which is fundamental for establishing international emissions stabilization scenarios and predict future climate with full account of ocean processes. Developing a global picture of the changing global climate requires significant international scientific cooperation and coordination. Research activities focused on ocean carbon sources and sinks, through e.g. the International Ocean Carbon Coordination Project (IOCCP), on ocean acidification, through the international partnership GOA-ON, and on Blue Carbon Ecosystems, through the Blue Carbon Initiative, provide scientific and technical advice to IOC-UNESCO Member States on matters related to ocean carbon, ocean acidification, blue carbon and climate change mitigation. IOC is the custodian agency for the indicator for the SDG 14 target on ocean acidification (14.3). To fulfil this role, the IOC, through the GOA-ON Data Portal, is centralizing all available and quality-controlled ocean acidification observing data. In order to better understand marine ecosystem functioning and impacts of climate change and variability and of ocean acidification and deoxygenation on ecosystem services, policy-relevant advice and new tools are delivered through a number of IOC-UNESCO led international scientific initiatives, such as the IOC International Group for Marine Ecological Time Series (IGMETS), the expert group on Climate Change and Global Trends of Phytoplankton in the Oceans (TrendsPO), and the IOC Global Ocean Oxygen Network (GO2NE). These groups provide a platform for national research institutions to collaborate and strengthen the knowledge base for policies and decision-making.

While underpinning IOC global programmes, IOC's Regional Subsidiary Bodies demonstrate the comparative advantage of the Commission in developing and implementing Member States-supported joint research programmes, tailored to address their estuaries, coastal and transboundary issues such as marine biodiversity conservation, ecosystem health, ocean processes and climate.

## **IOC Function B: Observing systems & data management**

Generating societal benefit from ocean information relies on a value chain that ends in user-focused services, operational (such as early warnings) or policy-oriented (such as assessments); steps through scientific forecast or analysis; interoperable ocean data and information management systems; and requires sustained ocean observations to underpin them. The potential users of ocean-related services are many, covering areas related to climate (where the Global Climate Observing System GCOS works across domains), operational ocean services, and ocean health. An integrated sustained ocean observing system and data management system maximizes common value to Member States. The Global Ocean Observing System (GOOS) and its GOOS Regional Alliances (GRAs), and the observations programme area of the Joint IOC-WMO Technical Commission for Oceanography and Marine Meteorology (JCOMM) and its JCOMM in situ Observing Programme Support Centre (JCOMMOPS) are the core IOC programmes that coordinate a sustained ocean observing system, following a Framework for Ocean Observing in the definition of common requirements, the coordination of observations including the promotion of standards and best practices, and appropriate interfaces with ocean data management systems. These observations should be coordinated, to common standards, and integrated for multiple purposes. New observing techniques and variables should be included when ready, and global capacity to make these observations nurtured, particularly through work at a regional level.

These programmes build on Member State-supported observing networks, engage a broad scientific community of operators of the sustained ocean observing system, which is in majority supported by limited-lifetime research funding. They deliver a better coordinated, more integrated, and more responsive sustained ocean observing system to Member States.

Intermediate outputs to implement to deliver against this function include:

- common requirements and strategic guidance expressed in the specifications of Essential Ocean Variables,
- tracking of metrics of progress, effort, and risk, with the ability to look by basin, region, and Member State, as well as global agreed goals,
- promotion of standards and best practices, including developing capacity,
- ensuring interoperability and best practices in network-based data management,
- ongoing technical coordination services to the Member State-based operators of the observing system, and
- a platform for communication and advocacy of sustained observations.

While a large number of Member States have participated in GOOS through the activities of GOOS Regional Alliances ('on paper' 104 MS of which 5 in Africa and 39 in SIDS), the reach of the GOOS Regional Alliances and scientific evaluation and observations coordination structures is smaller. The largest observing network in GOOS and JCOMM has about 60 active MS participating, while about 30 MS are able to leverage a broader range of coordinating services and strategic guidance under GOOS and JCOMM.

At this level of financial support (RP and full required EXB), GOOS and JCOMM will be able to fully address a broader set of users and requirements, *i.e.*:



- maintenance of the physical observations of the ocean for climate projections and services;
- expansion of observing networks towards the coast to better address local requirements;
- expand observations of biological and ecosystem variables addressing ocean health and SDG 14, through the needed coordination, standards and best practice for such observing networks, and engaging strongly with the development of indicators and assessments at the regional and global levels; and
- strongly promote the development of GOOS Regional Alliances by co-investing in projects.

In this value chain, the International Oceanographic Data and Information Exchange (IODE) addresses the management and global sharing of oceanographic data. Large volumes of reliable data sets for a wide variety of ocean variables collected through the above-mentioned observing systems need to be managed and shared globally. The Ocean Biogeographic Information System (OBIS) will be part of this linked data architecture, enabling the integration of environmental and biodiversity data. While IODE has developed the IODE Ocean Data Portal this is currently not a global system but links a limited number of nodes. It has not yet been possible to establish nodes in developing countries.

At present, Member States have access to and use 48 million records in OBIS database science & assessment, 6900 shared documents in IODE research expertise document repositories, and 500 data sets through the IODE Ocean Data Portal. No global data portal is available.

At this level of financial support (RP and full required EXB) IODE will be able to start the development of a truly global ocean data portal system that will federate existing national and regional data systems. In addition, the IODE network will be expanded by approximately 75%, covering the majority of IOC Member States.

The Second International Indian Ocean Expedition (IIOE-2) is a major global scientific programme, which will engage the international scientific community in collaborative oceanographic and atmospheric research from coastal environments to the deep sea over the period 2015-2020, revealing new information on the Indian Ocean fundamental for future sustainable development and expansion of the Indian Ocean's blue economy. IIOE-2 activities will include a significant focus on building the capacity of all nations around the Indian Ocean to understand and apply observational data or research outputs for their own socio-economic requirements and decisions. This level of funding will allow for serious co-investment in individual capacity development projects addressing the scientific themes and operational needs of IIOE-2.

At this value chain, IOC Regional Sub-Commissions (IOCAFRICA, IOCARIBE and WESTPAC) develop sustained regional ocean observations and services as part of GOOS in supporting Member States, and particularly developing countries, in their efforts to address the needs of a variety of human activities related to marine hazards mitigation, oil and gas exploration, fisheries, navigation, search and rescue, marine parks management and coastal recreational activities.

## **IOC Function C: Early warning and services**

Society resilience with regard to ocean hazards depends on effective use of the scientific knowledge base in sustained early warning services to protect life, health and property on the coast and at sea, and related education on the risks.

The IOC Tsunami Programme, through the intergovernmental coordination of regional warning systems, capacity development activities and the support of national and regional projects, is a key stakeholder for tsunami risk reduction at the global level. One of the core activities of the IOC Tsunami Programme is stakeholder training and education. Reducing the loss of lives and damage to livelihoods produced by tsunamis requires assessing tsunami risk, implementing Tsunami Early Warning Systems, and educating communities at risk about preparedness measures.

The provision of early warning services for other ocean hazards (sea ice, waves, storm surges, and harmful algal blooms) requires intergovernmental coordination and promotion of common standards and best practices. Many of these services are underpinned by the development of operational ocean forecast systems. Services related to sea ice, waves, and storm surges, as well as operational ocean forecast systems, are intergovernmentally coordinated through the WMO-IOC JCOMM in concert with ocean agencies and meteorological services around the globe. The development of guides on best practices serves new entrants and can provide a basis for capacity development activities.

Although a natural part of marine ecosystems, occurrences of certain microalgae in marine or brackish waters is a serious hazard, which can cause massive fish kills, contaminate seafood with toxins, threaten public health and alter ecosystems in ways that humans perceive as harmful. Economic and social impacts may be significant. Furthermore, the occurrence of some harmful algae is linked to eutrophication and other anthropogenic change. The IOC's International Harmful Algal Bloom Programme (I-HABP) is a leading global platform for international cooperation in developing knowledge-based products to enhance Member State capacity for observation, modelling and management of harmful algal events at local and regional scales. At the regional level, the IOC Regional Sub-Commissions also advance scientific research, develop capacities of, and provide emergency technical assistance to, IOC Member States in order to mitigate the negative impacts of harmful algal blooms and coral bleaching.

## **IOC Function D: Assessment and information for policy**

Robust ocean science-policy interfaces at the global, regional, and national levels are an essential building block towards the formulation of evidence-based policy and decision-making. The IOC contributes to a number of global assessment processes aimed at keeping the ocean under review and track changes in ocean conditions, specifically through the UN World Ocean Assessment, the Intergovernmental Platform on Biodiversity and Ecosystem Services, and the newly established IPCC Special Report on the Ocean and cryosphere. The role of IOC as custodian agency for some of the SDG 14 targets implies a new responsibility for its science, data management and capacity development programmes, to provide normative support to nations in monitoring and reporting the implementation of the Ocean SDG. Specific tools are needed to assist Member states to mitigate ocean threats. Specifically, increases in nutrient loading, which is linked with increased primary productivity, may lead to the development of blooms of harmful algae, leading to anoxia, and detrimental impacts on fisheries resources,

ecosystems services, and human health or recreation. The export of Phosphorus to the ocean has increased 3-fold compared to pre-industrial levels, and Nitrogen has increased even more dramatically, especially over the last 40 years. IOC will assist technical and policy makers design and facilitate strategies to improve nutrient use management at source, particularly in the agricultural sector, and reduce influx of nutrients from various sources to the environment. Member States' capacity to manage nutrient loading to coastal ecosystems is enhanced through technical training in the Global Nutrient Management Toolbox developed through inter-agency collaboration under the Global Partnership on Nutrient Management (GPNM) and through targeted development of the Index of Coastal Eutrophication Potential (ICEP) as an indicator for Sustainable Development Goal 14.1. The IOC will also invest in supporting the development of the Global Bathymetric Chart of the Oceans (GEBCO), together with the IHO, leading to the expansion of knowledge related to seafloor depths and features which is critical to support marine research, as well as the production of tsunami inundation, wave, storm surges and coastal erosion models in coastal areas. Member States will use high-resolution maps to support the development of coastal and marine management plans in their national waters. Technical support will be provided to Member States, and in particular, those most vulnerable to coastal hazards and climate change, to assess, design and implement science-based coastal hazard mitigation and adaptation plans, building on the existing IOC tools. Access to funding mechanisms such as the Adaptation Fund and Green Fund will be sought.

### **IOC Function E: Sustainable management and governance**

By acting as the focal point for ocean sciences within the UN system, IOC will continue to engage in relevant UN inter-agency activities aimed at providing assistance to Member States in the implementation of Agenda 2030, in accordance with IOC's custodianship role in relation to SDG14, as well as the implementation of the Paris Agreement on Climate Change, the SAMOA Pathway, and Sendai Disaster Reduction Framework. Overall guidance on general policy and the main lines of work of the Commission will be provided by the IOC Governing Bodies (Assembly and Executive Council), and for regional implementation by regional subsidiary bodies: IOC Sub-Commission for Africa and Adjacent Islands (IOCAFRICA), IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), the IOC Sub-Commission for the Western Pacific (WESTPAC) and the newly revitalized IOC Committee for the Northern Central Indian Ocean (IOCINDIO). Enhanced coordination amongst IOC global programmes and subsidiary bodies will be pursued in the achievement of IOC's objectives. IOC will lead the development of decision support tools and increase the capacity of coastal nations in managing their marine and coastal resources within an ecosystem-based framework. A dual approach, based on enhancing opportunities for the development of ocean-based economies whilst ensuring that marine and coastal biodiversity and ecosystem services are conserved, will provide the backbone of the IOC strategy in Marine Spatial Planning. To achieve this result, technical support and enabling activities will be provided to assist countries to initiate Marine Spatial Planning and best practices will be tracked and reported through an enhanced network of MSP/EBM managers. Decision support tools in the form of regional marine atlases with integrated data systems will also be implemented in at least 2 regions as tools to assist with coastal and ecosystem management. Global ecosystem-based governance of Large Marine Ecosystems and their coasts will be pursued by generating knowledge, building capacity, harnessing public and private partners and supporting south-to-south learning and north-to-south learning. This will be supported through collaboration with the GEF and UNDP.

## IOC Function F: Capacity development (cross-cutting)

In order to achieve equitable participation of all IOC Member States in IOC programmes and to ensure that all IOC Member States have the necessary capacity to address national as well as regional ocean related issues, a broad coordinated pan-IOC capacity development programme is being put in place.

The IOC's capacity development strategy and related implementation plans (global and regional) will address these needs. At this level of financial support, in combination with successful extrabudgetary fund mobilization efforts, IOC will be able to address the financial needs required to implement the plans. Training and education will be delivered through a global network of regional training (and research) centres that may use a common e-learning platform. Given the varying national and regional realities, capacities and development status, IOC Regional Subsidiary Bodies will serve as key vehicles for the implementation of the Strategy in their respective regions, taking an inclusive and adaptive approach.

Until the publication by IOC-UNESCO in 2017 of the first Global Ocean Science Report (GOSR) Member States, their institutions and policy makers had no integrated source of information on availability and location of ocean science capacity. This was a major handicap for planning and decision-making and for addressing marine environmental challenges. GOSR will assist local and national governments, academic and research institutions, as well as international organizations and donors, in making informed decisions, e.g. on future research investment. To facilitate access to these data and analysis for all and to allow wider use of all data, GOSR was developed as permanent on-line resource. IOC is the custodian agency for SDG indicator 14.a.1, and the definitions and mechanisms used in the development of SDG indicator 14.a.1 are based on the IOC Criteria and Guidelines on Transfer of Marine Technology and are part of the GOSR data collection and analysis. GOSR and associated data compilation will in this way support IOC-UNESCO Member States in their reporting on SDG targets.

**Expected result: Science-informed policies for reduced vulnerability to ocean hazards, for the global conservation and sustainable use of oceans, seas and marine resources, and increased resilience and adaptation to climate change, developed and implemented by Member States, towards the realization of Agenda 2030**

Performance indicators	Baselines	Targets 2019	
		\$667M	\$653M
1. N° of supported Member States which have conducted up-to-date ocean research to address specific challenges of the ocean and human impacts on coastal areas	(i) 50 MS of which 5 in Africa and 5 SIDS, participate in international research initiatives under the WCRP  (ii) 89 MS of which 22 in Africa and 11 SIDS, integrate best practices, standards and methodologies to observe ocean acidification and blue carbon ecosystems	(i) 58 of which 10 in Africa and 10 SIDS  (ii) 100 of which 28 in Africa and 15 SIDS	(i) 55 of which 8 in Africa and 8 SIDS  (ii) 96 MS of which 26 in Africa and 14 SIDS  (iii) 82 of which 8

	(iii) 76 MS of which 6 in Africa and 2 SIDS, contribute at improving understanding of marine ecosystem functioning and the impacts of change on ecosystem services	(iii) 85 of which 10 in Africa and 8 SIDS	in Africa and 4 SIDS
2. N° of supported Member States which maintained, strengthened and integrated global ocean observing, data and information system to reduce vulnerability to ocean hazards and benefit from their outputs	<p>(i) 104 MS are part of GOOS Regional Alliances, of which 5 in Africa and 39 in SIDS. Levels of participation and engagement vary, with an estimated <b>60</b> of which <b>5</b> in Africa and <b>8</b> in SIDS</p> <p>(ii) 13 MS of which 5 in Africa and 1 SIDS participate in IOGOOS, as an indicator of involvement in IIOE-2</p> <p>(iii) 20 MS contribute to JCOMMOPS</p> <p>(iv) 84 MS of which 19 in Africa participate in the IODE network &amp; collaborate in D&amp;IM</p>	<p>(i) 77 of which 12 in Africa and 18 SIDS</p> <p>(ii) 18 MS of which 8 in Africa and 3 SIDS</p> <p>(iii) 26 MS</p> <p>(iv) 120 of which 25 in Africa</p>	<p>(i) 73 of which 10 in Africa and 16 SIDS</p> <p>(ii) 17 of which 7 in Africa and 3 SIDS</p> <p>(iii) 25</p> <p>(iv) 110 of which 22 in Africa</p>
3. N° of supported Member States which have developed early warning systems and preparedness to mitigate the risks of tsunamis and other ocean-related hazards towards increased resilience	<p>(i) 72 MS of which 14 SIDS and 6 in Africa have National Tsunami Warning Centres</p> <p>(ii) 5 MS of which 5 SIDS have increased communities' preparedness</p> <p>(iii) 3 MS of which 1 SIDS, developed capacities for tsunami &amp; other coastal hazard assessment</p> <p>(iv) 9 MS actively participate in operational ocean forecast system (0 in Africa, 0 SIDS)</p> <p>(v) 45 MS developed capacities for research and management of harmful algae</p>	<p>(i) 79 of which 16 SIDS and 6 in Africa</p> <p>(ii) 15 of which 5 SIDS</p> <p>(iii) 7 of which 2 SIDS</p> <p>(iv) 19 of which 5 in Africa and 5 SIDS</p> <p>(v) 65 of which 10 in Africa and 8 SIDS</p>	<p>(i) 78 of which 16 SIDS and 6 in Africa</p> <p>(ii) 12 of which 5 SIDS</p> <p>(iii) 6 of which 2 SIDS</p> <p>(iv) 19 of which 5 in Africa and 5 SIDS</p> <p>(v) 55 of which 8 in Africa and 5 SIDS</p>
4. N° of supported Member States that have ocean science and policy interface mechanisms in support of healthy ocean ecosystems in accordance with Agenda 2030	<p>(i) 8 MS contribute to and use bathymetric datasets through GEBCO</p> <p>(ii) 25 MS of which 5 SIDS and 5 in Africa nominate experts to WOA Pool of Experts, and IPBES and IPCC assessments</p> <p>(iii) N° of MS contributing to national ocean SDG datasets through IODE - no existing baseline</p>	<p>(i) 18 of which 1 SIDS and 1 in Africa</p> <p>(ii) 35 of which 7 SIDS and 7 in Africa</p> <p>(iii) 50 of which 10 in Africa</p>	<p>(i) 15 of which 1 SIDS and 1 in Africa</p> <p>(ii) 30 of which 6 SIDS and 6 in Africa</p> <p>(iii) 45 of which 7 in Africa</p>

	<p>(iv) 25 MS participate in science and CD programmes on nutrients assessment and management</p> <p>(v) 5 MS in Africa implement science-based guidelines on coastal hazards mitigation/climate change adaptation</p>	<p>(iv) 45 of which 5 SIDS and 10 in Africa</p> <p>(v) 12 of which 5 in Africa and 3 SIDS</p>	<p>(iv) 40 of which 5 SIDS and 10 in Africa</p> <p>(v) 10 of which 5 in Africa and 1 SIDS</p>
5. N° of supported Member States which implement science-based ecosystem management and measure progress on SDG 14 implementation	<p>(i) 74 MS of which 16 in Africa and 8 SIDS contribute to the implementation of workplans of governing and regional subsidiary bodies</p> <p>(ii) 40 MS of which 5 in Africa and 3 SIDS develop marine spatial plans and sustainable ocean economic programmes</p> <p>(iii) 10 MS of which 3 SIDS participate in the implementation of inter-agency activities and outreach programmes</p>	<p>(i) 110 of which 20 in Africa and 14 SIDS</p> <p>(ii) 52 of which 10 in Africa and 6 SIDS</p> <p>(iii) 17 of which 6 SIDS</p>	<p>(i) 95 of which 18 in Africa and 12 SIDS</p> <p>(ii) 48 of which 8 in Africa and 6 SIDS</p> <p>(iii) 15 of which 5 SIDS</p>
6. N° of supported Member States which have developed institutional capacity and used it towards IOC's high-level objectives	<p>(i) N° of MS contributing to regional needs assessment and delivery of marine technology - no existing baseline</p> <p>(ii) 34 MS, of which 6 in Africa and 2 SIDS, contributing to 1<sup>st</sup> GOSR</p> <p>(iii)</p> <p>(a) N° of MS implementing CD workplans through IOCAFRICA, IOCARIBE, WESTPAC &amp; IOCINDIO – N/A as no CD plans adopted</p> <p>(b) 80 practitioners, of which 20 from Africa and 4 from SIDS, trained in priority topics identified regional sub-commissions</p> <p>(iv) 80 practitioners of which 20 in Africa and 0 SIDS, trained in priority topics identified through regional assessments</p>	<p>(i) 16 of which 3 in Africa and 1 SIDS</p> <p>(ii) 70, of which 10 in Africa and 10 SIDS, including gender disaggregated information from 60 MS</p> <p>(iii)</p> <p>(a) CD implementation plans adopted and implementation started</p> <p>(b) 200 practitioners, of which 60 in Africa and 10 SIDS</p> <p>(iv) 320 practitioners of which 120 in Africa and 10 SIDS, with a</p>	<p>(i) 12 of which 2 in Africa and 1 SIDS</p> <p>(ii) 70 of which 10 in Africa and 10 SIDS, including gender disaggregated information from 60 MS</p> <p>(iii)</p> <p>(a) CD implementation plans adopted and implementation started</p> <p>(b) 160 practitioners of which 40 from Africa and 10 SIDS</p> <p>(iv) 280 practitioners, of which 60 in Africa and 10 SIDS, with a gender target of 40% women (7 RTCs established)</p>

		gender target of 40% women (8 RTCs established)	
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**IOC I.1 – Integrated budget proposal based on regular budget of \$14.5M (\$667M for UNESCO)**

<b>\$667M (\$14.5M)</b>		
	<b>Regular budget</b>	<b>XB mobilization targets</b>
<b>FUNCTION A</b>	593,830	1,444,000
<b>FUNCTION B:</b>	1,331,070	4,425,200
<b>FUNCTION C</b>	1,007,905	4,552,000
<b>FUNCTION D</b>	613,605	2,571,200
<b>FUNCTION E</b>	1,020,517	6,578,000
<b>FUNCTION F</b>	929,035	6,003,000
<b>IOC NET OPERATIONAL BUDGET</b>	<b>5,495,962</b>	<b>25,573,400</b>
<i>UNDAF 1%</i>	54,960	
<i>Evaluations 3%</i>	164,878	
IOC Operating costs	75,000	
<i>IOC contribution to common charges</i>	181,100	
<b>TOTAL OPERATIONAL BUDGET</b>	<b>5,971,900</b>	
<i>Staff allocation</i>	8,320,300	
<i>IOC contribution to separation costs</i>	166,800	
<b>TOTAL STAFF COSTS</b>	<b>8,487,100</b>	
<b>TOTAL</b>	<b>14,459,000</b>	<b>25,573,400</b>
<b>GRAND TOTAL (ALL SOURCES OF FUNDING)</b>	<b>40,032,400</b>	

**IOC I.2 – Integrated budget proposal based on regular budget of \$13.9M (\$653M for UNESCO)**

<b>\$653M (\$13.9M)</b>		
	<b>Regular Budget</b>	<b>XB mobilization targets</b>
<b>FUNCTION A</b>	545,945	1,394,000
<b>FUNCTION B:</b>	1,164,930	4,405,200
<b>FUNCTION C</b>	869,899	4,552,000
<b>FUNCTION D</b>	542,476	2,471,200
<b>FUNCTION E</b>	987,802	5,918,000
<b>FUNCTION F</b>	817,510	4,773,000
<b>IOC NET OPERATIONAL BUDGET</b>	<b>4,928,562</b>	<b>23,513,400</b>
<i>UNDAF 1%</i>	49,285	
<i>Evaluations 3%</i>	147,853	
IOC Operating costs	75,000	
<i>IOC contribution to common charges</i>	181,100	
<b>TOTAL OPERATIONAL BUDGET</b>	<b>5,381,800</b>	
<i>Staff allocation</i>	8,320,300	
<i>IOC contribution to separation costs</i>	166,800	
<b>TOTAL STAFF COSTS</b>	<b>8,487,100</b>	
<b>TOTAL</b>	<b>13,868,900</b>	<b>23,513,400</b>
<b>GRAND TOTAL (ALL SOURCES OF FUNDING)</b>	<b>37,382,300</b>	



## Part II

### EXPENDITURE PLANS BASED ON THE EXPECTED ASSESSED CONTRIBUTIONS FOR 2018-2019

The ocean and its resources are increasingly recognized as being indispensable for addressing the multiple challenges that the planet faces in the decades to come. This is most recently manifested in the development of the global agreements adopted in 2014-2015 in which ocean issues have been highly visible and sensitive. To a certain extent, these years offered for the IOC of UNESCO a test on its relevance, impact and stability. Evidence of IOC's strong contribution to the adoption of the SDGs (2030 Agenda) by the United Nations General Assembly, and in particular of the stand-alone Goal 14 on Oceans, the recognition of the role of the Ocean in the UNFCCC Paris Climate Agreement 2015, the Sendai Disaster Risk Reduction Framework and the SAMOA Pathway convincingly show that IOC has been on the right path to contributing ocean-related solutions to major challenges of our time. This 'active role, sometimes well in advance' has been highlighted by the External Auditor in his report 200 EX/20.INF.2.

It is well known that the IOC has been strongly affected by the financial crisis experienced by UNESCO. It has seen not only the reduction in its regular budget but also a loss of extensive voluntary contributions, which used to provide a solid funding base for its global programmes. In the past three biennium, to give preserve to the extent possible to its delivery capacity in terms of programme implementation, the IOC drastically reduced its personnel, administration and coordination costs, leading to the situation of 'chronic understaffing' (200 EX/20.INF.2). Even with the recent reinforcement of the IOC budget in the ZNG+ 38 C/5, the Commission's budget only represents 1.96% of the total UNESCO budget, while the scope of Member States' expectations and requests for the IOC to deliver continues to increase. In their comments on the preliminary proposals for 39 C/5, the majority of Member States (almost two thirds) assessed as high the relevance and the comparative advantage of IOC in its thematic areas of competence (200 EX/13 Part I).

At this point in time, however, as we embark on the fourth biennium of budgetary restrictions, the IOC's ability to deliver is at stake. As stated by the External Auditor, the '*IOC is at a crossroads. It must recover from the shock of the 2011 financial crisis while facing major challenges from recent international developments concerning climate change, sustainable development and marine spaces*'.

Given the above-described context, the reduced budget alters the capacity of both the Secretariat and the IOC governing bodies (including regional and technical subsidiary bodies) to fulfil the minimum statutory obligations and provide core services to Member States.

It also jeopardizes UNESCO's ability to comply with the lead role entrusted to it, through its IOC, in particular in relation to SDG 14. IOC is actively working with relevant UN bodies to guide the development of performance indicators for the SDG targets. The IOC of UNESCO is a designated custodian agency for two targets under SDG 14 related to addressing the impacts of ocean acidification and building member states' ocean science capacity. These responsibilities have direct programmatic implications and will require to establish a new global monitoring framework under the IOC in order to collect, synthesise, assess and report the SDG 14 related

data provided by countries. The Commission is also deeply engaged in informing the United Nations process of creating a new legal regime under the UN Convention on Law of the Sea on the conservation of marine biodiversity beyond areas of national jurisdiction. The IOC Ocean Biogeographic Information System (OBIS) is the world's leading database on ocean biodiversity. It contributes to at least two of the 20 United Nations biodiversity targets.

The IOC coordinates regional tsunami warning systems in all four tsunami-prone areas of the ocean. An essential part of a tsunami warning system concerns awareness raising and education including organization of regular Tsunami warning exercises. This IOC work is a very strong contribution to the United Nations disaster risk reduction framework adopted in March 2015 by the Sendai Conference. With its very modest budget, the IOC coordinates a global tsunami warning system worth of hundreds of millions of dollars.

Systematic observations being explicitly recognized as crucial to strengthening scientific knowledge on climate and supporting decision-making, IOC's main entry points into the climate change regime have been through systematic ocean observations and scientific contributions to the Intergovernmental Panel on Climate Change (IPCC) assessments. The systematic ocean observation contributions to the Global Climate Observing System (GCOS) are coordinated through the Global Ocean Observing System (GOOS), working with Member States in their annual \$1-2 billion investment, in delivering systematic shared ocean observations available to all; addressing global climate, operational ocean services, and increasingly addressing questions of threats to ocean health with growing human pressures, including climate change. The recent decision of the IPCC to launch a special report on climate change, cryosphere and the ocean can provide the opportunity for IOC to contribute as the lead United Nations body for ocean observations, with key source of data and information for all aspects of work in relation to climate. Within the context of IOC, data and information management are dealt with through the IODE (International Oceanographic Data and Information Exchange) programme.

The sustainability of these activities and the very ability of UNESCO to adequately address the global and regional challenges through its IOC can be and **are** rightly questioned by the Member States and the Organization's External Auditor. While the exact programmatic and staffing choices will need to be decided by the IOC Assembly in June 2017, it is obvious that with one more biennium of ZNG budget, accompanied by cash-flow difficulties, the Commission will not be able to reinforce its regional presence and operationalise its Capacity Development Strategy 2015-2021.

With the budgetary difficulties of the last 3 biennia, the IOC has been facing the same main challenge in striking a balance between maintaining its core operational activities and ensuring the implementation of the IOC core mandate in ocean science and transfer of marine technology. In parallel, Member states continue to make large investments in ocean science and ocean observing infrastructure. If due to financial constraints IOC fails to harness that for a coordinated global ocean observing system and for providing the data streams for a world ocean assessment, this will lead to the loss of the leadership role and be a serious disservice to the discipline of oceanography and marine sciences. Within oceanography (as in many other geoscience fields) there is a trend toward developing sustained observation systems (locally, regionally and globally). If IOC and UNESCO are to deal effectively with the future of marine science, services and capacity building, we must ensure that the body that deals with sustained ocean observations and operational oceanography, the IOC secretariat, is adequately supported and that these responsibilities are not turned over to another organization. Without a legitimate and mandated role in these fields, we cannot claim to have capacity development activities in these fields because we will be disconnected from the appropriate communities.

This balancing act is unsustainable in the long term and the IOC Assembly will need to re-define the priorities, which may push most of our capacity development activities to extrabudgetary funding sources, at a time when Member States are in particular need of technical assistance and transfer of technology to help them meet their objectives under Agenda 2030 and other ocean-relevant conventions.

While the core underlying problems explained above will still persist and need to be addressed, the minimal breathing space allowed by the efforts of the Director-General to preserve the IOC budget despite all the constraints would allow the Commission to address the most urgent staffing issue related to the Caribbean Tsunami Information Centre (CTIC), much awaited by the SIDS of the region, and to consolidate the staffing on the Marine Policy & Regional Coordination Section to optimize delivery on the SDG mandate. The main focus will be on establishing a tailored capacity development programme to support Member States, and in particular SIDS, LDCs and African countries, through: i) the assessment of capacity needs for SDG implementation, building on the IOC global Ocean Science Report; ii) strengthening of the national statistical and data management capacity and improving national reporting mechanism on ocean-related targets; and iii) the establishment of regional platforms through IOC Regional Sub-Commissions to facilitate the transfer of marine technology. However, this reinforcement will only be possible with the abolition in 2017 of yet another G level post in the IOC Operational Support Unit. This will bring the total staffing of the IOC/EO/AO to 2 posts, which will even further increase the reporting and managerial burden on the 4 P5 Section Heads at Headquarters.

In the \$507 M scenario, the above activities will be considerably downscaled, and the CTIC position cannot be afforded in the Centre's current location in a SIDS Member State.

### **IOC Function A: Ocean research**

The WMO-IOC-ICSU co-sponsored World Climate Research Programme (WCRP) conducts long-term large-scale observational and modelling projects in climate science and provides a highly recognized international forum for evaluating progress and setting perspective research directions to improve climate knowledge and convert it into a multitude of practical application of direct societal benefit. Working together, IOC and WCRP move forward the science needed to predict the regional climate change, deeper understand and quantify the role of the ocean as a natural sink for CO<sub>2</sub>, which is fundamental for establishing international emissions stabilization scenarios and predict future climate with full account of ocean processes. Developing a global picture of the changing global climate requires significant international scientific cooperation and coordination. Research activities focused on ocean carbon sources and sinks, through e.g. the International Ocean Carbon Coordination Project (IOCCP), on ocean acidification, through the international partnership GOA-ON, and on Blue Carbon Ecosystems, through the Blue Carbon Initiative, provide scientific and technical advice to IOC-UNESCO Member States on matters related to ocean carbon, ocean acidification, blue carbon and climate change mitigation. IOC is the custodian agency for the indicator for the SDG 14 target on ocean acidification (14.3). To fulfil this role, the IOC, through the GOA-ON Data Portal, is centralizing all available and quality-controlled ocean acidification observing data. In order to better understand marine ecosystem functioning and impacts of climate change and variability and of ocean acidification and deoxygenation on ecosystem services, policy-relevant advice and new tools are delivered through a number of IOC-UNESCO led international scientific initiatives, such as the IOC International Group for Marine Ecological Time Series (IGMETS), the expert group on Climate Change and Global Trends of Phytoplankton in the Oceans (TrendsPO), and the IOC Global Ocean Oxygen Network (GO2NE). These groups

provide a platform for national research institutions to collaborate and strengthen the knowledge base for policies and decision-making. While underpinning IOC global programmes, IOC's Regional Subsidiary Bodies demonstrate the comparative advantage of the Commission in developing and implementing Member States-supported joint research programmes, tailored to address their estuaries, coastal and transboundary issues such as marine biodiversity conservation, ecosystem health, ocean processes and climate.

The targets for the reduced budget scenarios indicate the significant difficulty to maintain the level of results that IOC will have attained at the end of 2017. With the lowest (\$507M) budget, the IOC will face serious difficulty counteracting the erosion of the 2017 baseline. In the best of options, IOC will be able to keep the current level of participation in, involvement of, and benefits by Member States from IOC's activities, and in the \$518 scenario to slightly increase it (the indicated figures reflect a positive inertia effect in the implementation of ongoing activities, also taking into account the current biennium extrabudgetary envelope).

### **IOC Function B: Observing systems & data management**

Generating societal benefit from ocean information relies on a value chain that ends in user-focused services, operational (such as early warnings) or policy-oriented (such as assessments); steps through scientific forecast or analysis; interoperable ocean data and information management systems; and requires sustained ocean observations to underpin them. The potential users of ocean-related services are many, covering areas related to climate (where the Global Climate Observing System GCOS works across domains), operational ocean services, and ocean health. An integrated sustained ocean observing system and data management system maximizes common value to Member States. The Global Ocean Observing System (GOOS) and its GOOS Regional Alliances (GRAs), and the observations programme area of the Joint IOC-WMO Technical Commission for Oceanography and Marine Meteorology (JCOMM) and its JCOMM *in situ* Observing Programme Support Centre (JCOMMOPS) are the core IOC programmes that coordinate a sustained ocean observing system, following a Framework for Ocean Observing in the definition of common requirements, the coordination of observations including the promotion of standards and best practices, and appropriate interfaces with ocean data management systems. These observations should be coordinated, to common standards, and integrated for multiple purposes. New observing techniques and variables should be included when ready, and global capacity to make these observations nurtured, particularly through work at a regional level.

These programmes build on Member State-supported observing networks, engage a broad scientific community of operators of the sustained ocean observing system, which is in majority supported by limited-lifetime research funding. They deliver a better coordinated, more integrated, and more responsive sustained ocean observing system to Member States.

Intermediate outputs to achieve this expected result include:

- common requirements and strategic guidance expressed in the specifications of Essential Ocean Variables,
- tracking of metrics of progress, effort, and risk, with the ability to look by basin, region, and Member State, as well as global agreed goals,
- promotion of standards and best practices, including developing capacity,
- ensuring interoperability and best practices in network-based data management,

- ongoing technical coordination services to the Member State-based operators of the observing system, and
- a platform for communication and advocacy of sustained observations.

While a large number of Member States have participated in GOOS through the activities of GOOS Regional Alliances ('on paper' 104 MS of which 5 in Africa and 39 in SIDS), the reach of the GOOS Regional Alliances and scientific evaluation and observations coordination structures is smaller. The largest observing network in GOOS and JCOMM has about 60 active MS participating, while about 30 MS are able to leverage a broader range of coordinating services and strategic guidance under GOOS and JCOMM.

At this level of financial support (RP and full required EXB), GOOS and JCOMM will be continue to focus on the core climate observations developed in the 2000s, with:

- Maintenance of the physical observations of the ocean for climate projections and services,
- some consideration of the requirements for interfaces between open ocean and coastal areas, address local requirements where capacity already exists,
- an expansion of the requirements for observations of biological and ecosystem variables addressing ocean health and SDG 14, and coordination support to only the two most developed EOVs addressing corals and zooplankton, and
- support to the preparation of two GOOS Regional Alliances projects.

The operational maintenance of the observing networks by Member States as a system requires continual effort in coordination as well as yearly investment. With a reduction in coordination effort led by IOC, the engagement of Member States in a common system will decline in time - leading to a reduction in targets from the baseline in the budget scenario where regular programme resources are reduced from 38 C/5 levels.

In this value chain, the International Oceanographic Data and Information Exchange (IODE) addresses the management and global sharing of oceanographic data. Large volumes of reliable data sets for a wide variety of ocean variables collected through the above mentioned observing systems need to be managed and shared globally. The Ocean Biogeographic Information System (OBIS) will be part of this linked data architecture, enabling the integration of environmental and biodiversity data. While IODE has developed the IODE Ocean Data Portal this is currently not a global system but links a limited number of nodes. It has not yet been possible to develop nodes in developing countries.

At present, Member States have access to and use 48 million records in OBIS database science & assessment, 6900 shared documents In IODE research expertise document repositories, and 500 data sets through the IODE Ocean Data Portal. No global data portal is available.

While IODE has developed the IODE Ocean Data Portal this is currently not a global system but links a limited number of nodes. It has not yet been possible to develop nodes in developing countries.

At this level of financial support IODE will not be able to start the development of a global ocean data portal system that will federate existing national and regional data systems but will be able to draft the required system architecture and develop a metadatabase.

At this level of financial support, the IODE network will be expanded by approximately 15%.

The Second International Indian Ocean Expedition (IIOE-2) is a major global scientific program which will engage the international scientific community in collaborative oceanographic and atmospheric research from coastal environments to the deep sea over the period 2015-2020, revealing new information on the Indian Ocean fundamental for future sustainable development and expansion of the Indian Ocean's blue economy. IIOE-2 activities will include a significant focus on building the capacity of all nations around the Indian Ocean to understand and apply observational data or research outputs for their own socio-economic requirements and decisions. This level of funding will limit IOC's role to basic coordination under scientific themes and operational needs of IIOE-2.

At this value chain, IOC Regional Sub-Commissions (IOCAFRICA, IOCARIBE and WESTPAC) develop sustained regional ocean observations and services as part of GOOS in supporting Member States, and particularly developing countries, in their efforts to address the needs of a variety of human activities related to marine hazards mitigation, oil and gas exploration, fisheries, navigation, search and rescue, marine parks management and coastal recreational activities.

### **IOC Function C: Early warning and services**

Society resilience with regard to ocean hazards depends on effective use of the scientific knowledge base in sustained early warning services to protect life, health and property on the coast and at sea, and related education on the risks.

The IOC Tsunami Programme, through the intergovernmental coordination of regional warning systems, capacity development activities and the support of national and regional projects, is a key stakeholder for tsunami risk reduction at the global level. One of the core activities of the IOC Tsunami Programme is stakeholder training and education. Reducing the loss of lives and damage to livelihoods produced by tsunamis requires assessing tsunami risk, implementing Tsunami Early Warning Systems, and educating communities at risk about preparedness measures.

The provision of early warning services for other ocean hazards (sea ice, waves, storm surges, and harmful algal blooms) requires intergovernmental coordination and promotion of common standards and best practices. Many of these services are underpinned by the development of operational ocean forecast systems. Services related to sea ice, waves, and storm surges, as well as operational ocean forecast systems, are intergovernmentally coordinated through the WMO-IOC JCOMM in concert with ocean agencies and meteorological services around the globe. The development of guides on best practices serves new entrants and can provide a basis for capacity development activities.

Although a natural part of marine ecosystems, occurrences of certain microalgae in marine or brackish waters is a serious hazard which can cause massive fish kills, contaminate seafood with toxins, threaten public health and alter ecosystems in ways that humans perceive as harmful. Economic and social impacts may be significant. Furthermore, the occurrence of some harmful algae is linked to eutrophication and other anthropogenic change. The IOC's International Harmful Algal Bloom Programme (I-HABP) is a leading global platform for international cooperation in developing knowledge-based products to enhance Member State capacity for observation, modelling and management of harmful algal events at local and regional scales. At the regional level, the IOC Regional Sub-Commissions also advance scientific research, develop capacities of, and provide emergency technical assistance to, IOC Member States in order to mitigate the negative impacts of harmful algal blooms and coral bleaching.

Reduced budget will imply that: (i) reduced support will be available to the development of Tsunami Plans and Standard Operating Procedures, notably in SIDS; (ii) NPO position for staffing the Caribbean Tsunami Information Centre cannot be created in the \$507M scenario; (iii) there will be no support for international coordination efforts to improve operational forecast systems; (iv) African and SIDS Member States will have less opportunities for enhancing national capacity to manage ocean hazards and HAB events and that scientific advice to Member States at large will be reduced.

#### **IOC Function D: Assessment and information for policy**

Robust ocean science-policy interfaces at the global, regional, and national levels are an essential building block towards the formulation of evidence-based policy and decision-making. The IOC contributes to a number of global assessment processes aimed at keeping the ocean under review and track changes in ocean conditions, specifically through the UN World Ocean Assessment, the Intergovernmental Platform on Biodiversity and Ecosystem Services, and the newly established IPCC Special Report on the Ocean and cryosphere. The role of IOC as custodian agency for some of the SDG 14 targets implies a new responsibility for its science, data management and capacity development programmes, to provide normative support to nations in monitoring and reporting the implementation of the Ocean SDG. Reduced budget will impair IOC 's capacity to deliver internationally comparable data for relevant SDG 14 indicators to the UN. It will also lead to the downscaling of IOC contribution to global assessment processes. Specific tools are needed to assist Member states to mitigate ocean threats. Specifically, increases in nutrient loading which is linked with increased primary productivity may lead to the development of blooms of harmful algae, leading to anoxia, and detrimental impacts on fisheries resources, ecosystems services, and human health or recreation. The export of Phosphorus to the ocean has increased 3-fold compared to pre-industrial levels, and Nitrogen has increased even more dramatically, especially over the last 40 years. IOC will assist technical and policy makers design and facilitate strategies to improve nutrient use management at source, particularly in the agricultural sector, and reduce influx of nutrients from various sources to the environment. Member States' capacity to manage nutrient loading to coastal ecosystems is enhanced through technical training in the Global Nutrient Management Toolbox developed through inter-agency collaboration under the Global Partnership on Nutrient Management (GPNM) and through targeted development of the Index of Coastal Eutrophication Potential (ICEP) as an indicator for Sustainable Development Goal 14.1. Reduced budget availability will imply that African and SIDS Member States will have less opportunities for enhancing national capacity to manage nutrient loading and that development of ICEP as an indicator re SDG 14.1 is delayed.

The IOC will also invest in supporting the development of the Global Bathymetric Chart of the Oceans (GEBCO), together with the IHO, leading to the expansion of knowledge related to seafloor depths and features which is critical to support marine research, as well as the production of tsunami inundation models in coastal areas. Reduced budget availability would mean that IOC's support to GEBCO will remain minimal and increase the risk of losing ownership of this important co-sponsored programme.

Member States will use high resolution maps to support the development of coastal and marine management plans in their national waters. Technical support will be provided to Member States, and in particular those most vulnerable to coastal hazards and climate change, to assess, design and implement science-based coastal hazard mitigation and adaptation plans, building on the existing IOC tools. Access to funding mechanisms such as the Adaptation Fund and Green Fund will be sought.

## **IOC Function E: Sustainable management and governance**

IOC acting as the focal point for ocean sciences within the UN system will continue to engage in relevant UN inter-agency activities aimed at providing assistance to Member States in the implementation of Agenda 2030, in accordance with IOC's custodianship role in relation to SDG14, as well as the implementation of the Paris Agreement on Climate Change, the SAMOA Pathway, and Sendai Disaster Reduction Framework. Reduced budget will however lower the capacity of IOC to engage in the development of inter-agency initiatives in support of these global agreements, hence resulting in lower visibility and benefits for its Member States. Overall guidance on general policy and the main lines of work of the Commission will be provided by the IOC Governing Bodies (Assembly and Executive Council), and for regional implementation by regional subsidiary bodies: IOC Sub-Commission for Africa and Adjacent Islands (IOCAFRICA), IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), the IOC Sub-Commission for the Western Pacific (WESTPAC) and the newly revitalized IOC Committee for the Northern Central Indian Ocean (IOCINDIO). Reduced budget will translate in a lower impact and delivery of IOC programmes in the regions. IOC will lead the development of decision support tools and increase the capacity of coastal nations in managing their marine and coastal resources within an ecosystem-based framework. A dual approach, based on enhancing opportunities for the development of ocean-based economies whilst ensuring that marine and coastal biodiversity and ecosystem services are conserved, will provide the backbone of the IOC strategy in Marine Spatial Planning. To achieve this result, technical support and enabling activities will be provided to assist countries to initiate Marine Spatial Planning and best practices will be tracked and reported through an enhanced network of MSP/EBM managers.

Reduced budget will imply that African and SIDS Member States will have less opportunities to benefit from this technical support and related capacity development in ecosystem-based management. The development of marine atlas as a decision support tool will have to be limited to one region only, ie. the Latin American region, building on existing investment.

Whilst Global ecosystem-based governance of Large Marine Ecosystems and their coasts will be pursued by generating knowledge, building capacity, harnessing public and private partners and supporting south-to-south learning and north-to-south learning, IOC will have difficulties maintaining its co-financing to the 2 GEF UNDP projects related to International Water and LMEs.

## **IOC Function F: Capacity development (cross-cutting)**

In order to achieve equitable participation of all IOC Member States in IOC global programmes and to ensure all IOC Member States have the necessary capacity to address national as well as regional ocean related issues, all Member States need to acquire the necessary capacity.

IOC's capacity development strategy and implementation plans (global and regional) will address these needs. Given the varying national and regional realities, capacities and development status, IOC Regional Subsidiary Bodies will serve as key vehicles for the implementation of the Strategy in their respective regions, taking an inclusive and adaptive approach.



At this level of financial support progress with implementing CD implementation plans will be extremely limited (or non-existent in the \$507M scenario), as will be the mobilization of extrabudgetary funds (as IOC will not be in a position to provide counterpart contributions).

Until the publication by IOC-UNESCO in 2017 of the first Global Ocean Science Report (GOSR) Member States, their institutions and policy makers had no single point source for information, as basis for planning and decision making, of where science capacity exists to address marine environmental challenges. The GOSR assists local and national governments, academic and research institutions, as well as international organizations and donors, in making informed decisions, e.g. on future research investment. To facilitate access these data and analysis to all and to allow wider use of all data, the GOSR is developed to include a permanent on-line resource. The functionality of this on-line resource may be restricted by reduced budget availability. IOC is the custodian agency for SDG indicator 14.a.1, and the definitions and mechanisms used in the development of SDG indicator 14.a.1 are based on the IOC Criteria and Guidelines on Transfer of Marine Technology and are part of the GOSR data collection and analysis. The GOSR and associated data compilation will in this way support IOC-UNESCO Member States in their reporting on SDG targets.

**Expected result 1: Science-informed policies for reduced vulnerability to ocean hazards, for the global conservation and sustainable use of oceans, seas and marine resources, and increased resilience and adaptation to climate change, developed and implemented by Member States, towards the realization of Agenda 2030**

Performance indicators	Baselines	Targets 2019	
		\$518M	\$507M
1. N° of supported Member States which have conducted up-to-date ocean research to address specific challenges of the ocean and human impacts on coastal areas	<p>(i) 50 MS, of which 5 from Africa and 5 SIDS, participating in international research initiatives under the auspices of the IOC co-sponsored WCRP</p> <p>(ii) 89 MS, of which 22 from Africa and 11 SIDS, integrating international best practices, standards and methodologies to observe ocean acidification and blue carbon ecosystems</p> <p>(iii) 76 MS, of which 6 from Africa and 2 SIDS, participating in science and CD initiatives aimed at improving understanding of marine ecosystem functioning and the impacts of change on ecosystem services</p>	<p>(i) 52 of which 7 from Africa and 7 SIDS</p> <p>(ii) 91 of which 24 from Africa and 13 SIDS</p> <p>(iii) 80 of which 8 from Africa and 4 SIDS</p>	<p>(i) 51 of which 6 from Africa and 6 SIDS</p> <p>(ii) 91 of which 23 from Africa and 12 SIDS</p> <p>(iii) 77 of which 7 from Africa and 3 SIDS</p>
2. N° of supported Member States which maintained, strengthened and integrated global ocean observing, data and information system to reduce vulnerability to ocean hazards and benefit from their outputs	<p>(i) 104 MS part of GOOS Regional Alliances, of which 5 in Africa and 39 in SIDS. Levels of participation and engagement vary, with an estimated 60, of which 5 in Africa and 8 in SIDS, actively participating in ocean observing activities coordinated through IOC.</p> <p>(ii) 13 MS, of which 5 in Africa and 1 SIDS, participate in the ongoing work of IOGOOS, as an indicator of involvement in IIOE-2</p> <p>(iii) 20 MS contribute to the work of JCOMMOPS</p> <p>(iv) 84 MS participating in the IODE network &amp; collaborating in D&amp;IM by applying standard methodology, of which 19 in Africa</p>	<p>(i) 60 of which 5 from Africa and 8 SIDS</p> <p>(ii) 13 of which 5 from Africa and 1 SIDS</p> <p>(iii) 20</p> <p>(iv) 90 of which 22 from Africa</p>	<p>(i) 55 of which 4 from Africa and 6 SIDS</p> <p>(ii) 12 of which 4 from Africa and 1 SIDS</p> <p>(iii) 18</p> <p>(iv) 87 of which 19 from Africa</p>
3. N° of supported Member States which have developed early warning systems and preparedness to mitigate the risks of tsunamis and other ocean-related	<p>(i) 72 MS, of which 14 SIDS and 6 MS from Africa, have National Tsunami Warning Centres with basic SOPs and capacity to provide and exercise national/local services</p> <p>(ii) 5 MS, of which 5 SIDS have increased communities' preparedness</p> <p>(iii) 3 MS of which 1 SIDS developed</p>	<p>(i) 75 of which 15 SIDS and 6 from Africa</p> <p>(ii) 9 of which 5 SIDS</p> <p>(iii) 5 of which 1</p>	<p>(i) 74 of which 15 SIDS and 6 from Africa</p> <p>(ii) 8 of which 5 SIDS</p> <p>(iii) 4 of which</p>

hazards towards increased resilience	<p>capacities for tsunami &amp; other coastal hazard assessment</p> <p>(iv) 9 MS actively participating in operational ocean forecast system (0 from Africa, 0 from SIDS)</p> <p>(v) 45 MS developed capacities for research and management of harmful algae</p>	<p>SIDS</p> <p>(iv) 13 of which 2 from Africa and 2 SIDS</p> <p>(v) 45 of which 6 from Africa and 5 SIDS</p>	<p>1 SIDS</p> <p>(iv) 13 of which 2 from Africa and 2 SIDS</p> <p>(v) 45 of which 6 from Africa and 5 SIDS</p>
4. N° of supported Member States that have ocean science and policy interface mechanisms in support of healthy ocean ecosystems in accordance with Agenda 2030	<p>(i) 8 MS contribute to and use bathymetric datasets through GEBCO</p> <p>(ii) 25 MS, of which 5 SIDS and 5 from Africa nominating experts to WOA Pool of Experts, and IPBES and IPCC assessments</p> <p>(iii) N° of MS contributing National ocean SDG datasets through IODE - no existing baseline as new mechanism</p> <p>(iv) 25 MS participating in science and CD programmes on nutrients assessment and management</p> <p>(v) 5 MS from Africa implement science-based guidelines on coastal hazards mitigation/climate change adaptation</p>	<p>(i) 12</p> <p>(ii) 25 of which 5 SIDS and 5 from Africa</p> <p>(iii) 45 of which 6 from Africa</p> <p>(iv) 35 of which 5 SIDS and 7 from Africa</p> <p>(v) 9 of which 5 from Africa and 1 SIDS</p>	<p>(i) 10</p> <p>(ii) 20 of which 4 SIDS and 4 from Africa</p> <p>(iii) 40 of which 5 from Africa</p> <p>(iv) 30 of which 4 SIDS and 5 from Africa</p> <p>(v) 7 of which 5 from Africa and 1 SIDS</p>
5. N° of supported Member States which implement science-based ecosystem management and measure progress on SDG 14 implementation	<p>(i) 74 MS, of which 16 from Africa and 8 SIDS, contribute to the implementation of workplans of governing and regional subsidiary bodies</p> <p>(ii) 40 MS, of which 5 from Africa and 3 SIDS, use IOC's ecosystem-based management tools to develop marine spatial plans and sustainable ocean economic programmes</p> <p>(iii) 10 MS, of which 3 SIDS, participate in the implementation of inter-agency activities and outreach programmes</p>	<p>(i) 88 of which 13 from Africa and 10 SIDS</p> <p>(ii) 45 of which 6 from Africa and 5 SIDS</p> <p>(iii) 13 of which 4 SIDS</p>	<p>(i) 80 of which 10 from Africa and 9 SIDS</p> <p>(ii) 43 of which 5 from Africa and 4 SIDS</p> <p>(iii) 12 of which 3 SIDS</p>
6. N° of supported Member States which have developed institutional capacity and used it towards IOC's high-level objectives	<p>(i) N° of MS contributing to regional needs assessment and delivery of marine technology - no existing baseline</p> <p>(ii) 34 MS, of which 6 from Africa and 2 SIDS, contributing to 1<sup>st</sup> GOSR published in 2017</p>	<p>(i) 10 of which 1 from Africa and 1 SIDS</p> <p>(ii) 60 of which 8 Africa and 8 SIDS including gender disaggregated human</p>	<p>(i) 8 of which 1 from Africa</p> <p>(ii) 60 of which 8 Africa and 8 SIDS including gender disaggregated human</p>

	<p>(iii)  (a) N° of MS implementing CD workplans through IOCAFRICA, IOCARIBE, WESTPAC &amp; IOCINDIO – N/A as no CD plans adopted</p> <p>(b) 80 MS practitioners, of which 20 from Africa and 4 from SIDS, trained in priority topics identified regional sub-commissions</p> <p>(iv) 80 MS practitioners, of which 20 from Africa and 0 from SIDS, trained in priority topics identified through regional assessments, with 4 IODE RTCs organizing 1 course/year each</p>	<p>resources information from 45 MS</p> <p>(iii)  (a) CD implementation plans adopted and implementation started, with minimal seed funding, otherwise dependent on XB</p> <p>(b) 120 practitioners MS, of which 20 from Africa and 5 from SIDS</p> <p>(iv) 100 practitioners of which 30 from Africa and 0 SIDS, with a gender target of 40% women (5 RTCs established)</p>	<p>resources information from 45 MS</p> <p>(iii)  (a) CD implementation plans adopted and implementation started, entirely conditional on availability of XB funding</p> <p>(b) 90 practitioners MS, of which 20 from Africa and 4 from SIDS</p> <p>(iv) 80 practitioners of which 25 from Africa and 0 SIDS, with a gender target of 40% women (4 RTCs established)</p>
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**IOC.II.1 – Integrated budget proposal based on regular budget of \$10.7M (\$518M for UNESCO)**

<b>\$518M (\$10.7M)</b>		
	<b>Regular budget</b>	<b>XB mobilization targets</b>
<b>FUNCTION A</b>	185,000	1,094,000
<b>FUNCTION B:</b>	567,000	2,745,200
<b>FUNCTION C</b>	450,000	3,582,000
<b>FUNCTION D</b>	287,000	1,877,200
<b>FUNCTION E</b>	527,700	4,443,000
<b>FUNCTION F</b>	391,300	3,835,000
<b>IOC NET OPERATIONAL BUDGET</b>	<b>2,408,000</b>	<b>17,576,400</b>
<i>UNDAF 1%</i>		
<i>Evaluations 3%</i>	20,000	
IOC Operating costs	50,000	
<i>IOC contribution to common charges</i>	181,100	
<b>TOTAL OPERATIONAL BUDGET</b>	<b>2,659,100</b>	
<i>Staff allocation</i>	7,890,500	
<i>IOC contribution to separation costs</i>	131,700	
<b>TOTAL STAFF COSTS</b>	<b>8,022,200</b>	
<b>TOTAL</b>	<b>10,681,300</b>	<b>17,576,400</b>
<b>GRAND TOTAL (ALL SOURCES OF FUNDING)</b>	<b>28,257,700</b>	

**IOC.II.2 – Integrated budget proposal based on regular budget of \$10.2M (\$507M for UNESCO)**

<b>\$507M (\$10.2M)</b>		
	<b>Regular Budget</b>	<b>XB mobilization targets</b>
<b>FUNCTION A</b>	180,000	994,000
<b>FUNCTION B:</b>	537,000	2,395,200
<b>FUNCTION C</b>	450,000	3,221,600
<b>FUNCTION D</b>	250,000	1,634,200
<b>FUNCTION E</b>	499,800	3,871,400
<b>FUNCTION F</b>	177,000	3,410,000
<b>IOC NET OPERATIONAL BUDGET</b>	<b>2,093,800</b>	<b>15,526,400</b>
<i>UNDAF 1%</i>		
<i>Evaluations 3%</i>		
IOC Operating costs	50,000	
<i>IOC contribution to common charges</i>	181,100	
<b>TOTAL OPERATIONAL BUDGET</b>	<b>2,324,900</b>	
<i>Staff allocation</i>	7,741,600	
<i>IOC contribution to separation costs</i>	131,700	
<b>TOTAL STAFF COSTS</b>	<b>7,873,300</b>	
<b>TOTAL</b>	<b>10,198,200</b>	<b>15,526,400</b>
<b>GRAND TOTAL (ALL SOURCES OF FUNDING)</b>	<b>25,724,600</b>	