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Item **12.3** of the Provisional Agenda

DRAFT MEDIUM-TERM STRATEGY FOR 2022–2029

PRELIMINARY PROPOSALS BY THE SECRETARIAT

Summary

This document contains the Secretariat's preliminary proposal for the Draft IOC Medium-Term Strategy for 2022–2029, as reviewed by the Officers of the Commission at their annual meeting, Paris, 15–17 January 2019. The draft document has also been circulated to the Intersessional Financial Advisory Group with a view of facilitating the review by the Assembly. It should be noted that, following the discussion at this Assembly, the document will be further reviewed by the IOC Executive Council at its 53rd session and the final version will be endorsed by the Assembly at its 31st session in 2021.

Decision proposed: Following the introduction by the Executive Secretary, the 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 Assembly in accordance with paragraph 15 of the Revised guidelines for the preparation and consideration of draft resolutions (IOC/INF-1315).

DRAFT IOC MEDIUM-TERM STRATEGY

2022–2029

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OUR MISSION

The purpose of the Commission is to promote international cooperation and to coordinate programmes in research, services and capacity-building, in order to learn more about the nature and resources of the ocean and coastal areas and to apply that knowledge for the improvement of management, sustainable development, the protection of the marine environment, and the decision-making processes of its Member States[1]

OUR VISION

Strong scientific understanding and systematic observations of the changing world Ocean climate and ecosystems shall underpin sustainable development and global governance for a healthy ocean, and global, regional and national management of risks and opportunities from the Ocean.

[1] IOC Statutes, Article 2.1

PREFACE

Ocean, the largest ecosystem on our planet, provides to our civilization a range of existentially important services. To keep benefitting from them, an equilibrium must be reached between the continuously increasing use of ocean space and resources and restoring and maintaining ocean's health, which is currently in fast decline. Actions required to achieve such a balance are all science-intensive. The pivotal role of the Intergovernmental Oceanographic Commission of UNESCO is therefore to bring together the scientific communities, the governmental decision-making system, and a broader set of stakeholders within our Member States, including the private sector and the civil society as a whole, in creating an efficient science-based integrated ocean management. Never in the history of our civilization has such cooperation been in a higher demand.

Facilitating international cooperation in ocean research and targeting it on solutions for sustainable development are the key determinants of the IOC strategy. The years 2014–2021 were marked by significant developments in the global environmental and ocean management, including the adoption by the United Nations General Assembly of the 2030 Agenda and its Sustainable Development Goals (SDGs), and in particular of the stand-alone Goal 14 to *Conserve and sustainably use the oceans, seas and marine resources for sustainable development*; the recognition of the role of the ocean in the UNFCCC Paris Agreement; the endorsement of the Sendai Framework for Disaster Risk Reduction and the Samoa Pathway. IOC's strong contribution to all these frameworks and the planning of the UN Decade of Ocean Science for Sustainable Development (2021–2030) have shown that the IOC can play a key role in ocean-related approaches to global challenges of our time.

IOC is entering the period of this Medium-Term Strategy, 2022–2029 with a clear understanding of its enhanced responsibility. The development of a sustainable ocean economy responding to the 2030 Agenda and the emergence of an international legally binding instrument on conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ) under the UN Convention of the Law of the Sea may invoke stronger responsibility of the ocean science and the IOC towards the global community.

The ability of IOC to deliver on its mandate and respond both to the ambitions placed on the Decade and its Member States aspirations and needs will require, in turn, stronger support from governments, increased decision-making power of IOC governing bodies, and adequate and reliable investment in the whole value chain of modern oceanography.

Peter M. Haugan
Chairperson

Vladimir Ryabinin
Executive Secretary

OUR HIGH LEVEL OBJECTIVES AND PRIORITIES

1. Through international cooperation, IOC aspires to help its Member States build and apply scientific knowledge to collectively achieve the following high-level objectives (HLOs), with particular attention to ensuring that all Member States have the capacity to meet them:

    1. Healthy ocean ecosystems and sustained ecosystem services
    2. Effective early warning systems and preparedness for tsunamis and other ocean-related hazards
    3. Increased resilience and adaptation to climate change and variability
    4. Scientifically-founded services for the development of the sustainable ocean economy
    5. Enhanced knowledge of emerging ocean science issues

2. *Objective 1:* Identifying robust indicators of ocean status and locating their tipping points relative to marine ecosystem functioning is important for the prediction or early detection of changes in ecosystem states and in the evaluation of ecosystem resilience. Such knowledge and analytical tools will be very valuable in ocean management in general and in transforming management of individual sectors into an ecosystem-based approach and underpinning the sustainable development of Blue Economy. The local and regional capacities, in terms of knowledge and tools, are also central for understanding how much an ecosystem can be stressed before it moves to other states from which recovery may be difficult. Current research on these topics is still piecemeal and needs coordination.

3. *Objective 2:* The ultimate objective of this HLO is to reduce risk, by encouraging communities to implement effective mitigating measures and become aware of the hazards they face. As coastal development continues at a rapid pace, society is becoming increasingly vulnerable to coastal flooding and other extreme sea-level events such as tsunamis. Ensuring that nations have access to the necessary information for coastal adaptation planning is dependent on continued progress in the implementation of tsunami and ocean observing systems, improvements of models of the climate systems and the development of local decision-support tools.

4. *Objective 3:* Climate variability and change impact many elements on which human well-being depends, modifying patterns of rainfall and drought, sea-level and coastal erosion, and through temperature changes and ocean acidification, adding stress to ecosystems and impacting on the goods and services they provide. Thus, human development goals including food security, access to water resources, and preparedness and resilience to disasters are threatened. Ocean plays a key role in climate. IOC will therefore assist its Member States in developing capacities for climate change impact mitigation and adaptation that are based on specialized scientific knowledge.

5. *Objective 4:* Ocean observations, data and information management, forecasting, and knowledge-based management approaches, such as marine spatial planning and coastal zone management, provide effective services to positively impact the sustainable ocean economy. IOC will facilitate the development of applications of ocean science that would maximize their societal benefit and stimulate the growth of sustainable marine industries.

6. *Objective 5:* A broad range of emerging environmental issues—such as new contaminants, ocean acidification, altered patterns of the ocean carbon cycle, de-oxygenation, the impacts of climate change on new ecological conditions, synergies among multiple stressors and their impacts on ocean health—jeopardize the conservation and sustainable use of marine spaces, the resources therein, as well as the marine ecosystems and the societal benefits they provide. Our understanding of the opportunities and changes that are occurring within the ocean, including the deep sea, in relation to these new activities is still forming. Further scientific research, technical analyses and syntheses of scientific data are required to generate the information needed to

effectively address these emerging issues, inform policy-making in the context of relevant regional and global conventions, and advance solutions involving multiple stakeholders at multiple levels in a timely and transparent manner.

7. **Global Priority Africa**: Africa is an overarching priority for UNESCO and IOC will ensure that it is mainstreamed in all its programmes and that it is reflected in its performance indicators. IOC will provide the science base necessary for the development of the Blue Economy in Africa as outlined in the African Union's Agenda 2063 *(The Africa we want: A shared Strategic framework for inclusive Growth and Sustainable Development*) and the *2050 Africa's Integrated Maritime Strategy* (2050 AIM Strategy). The 2050 AIM Strategy specifically recognizes the role of IOC/UNESCO in the promotion of scientific research and capacity development as well as transfer of technology in marine sciences.

8. **Global Priority Gender Equality**: The IOC contribution to Global Priority Gender Equality will focus on ensuring that international science cooperation for peace and sustainability allows for representation and voice for women and men, and that conditions for both women and men to be agents of mitigation, adaptation, resilience and sustainability are provided. IOC is committed to promoting the equal presence of men and women in the marine sciences community, as well as to encouraging activities to include women in marine sciences through effective measures and policies and promoting role models for young women. The IOC's *Global Ocean Science Report* will continue to provide the latest disaggregated information on women in marine science to monitor progress and assist Member States in their efforts to achieve gender equality for women in ocean science, based on international assessment.

9. **Small Island Developing States (SIDS) Action Plan**: The SIDS Accelerated Modalities of Action (S.A.M.O.A) 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 continue to focus on the building of SIDS actions related to tsunami early warning systems, the development of marine scientific and technological capacity of SIDS, and enhanced cooperation to assess ocean acidification impacts.

UNITED NATIONS DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT (2021–2030)

10. The UN Decade of Ocean Science for Sustainable Development (the "Decade") will run from 2021 to 2030. This unique long-term and high-level campaign will be aimed at bringing the ocean science to the new level needed to inform decisions, stimulate and maintain efficient actions and policies for sustainable use and protection of the ocean.

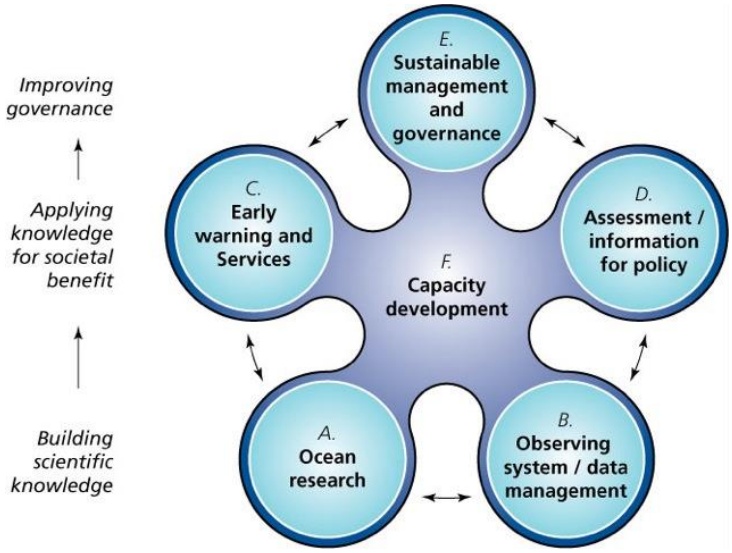
11. During the years 2022–2029, a major responsibility of IOC will be to support and facilitate the Decade implementation and to regularly report progress to the United Nations Secretary General, in addition to contributing its own activities under the Decade. Successful conduct of the Decade assumes its true ownership by many partners and stakeholders that will use its framework and related opportunities to deliver on their mandate in all aspects depending on ocean science.

12. The Decade will offer an exceptional opportunity to highlight the societal benefits of all IOC programmes through a transformative approach to generating actionable scientific knowledge at the service of decision-makers. It will also allow for a powerful thrust in implementing the collectively agreed global priorities.

IMPLEMENTING THE STRATEGY

13. When working towards the high-level objectives, IOC will focus on the broad areas of:

- strengthening scientific knowledge of the ocean and human impact on it,
- applying that knowledge for societal benefit, and
- building institutional capacities for sound management and governance



14. The strategy is organized in a conceptual framework of *functions* required to advance towards the IOC Vision:

A. Foster research to strengthen knowledge of ocean and coastal processes and human impacts upon them *[Ocean research]*

B. Maintain, strengthen and integrate global ocean observing, data and information systems *[Observing system / data management]*

C. Develop early warning systems, services, and preparedness to mitigate the risks of tsunamis and ocean-related hazards *[Early warning and services]*

D. Support assessment and information to improve the science-policy interface *[Assessment and Information for policy]*

E. Enhance ocean governance through a shared knowledge base and improved regional cooperation *[Sustainable management and governance]*

F. Develop the institutional capacity in all of the functions above, as a cross-cutting function *[Capacity Development]*

15. These functions correspond broadly to and will be realized by existing and on-going IOC programmes, IOC regional subsidiary bodies and various mechanisms of cooperation, such as the Global Ocean Observing System (GOOS), the Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM) and the International Oceanographic Data and Information Exchange (IODE), the Ocean Biogeographic Information System (OBIS), the Tsunami Intergovernmental Coordination Groups (ICGs), World Climate Research Programme (WCRP) and the Ocean Sciences programme, Integrated Coastal Area Management (ICAM), Harmful Algal Blooms (HAB), and Capacity Development (CD). Calling out these functions therefore simplifies Member State engagement in the programmes of the Commission, and makes the programme and budget exercise more transparent.

16. *Functions contributing to Objective 1*: In order to generate the knowledge relative to marine ecosystem functioning at the appropriate time scale and resolution, it is essential to build capacity and a globally managed and quality controlled knowledge base. The strategy will therefore include: development and coordination of essential research on ocean processes, marine biodiversity and ocean ecosystem health; reinforcing the development of biology and ecosystems sustained observing networks as a part of the voluntary collaboration under the Global Ocean Observing System (GOOS); a focus on strengthening the existing IODE global network of data (and information) centres including the Ocean Biogeographic Information System (OBIS), with an emphasis on data/information product/service development contributing to continuous monitoring of the identified indicators; support to the United Nations World Ocean Assessment and other related processes; and development of capacity to ensure strong science-policy interfaces in ocean management.

17. *Functions contributing to Objective 2*: In terms of early warning systems and preparedness for tsunamis and ocean-related hazards, the strategy will 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 clearinghouse for the development of educational and preparedness materials; (iii) targeted capacity development and technical assistance to enhance Member States own ability to develop preparedness and awareness in a multi-hazard framework; and (iv) support for enabling modelling, research and policy development that lead to improved tsunami and ocean-related warning systems and preparedness.

18. *Functions contributing to Objective 3*: IOC will address the objective of increased resiliency to climate change and variability through scientifically founded services, 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), and they key variables used in operational services, 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 the understanding of ocean processes and climate change, the predictability of climate variability and change; builds a knowledge base on linked ocean ecosystem changes and adaptation strategies;

- partners with the World Meteorological Organization (WMO) in the development of next-generation services; informs IOC and other assessment processes; and

- applies the scientific knowledge base to improve regional management and governance of climate adaptation and mitigation strategies, building capacity through demonstration projects and shared tools.

19. *Functions contributing to Objective 4:* Ocean knowledge and open access to ocean information and data have the power to generate profits and jobs in the marine economy sector and to maintain it on progressively sustainable path. By 2030, the ocean economy, buoyed by growth in tourism, mariculture and renewable energy, is predicted to significantly increase its share in many national economies, in both developed and developing countries. Engagement and strengthened partnerships along the whole value chain from ocean observations and research to the benefit creation by end-users will be pursued. Innovation and new technologies, delivery of predictions, services, and scientific assessments will support maritime economy and facilitate the identification of sustainability pathways. Defining optimal boundaries for economic operations, reducing conflicts between human uses of the ocean, sustaining ocean health and protecting the marine

environment will be promoted through ecosystem-based approaches such as Marine Spatial Planning and Large Marine Ecosystems.

20. *Functions contributing to Objective 5*: In order to identify and monitor emerging issues, it will be essential to coordinate scientific research and call out these issues in a way that can be communicated to policy. Strengthened and expanded ocean observation and associated global data/information management systems will support the research in emerging issues. Resolving conflicts among the numerous existing and emerging uses of the maritime domain represents a challenge. To properly address these issues and to use the results of the research effectively requires improved international collaboration. It will also be essential for negotiation capacities to be built in Member States so that they are able to bring emerging national and regional issues for consideration in UN and other intergovernmental fora.

Capacity Development Strategy

21. The United Nations Convention on the Law of the Sea (UNCLOS) recognizes IOC as the competent international organization in the fields of Marine Scientific Research (Part XIII) and Transfer of Marine Technology (Part XIV).

22. The IOC efforts in capacity development will be built starting from the level reached in the implementation of the IOC Capacity Development Strategy 2015–2021 and guided by the international assessments and reports, i.e. IPCC, WOA-2, etc. These efforts will strongly capitalize on the achievements to be obtained in the course of implementation of the Decade. The second edition of the IOC Global Ocean Science Report will provide a key benchmark for the IOC's work and further editions will allow monitoring progress.

23. The role of IOC will be to ensure the research focuses on issues of crucial importance for sustainable development and to increase the capacity of the cutting-edge research through cooperation. In parallel, IOC will continue to enhance the capacity of ***all*** IOC Member States to conduct scientific research and benefit from its results. This pillar of the IOC CD work will include operationalization of the *IOC Criteria and Guidelines on Transfer of Marine Technology* (TMT) and the TMT Clearing House Mechanism. The work of the IOC Expert Group on Capacity Development will continue and intensify. IOC will contribute substantially to the development of Member States' capacities in relation to the new international legally binding instrument on BBNJ, simultaneously delivering towards achieving Target 14.a of the 2030 Agenda.

24. Developing and sustaining innovative approaches to ocean governance will require improvements in global ocean literacy. This depends on the empowerment of communities and networks of business, universities, research centres, and civic groups to share the responsibility for addressing urgent threats. Ocean literacy approaches could become a facilitator for this kind of stewardship within a larger ocean sustainability framework, by promoting not only the understanding of ocean knowledge but also the understanding of how to govern marine ecosystems in a sustainable manner.

ENGAGEMENT WITH KEY PARTNERS & STAKEHOLDERS

25. In accordance with its Statutes, the 'Commission will collaborate with international organizations concerned with the work of the Commission, and especially with those organizations of the United Nations system which are willing and prepared to contribute to the purpose and functions of the Commission and/or to seek advice and cooperation in the field of ocean and coastal area scientific research, related services and capacity-building'.[2]

[2] Article 2.2 of the IOC Statutes

IOC WITHIN THE UN SYSTEM

26. IOC enjoys collaboration with many UN agencies and has on-going collaboration at the programmatic level and/or via co-sponsorship of joint programmes. Examples include IAEA, IMO, ISA, ITU, UNCLOS, UNDP, UNESCAP, UNEP, and WMO. Global and regional intergovernmental agreements and conventions require contributions from international bodies such as IOC or call for national cooperation and reporting among and via IOC Member States.

27. IOC contributes to a number of established and recent UN global agreements including the UN 2030 Agenda and its Sustainable Development Goals (SDGs), and in particular of the stand-alone Goal 14 on the ocean; the recognition of the role of the ocean in the UNFCCC Paris Climate Agreement; the endorsement of the Sendai Framework for Disaster Risk Reduction and the Samoa Pathway.

28. In addition to the collaboration within the UN system, IOC also enjoys strong collaboration with a large number of non-UN global and regional organizations such as IHO, ICES, PICES, ISC, and IUCN.

29. UN Oceans is the interagency collaboration mechanism on ocean and coastal issues within the UN system. Through UN-Oceans, the Commission will work in cooperation with other UN agencies in the development of "SDG enabling activities". In the context of the UN Decade of Ocean Science for Sustainable Development, IOC will foster the development of joint activities in support of the 2030 Agenda, SIDS Action Plan, Sendai Framework, UNFCCC COP processes, and other relevant mechanisms, to maximize the comparative advantage of UNESCO's comprehensive interdisciplinary approach to key societal issues.

30. New forms of cooperation and, potentially, stronger formal links of IOC with such organizations will be explored based on the understanding that ocean science represents a crosscutting underpinning force for fulfilling mandates of such UN agencies. Such cooperative agreements will be especially promising for successful implementation of the Decade. The enhanced role of ocean science in assisting Member States in achieving the goals of sustainable development, implementing international agreements and addressing national priorities, may warrant a reinforced coordination between UN agencies and a review of the IOC role and position in the UN System.[3]

EXPANDING PARTNERSHIPS & RESOURCE MOBILIZATION

31. The UN Decade of Ocean Science for Sustainable Development presents an unprecedented opportunity for expanding IOC's partnership base and boost fund-raising. At the same time, it is essential that there is sufficient sustainable resources for the core IOC programmes and regional subsidiary bodies that form the solid base of the Commission's comparative advantage.

32. The relevance and effectiveness of the IOC's programmes is strongly related to the level of extrabudgetary funding, especially in periods of financial constraints. Existing resource mobilization approaches for Members States, institutional and private sector partners, tightly linked to the priorities approved by IOC governing bodies and its capacities to deliver, will be intensified, as will be public-private partnerships and efforts in providing information, outreach and increasing visibility of IOC.

[3] Article 11.3 of the IOC Statutes.

WORKING CLOSER TO THE FIELD

33. The United Nations is reforming itself to provide a better response to the needs of its Member States, with a strong emphasis on its regional dimension. Ocean is of high environmental, social and economic importance to the livelihoods of people and prosperities of countries. IOC intends to improve the delivery of its mandates on the ground mainly through its regional subsidiary bodies, in support of Member States' national development goals and internationally agreed development goals.

34. The IOC regional subsidiary bodies of IOC (WESTPAC, IOCARIBE, IOCAFRICA, and IOCINDIO) have a dual role to fulfil. They are instrumental in carrying out IOC global programmes and priorities in the regions, whilst they develop, execute and coordinate projects and activities, and foster regional partnerships, in response to the needs identified by their respective Member States. Given the needs for capacity development varying from one region to another, regional subsidiary bodies take an adaptive approach to capacity development for their respective regions while taking into account all activities and actions contained in IOC's strategy. These regional mechanisms are of paramount importance for the IOC value delivery chain, ensuring solid ownership of programmes by Member States.

35. WESTPAC, the IOC Sub-Commission for the Western Pacific, intends to introduce Big Data approaches in marine science, advance monitoring, modelling and predictive capabilities, enhance scientific inputs for informed decisions, and develop a knowledge-action network in order to advance the global understanding of the ocean processes and climate, balance economic and ecological benefits, and safeguard ocean ecosystem and human health in the Western Pacific and its adjacent waters.

36. IOCAFRICA, the IOC Sub-Commission for Africa and the Adjacent Island States, will focus on ocean observations and monitoring, ocean sciences and assessments, data and information management and capacity development for marine science and technology. In particular, IOCAFRICA will address ocean modelling and forecasting, disaster preparedness and mitigation, impacts of climate change and variability on the coastal zones including coastal erosion, establish marine spatial planning, ocean literacy and the translation of ocean science to policy in order to provide governments and societies with the information required for sustainable development of the oceans and coastal areas.

37. IOCARIBE, the IOC Sub-Commission for the Caribbean and Adjacent Regions, will focus on assisting Member States in achieving sustainable use of the ocean and coastal resources, foster the generation of knowledge, sharing of information, expertise and experiences to facilitate the scientific community in reducing scientific uncertainties, including those due to climate change, effectively encourage the adoption of pertinent measures for reducing human and material losses associated with the increased frequency of extreme ocean and meteorological hazards. The Sub-commission will also assist Member States to develop their capacity to formulate national and regional policies and plans to meet their needs in ocean science and technology, and reinforce and broaden scientific cooperation, regionally and internationally through networking and institutional arrangements with organizations of the UN system, IGOs, NGOs and the scientific community. IOCARIBE recognises the importance of communication with stakeholders and particularly young scientists and decision-makers and intends to include in its capacity development plan ocean sciences communication and media training.

38. IOCINDIO, the IOC Regional Committee for the Central Indian Ocean, will consolidate its reactivation in order to assist its Member States to reinforce their national and regional networks of Ocean observations and monitoring, modelling and forecasting capabilities. The Committee will foster active networking of marine academic and research institutes of its Member States, notably the UNESCO Category II Centres in oceanography, the Indian Ocean Tsunami Information Centre, which will help to establish national regional mapping of critical ecological

systems and coastal vulnerability due to sea-level rise, storm surges and climate change. IOCINDIO will reinforce cooperation with regional institutions in Indian Ocean such as the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA), the Regional Organization for the Protection of the Marine Environment (ROPME) and relevant NGOs.

COMMUNICATION AND VISIBILITY

39. 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. However, the up-stream role of IOC in the information delivery process is sometimes difficult to explain to main stakeholders and funders, and even more to the public.

40. To this end, 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 also engage with Member States and international economic institutions to seek their support in highlighting to the relevant stakeholders the importance of the ocean activities for national economy and growth.