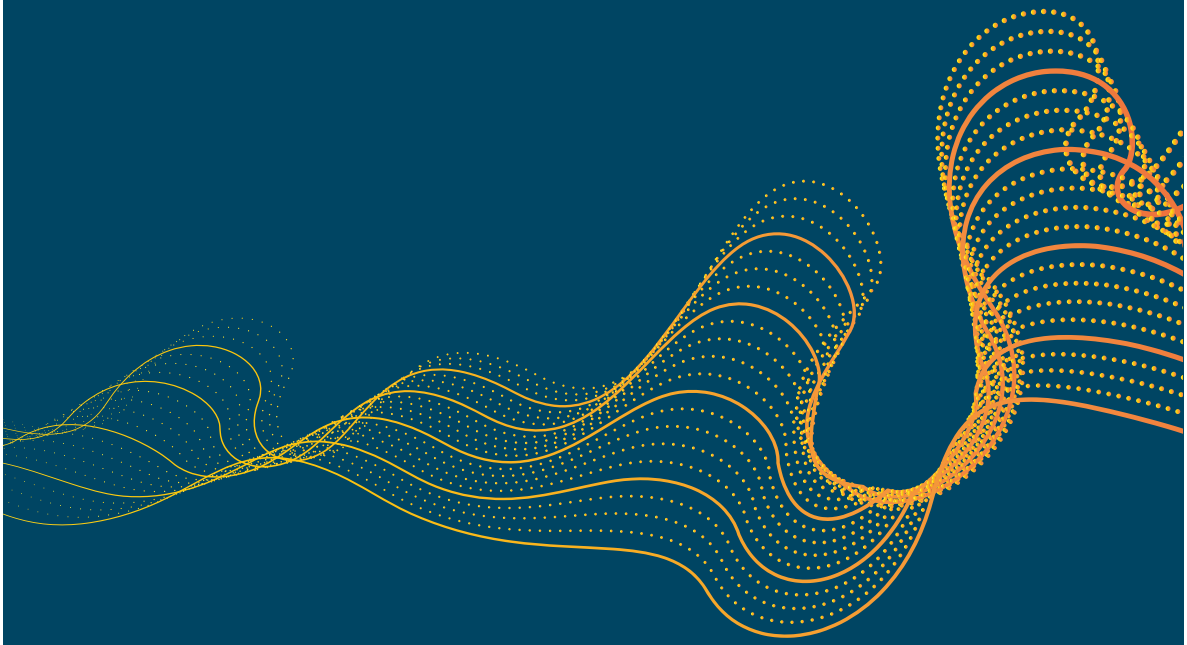
Intergovernmental Oceanographic Commission of UNESCO



Medium-Term Strategy

2022–2029

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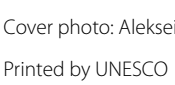

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Intergovernmental Oceanographic Commission of UNESCO

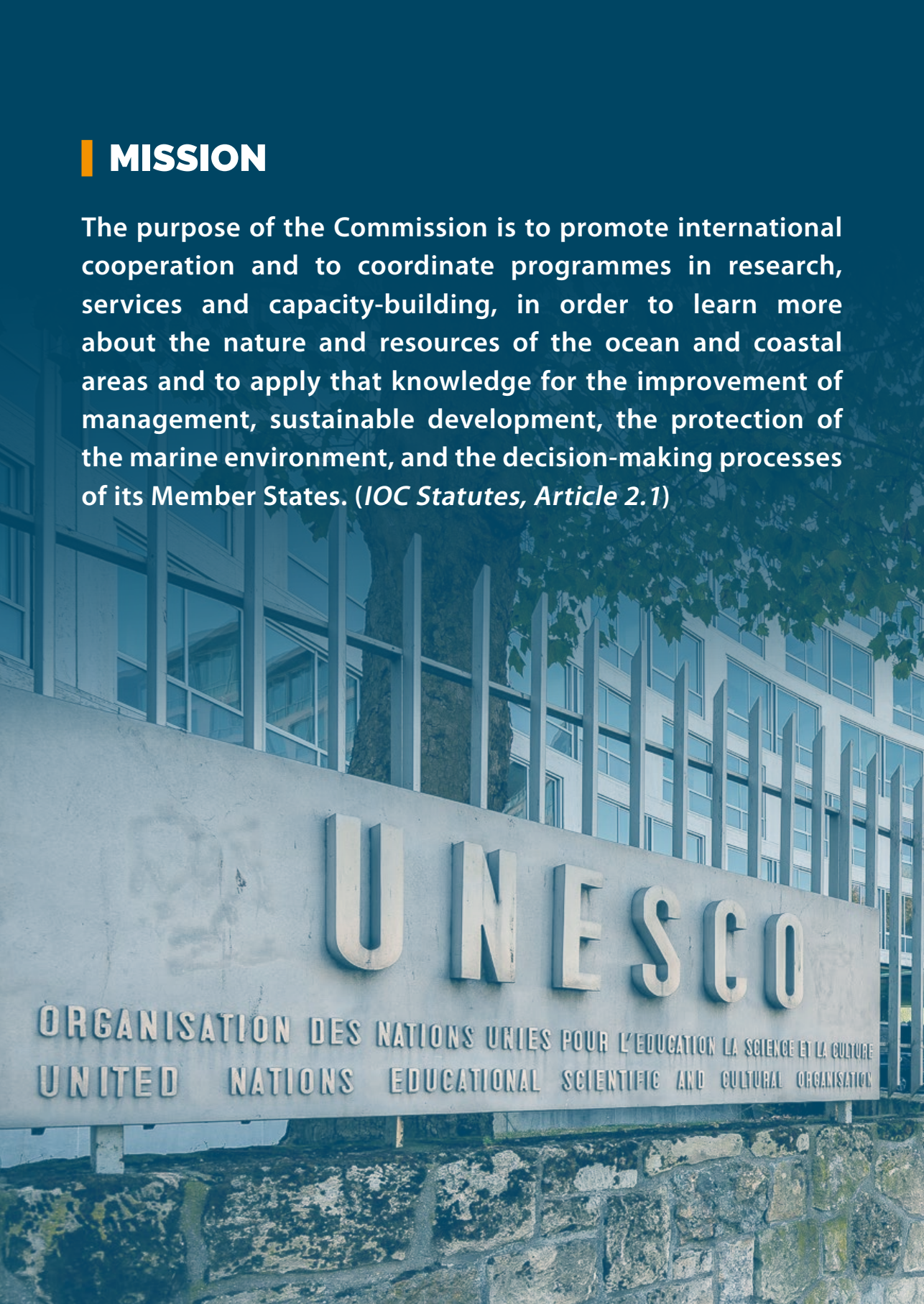
Medium-Term Strategy

2022–2029

Adopted by Resolution A-31/2 of the IOC Assembly at its 31st Session (Online, 14–25 June-2021).

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. (*IOC Statutes, Article 2.1*)



CONTENTS

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VISION STATEMENT

To bring together governments and the science community in achieving the 'Ocean We Need for the Future We Want.'

PREFACE

The ocean is the largest ecosystem on the planet Earth. It is also the key feature of how our planet looks from the Space. Humans have to find harmony in living with the ocean. To continue benefitting from the ocean life-supporting function, an equilibrium must be sought between the continuously increasing use of ocean space and resources and restoring and maintaining the ocean's health, which is currently in rapid decline. This understanding is captured in the formulation of the Sustainable Development Goal 14 of the 2030 Agenda: *Conserve and sustainably use the oceans, seas and marine resources for sustainable development*.

The role of the ocean for climate, disaster risk reduction, future of island States is reflected in the Paris Agreement of UNFCCC, the Convention on Biological Diversity, the UN Sendai Framework for Disaster Risk Reduction, and the SIDS Accelerated Modalities of Action (SAMOA Pathway) and a number of regional, sub-regional and national action frameworks or development strategies. In the complex world we live in, with continuing and accelerating climate change, the success of all these frameworks depends on capacity of science to deliver needed solutions and on the ability and will of stakeholders to effectively use these solutions.

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, to develop efficient, science-based integrated ocean and coastal management and corresponding solutions., taking in consideration relevant indigenous, local and traditional knowledge. Never in the history of our civilization has such cooperation been so urgently required.

There is a need to mainstream ocean science for managing the ocean, 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 (UNCLOS) means that legally-binding obligations of nations are becoming increasingly ocean science-dependent. Successful execution of the IOC programme during the period of Medium-Term Strategy 2014–2021 and the IOC-led planning and coordination of the UN Decade of Ocean Science for Sustainable Development (2021–2030) brought IOC to the leading position in the work on systematic provision of ocean-related solutions to the global challenges of our time. However, the ability of IOC to deliver on its expanding 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, more authoritative decision-making capacity of IOC governing bodies, and adequate and reliable co-design of and investment in the whole value chain of modern ocean science.

Ariel Hernán Troisi
Chairperson

Vladimir Ryabinin
Executive Secretary

The role of IOC will only continue to increase in the future, because maintaining vital life-support functions of the ocean is becoming more and more science-intensive.

Gold Coast City, Queensland, Australia
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IOC HIGH-LEVEL OBJECTIVES AND PRIORITIES

Through international cooperation, IOC aspires to build and apply scientific knowledge to 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 and sustained ocean ecosystem services;
2. Effective warning systems and preparedness for tsunamis and other ocean-related hazards;
3. Resilience to climate change and contribution to its mitigation;
4. Scientifically-founded services for the sustainable ocean economy; and
5. Foresight on emerging ocean science issues.

Objective 1 Healthy ocean and sustained ocean ecosystem services

Improving scientific understanding of ocean ecosystems, identifying robust indicators of their health, and understanding ecosystem vulnerability, e.g., to multi-stressors, are vital for monitoring and predicting the ecosystem health and resilience and developing ecosystem-based management, underpinning sustainable ocean economy and improved ocean governance. Current ecosystem research and management require stronger coordination and cooperation between key stakeholders.

Objective 2 Effective warning systems and preparedness for tsunamis and other ocean-related hazards

With accelerating coastal development and changing environment, society becomes increasingly vulnerable to coastal hazards such as harmful algal blooms, coastal flooding, tsunamis and tropical cyclones. Nations should be aware of the hazards and have access to the necessary information for coastal planning, hazard mitigation, adaptation to climate change, and for safe operations at sea. This calls for continued implementation of ocean and coastal observing systems, improvements in the ocean, meteorological and climate models, and the development of a suite of local decision-support tools, including early warning systems.

Objective 3 Resilience to climate change and contribution to its mitigation

Climate change and variability encompass temperature changes, altered patterns and intensities of tropical cyclones, storms, rainfall and droughts, sea-level rise, etc. Carbon emissions lead also to ocean acidification. Combined effects manifest themselves in ocean deoxygenation, coastal erosion, etc. Many human development goals, such as food security and health, access to water resources, and preparedness for disasters, are threatened by climate change. Ocean is a key regulator of climate. Coordinated global and regional efforts, including through the assistance of the WMO-IOC Joint Collaborative Board, are needed therefore to comprehensively include the ocean dimension in our improved capacity to understand and predict climate change, its impacts on the ocean, guiding the development and accelerated implementation of effective adaptation and mitigation strategies.

Objective 4 Scientifically-founded services for the sustainable ocean economy

Sustainability of ocean economy relates to the long-term capacity of ocean ecosystems to support human activities. Maintaining this equilibrium requires ocean observations, fit-for-purpose data products and services, scientific assessments, and monitoring and forecasting of ocean ecosystem health. Knowledge-based ocean management tools such as marine spatial planning, coastal zone management, marine protected areas, and management of Large Marine Ecosystems (LMEs) can help ocean stakeholders to set environmental and socio-economic objectives, develop operational plans, define safe boundaries and guidelines for operations, as well as reduce conflicts among multiple uses of ocean space.

Objective 5 Foresight on emerging ocean science issues

The ocean remains one of the least studied environmental domains of the Earth System. Oceanographic discoveries are still possible. New issues constantly emerge in the ocean that may potentially affect the health of ocean ecosystems as well as human wellbeing. New stressors, e.g. contaminants or pressures from emerging activities or industries, may combine with known stressors such as ocean acidification, altered patterns of the ocean carbon cycle, de-oxygenation, and climate change, and create complex impact on ecosystems. Cutting-edge research, innovation, technological development, including in observations and in developing a global "data and information ecosystem", should augment our capacity to anticipate such emerging issues, inform policy-making, including in the context of relevant regional and global conventions, and advance timely solutions involving relevant stakeholders.

Global Priority Africa: Africa is an overarching priority for UNESCO, and IOC will ensure that it is mainstreamed into all its programmes and reflected in its performance indicators. The *2050 Africa's* Integrated *Maritime Strategy* (AIMS) specifically recognizes the role of IOC/UNESCO in the promotion of scientific research and capacity development (CD) as well as in transfer

of marine technology (TMT). IOC will provide the science base for the development of the sustainable Ocean 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 AIMS.

Global Priority of Gender Equality: The IOC contribution to Global Priority of Gender Equality will focus on ensuring that international science cooperation for peace and sustainability promotes equal 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 equally enabled. The IOC *Global Ocean Science Report* will continue to monitor progress and assist Member States in achieving parity of men and women in the marine sciences community.

Small Island Developing States (SIDS): The SIDS Accelerated Modalities of Action (SAMOA) Pathway of 2014 has a strong bearing on the ocean and draws increased attention of the international community to extreme weather events, sea-level rise, coastal erosion and ocean acidification. The Pathway calls for heightened support in technology, finance and capacity-development for climate change adaptation, including need to assist in baseline monitoring of island environment. IOC will continue to help building a wide scope of SIDS actions including related to tsunami early warning systems and strengthening resilience of coastal communities through the Tsunami Ready programme, development of marine scientific and technological capacity of SIDS, and enhancing cooperation to manage all aspects of the ocean health including ocean acidification impacts.

Early Career Ocean Professionals: Ocean sustainability and ocean science require human resources that are balanced across generations. IOC will actively engage talents and energy of early career ocean professionals and strive to offer them opportunities for professional development. This will be done through the establishment of networks of early career professionals and their equitable and gender-balanced engagement in ocean affairs.

Increased understanding of the value of IOC work including its socio-economic benefits: The work of IOC concerns all aspects of human relations with the ocean: the economy, policy and politics, and social, cultural, spiritual, and emotional connections. It will continue to result in multiple tangible and intangible benefits to society. Above all, the work of IOC will continue to directly save lives, e.g., through tsunami warnings. International cooperation in ocean sciences and services is a significant factor of supporting multilateralism and maintaining peace in the world. IOC will also contribute to informing international political decisions that shape the future of our civilization, e.g., through the climate change debate. Knowledge of the marine environment enables the ocean economy, which annually generates monetary value measured in trillions of US dollars. It will be advantageous therefore to link the benefits of IOC work to national economy accounts. Through ocean-climate risk assessments,

it will be possible to demonstrate the value of investments in nature-based climate adaptation solutions and mainstream the ocean considerations in sustainable economic development plans. This will lead to new business opportunities and perspectives of increased prosperity and safety of people. To understand and demonstrate the full value of the IOC work, assessments of tangible value of ocean ecosystems and their delivered goods and services, can be sustainably utilized. The role of IOC will only continue to increase in the future, because maintaining vital life-support functions of the ocean is becoming more and more science-intensive. Thus, to realise the full current and future potential of IOC and maximize benefits stemming from IOC activities in a large number of socio-economic domains, IOC will have to further strengthen its collaboration and partnerships within the UN system and beyond it, with many stakeholders and partners.

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

The UN Decade of Ocean Science for Sustainable Development (the "Decade") will run from 2021 to 2030. The aim of this unique long-term high-level campaign is to bring ocean science to the new level or readiness to deliver that is required to inform decisions and to catalyse efficient actions and policies for sustainable use and protection of the ocean.

The Decade offers an exceptional opportunity to highlight the societal benefits of IOC and its programmes. 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 and General Assembly.

The Decade will be guided by a vision of "the Ocean we need for the future we want", namely:

- **a clean ocean** where sources of pollution are identified, reduced or removed;
- **a healthy** and **resilient** ocean where marine ecosystems are understood and managed;
- **a productive ocean** supporting sustainable food supply and a sustainable ocean economy;
- **a predicted ocean** where society understands and can respond to changing ocean conditions;
- **a safe ocean** where life and livelihoods are protected from ocean-related hazards;

- **an accessible ocean** with open and equitable access to data, information and technology, and innovation; and

- **an inspiring** and **engaging ocean** where society understands and values the ocean in relation to human wellbeing and sustainable development.

The main transformation to be achieved in the course of the Decade is to make the science able to deliver not only diagnostics of existing or emerging problems but to offer effective solutions and to motivate the society and elevate its readiness to implement them. The Decade will aim therefore to build science capacity, mobilize scientists, facilitate an enabling environment for engagement of practitioners, decision-makers and the private sector in the development and use of science-based solutions to start managing the ocean sustainably.

The Decade will also provide a powerful stimulus for IOC to contribute to implementing collectively-agreed global and regional priorities. Successful realization of the Decade will rely on true ownership by many partners and stakeholders who will use the Decade framework and the opportunities it generates to deliver on their own mandates in sustainable development.

Jambiani, Zanzibar, Tanzania
Marius Dobilas/Shutterstock.com

> *...observations and research enable various services and assessments, leading to informed decisions and guidance to policy and culminating in multiple societal and economic uses.*

IMPLEMENTING THE STRATEGY

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, human, and technical capacities for sound management and governance of the ocean and human activities.

This strategy is organized as a framework of six *functions*, distinct types of relatively uniform sets of processes, actions or tasks, that help the Commission to fulfil its purpose and achieve its High-Level Objectives. The 'IOC Functions' are to:

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, prediction and informationsystems *[Observingsystem / data management]*;

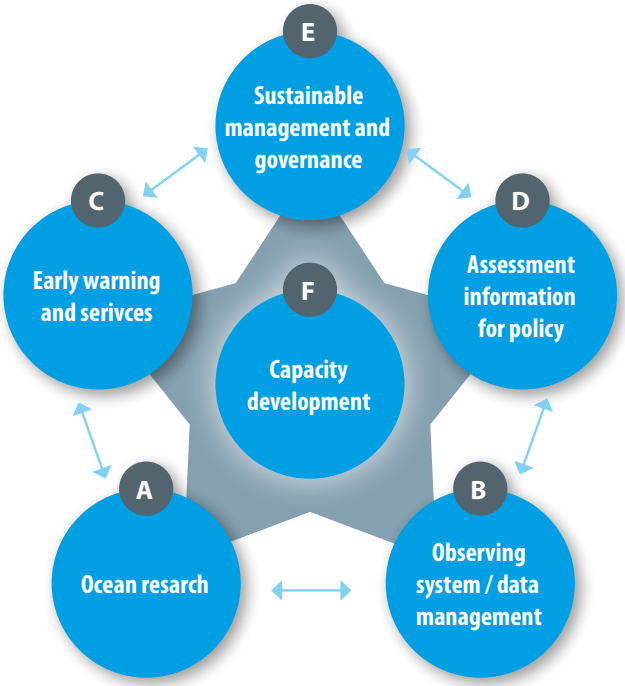
C Develop early warning systems, services, and preparedness for risks of tsunamis and ocean-related hazards *[Early warning and services]*;

D Support assessment and provision of information through 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]*; and

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

These functions are realized through existing IOC and co-sponsored programmes, work of IOC regional subsidiary bodies and various mechanisms of cooperation.



The value chain of IOC: IOC generates value through interaction of all its functions. In order to maximize the value, the IOC should work as an end-to-end system, in which observations and research enable various services and assessments, leading to informed decisions and guidance to policy and culminating in multiple societal and economic uses. Feedback from various functions in the system should lead to evolving and, generally, increasingly more and more demanding requirements for observations, science and services. The capacity development will act as the catalyst of the whole system, working both at the cutting edge and leaving no one behind.

The IOC functions will be realised through the continuously developing programmes, acting globally, regionally, nationally and locally, through activities of regional subsidiary bodies, and by undertaking shorter-term project activities. In reality, all the programmes, constituencies and projects act as co-design and coordination mechanisms, while the true groundwork is done in and by Member States. The Decade will provide an opportunity to mainstream IOC programmes and activities internationally and within Member States. The work will be directed towards achieving IOC High-Level Objectives, as described below.

Achieving Objective 1 (Healthy Ocean Ecosystems): The IOC will strengthen sustainable management of ecosystem health and services through coordinated actions in research, observations, assessments, design and implementation of management tools and CD, with specific activities to:

- coordinate and catalyse research on ocean acidification, de-oxygenation, biogeochemistry, and contaminants; identifying ecosystem indicators and tipping points and the impacts of multiple stressors on marine biodiversity and ecosystem functioning;

- improve and augment sustained global observations of essential biological, biogeochemical, and ecosystem variables of relevance and necessity to describing the ecosystem state, as part of GOOS;

- strengthen the IODE data and information centres and networks including OBIS, ensuring resources and best practices are available to advance standardized collection of species and ecosystem data and development of data products and services contributing to the continuous monitoring of identified indicators of ecosystem state, as well as the long-term preservation and availability of high-quality ocean data and information;

- support global and regional marine assessments through the United Nations World Ocean Assessment and other scientific assessments, e.g., of Large Marine Ecosystems and those under IPBES;

- assist Member States in developing the necessary capacity and ecosystem-based management tools, such as maritime spatial plans, coastal area management; marine protected areas, and

- use the IOC convening authority for strengthening cooperation and coordination between key stakeholders in the domain of ecosystem management and for building an effective science-policy-society interface.

- Contribute to the UN Decade of Ecosystem Restoration (2021-2030)

Achieving Objective 2 (Early Warning for Ocean Hazards): The IOC will help coastal communities and operators at sea to manage risks from ocean-related hazards and to increase preparedness for them. IOC will work with Member States and UN partners to increase the understanding of ocean-related risks and to implement effective multi-hazard early warning systems. IOC will:

- support closer intergovernmental coordination of multi-level regional tsunami warning systems;

- promote the involvement of key stakeholders in the tsunami warning systems, including civil defence authorities and national hydrometeorological services;

- accelerate implementation of the Tsunami Ready programme;

- promote research and development of more technically developed tsunami detection and warning systems capable of addressing non-seismic sources of tsunami;

- strengthen the regional Tsunami Information Centres and augment their ability to provide a clearinghouse for the development of educational and preparedness materials;

- coordinate research, monitoring, and development of management tools for Harmful Algal Blooms;

- increase technical and scientific capacity of early detection and warning of marine invasive species (e.g., by applying novel observing technologies such as DNA metabarcoding);

- target CD and technical assistance to enhance Member States' abilities to develop preparedness, mitigation and awareness in a multi-hazard framework;

- ensure that the ocean observing system responds to requirements for ocean data, exchanged in real time, for operational early warning of ocean-related hazards; and

- support modelling, research, data processing tools, policy development and planning tools contributing to improved warning systems, preparedness for ocean hazards, and ocean information services.

Achieving Objective 3 (Resilience to Climate Change and Variability): The IOC will work towards increased resilience to climate change and variability through an end-to-end approach that:

- begins with an ocean observing system to monitor global to regional scale drivers of climate and its change and variability; measure essential variables of the ocean, e.g., ocean physics and climate, biogeochemistry, biology and ecosystems; quantify climate impacts on the ocean manifesting, for example, through ocean warming, including ocean heatwaves; characterize ocean acidification and deoxygenation; describe climate's influence on marine and coastal ecosystems, including biodiversity loss; and contribute to an advanced data management enterprise built on global standards and best practices;

- coordinates and guides ocean climate research, including through WCRP, that improves the understanding of ocean processes and climate change, ocean carbon cycle, skill of predictions of climate variability and change, and builds a knowledge base of ocean ecosystem changes and adaptation strategies;

- informs IOC-affiliated and other assessment processes;

- also informs the UNFCCC process on the full range of ocean-related aspects of climate;

- contributes to the development of next-generation ocean and climate services, including the Global Framework for Climate Services coordinated by the WMO;

- applies the scientific knowledge to inform and strengthen ocean governance, coastal management, development and implementation of climate adaptation and mitigation strategies; and

- builds capacity through training, demonstration projects, and shared tools.

Achieving Objective 4 (Scientific Services for a Sustainable Ocean Economy): The IOC will develop scientific and technical information, services, and management tools for the responsible growth of a sustainable ocean economy. By 2030, the ocean economy, buoyed *inter alia* by growth in ocean renewable energy, aquaculture, and tourism is predicted to be a much more significant component of national economies. Open access to information and a sound ocean knowledge base will promote economic opportunities and job growth while also protecting the marine environment and ensuring sustainable use of ocean resources. The IOC will deepen its engagement and partnership with the maritime sector by:

- delivering ocean observations and data for operational services to marine industries and for biogeochemical and biological study/research and assessments of the sustainability of ecosystem services;

- delivering fit-for-purpose data and information products and services through the Ocean Data and Information System and Ocean InfoHub including their regional nodes;

- coordinating scientific assessments required to define ecosystem thresholds for safe operations and to identify sustainable pathways;

- facilitating the development of ecosystem-based approaches to environmental protection and transboundary management approaches such as Large Marine Ecosystems;

- promoting coastal zone management and marine spatial planning globally as effective processes to facilitate sustainable economic activities and resolve conflicts among competing users of ocean space;

- promoting the economic value of the IOC end-to-end chain of activities, with an evaluation of return on investment into ocean research and observations; and

- assisting Member States in developing their capacity to responsibly manage and sustainably exploit ocean resources.

Achieving Objective 5 (Foresight of Emerging Ocean Issues): In order to identify, and, if possible, anticipate emerging issues, IOC will coordinate scientific research at the cutting edge of science and act as a platform to call out such issues in a policy-relevant manner. Strengthened and expanded ocean observation and associated global data/information management systems will support research on emerging issues and further develop the capacity to address knowledge gaps. With partners, IOC will foster necessary international collaboration to support research on emerging ocean environmental issues, including:

- coordinated scientific research on the marine ecosystem impacts by new contaminants and multiple new stressors resulting from changing climate and anthropogenic influence;

- an ocean observing system, with technologically advanced autonomous instruments and global data/information processing and management systems that are adaptable to new needs;

- scientific syntheses and assessments that provide actionable information about new threats or opportunities; and

- communication of results to decision-makers and providing a platform for Member States to bring emerging national and regional issues for the attention of UN and other intergovernmental fora.

CAPACITY DEVELOPMENT

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

The IOC efforts in Capacity Development (CD) will continue to be guided by the IOC Capacity Development Strategy. These efforts will be further strengthened in the course of implementation of the Decade. The *Global Ocean Science Report 2020* will serve as a key benchmark for the IOC's work, and further editions of the Report will allow monitoring progress. The IOC will continue to systematically enhance the capacity of all IOC Member States to conduct scientific research and benefit from its results, leaving no one behind. This

pillar of the IOC CD work will include the operationalization of the IOC Criteria and Guidelines on the Transfer of Marine Technology (TMT) and the TMT Clearing House Mechanism.

Specifically, IOC will establish a network of regional and thematic TMT nodes and enhance sharing scientific and technical capacities between Member States helping them render a wider range of data and information products and services. The IODE Ocean InfoHub project will be the starting point for building the IOC future Ocean Data and Information System delivering interoperable local, regional and thematic data and information and connecting contributors and users with required resources. These developments will be implemented taking into account the IOC Strategic Plan for data and information management and in compliance with the IOC oceanographic data exchange policy. Regular surveys of CD needs will be conducted, and a united online database of training opportunities will be created to capitalise on bilateral and multilateral relationships including contributions by intergovernmental organizations.

The work of the IOC Group of Experts 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, while simultaneously working towards achieving Target 14.a of the 2030 Agenda[1]. International multilingual training on diverse aspects of ocean management will continue through the new generation of the IOC OceanTeacher Global Academy with its network of regional and specialized Training Centres, Regional Training and Research Centres of WESTPAC and UNESCO Category 2 Centres in marine sciences.

IOC will continue to expand its activities in the area of ocean literacy by implementing a dedicated strategy. This work will enhance appreciation for the ocean by key stakeholders, including general public. It will deepen the understanding of the role of the ocean for people and the human impact on the ocean, and the value of science to ensure human impacts are understood and addressed as necessary to ensure sustainable use of the ocean for all. Working within UNESCO and partners, IOC will strive to include basic knowledge of the ocean into school curricula.

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

[IOC Regional Subsidiary Bodies] are the most efficient platforms for co-designing and co-delivering IOC capacity development activities with Member States, leaving no one behind.

Weddell Sea, Antarctica
I. Noyan Yilmaz/Shutterstock.com

WORKING CLOSER TO THE GROUND

To achieve the ambitions of the 2030 Agenda and better respond to the needs of its Member States, the United Nations is reforming itself, strengthening the emphasis on regional dimension and coordinated work of all UN agencies through the UN Regional Collaborative Platforms and Country Teams. The IOC will also step up its assistance and delivery of services at the level of Member States.

To embrace the needed global scope of activities, IOC will work through Member States, and seek partnerships and synergies with ocean-related organizations including those with a regional focus. IOC will also aim to build visibly on the activities of its Member States, acknowledging their significant capacities, often already deployed in many of the global and regional IOC programmes. IOC will liaise with relevant national, regional and large-scale international initiatives of those Member States with a view to involve them in the execution of its various functions and ensure that they contribute to and take advantage of the UN Decade of Ocean Science for Sustainable Development.

The regional and local development is most efficiently achieved through the work of IOC regional subsidiary bodies and focussing both on Member States' particular development goals and on internationally-agreed development priorities. The four IOC regional subsidiary bodies (WESTPAC, IOCARIBE, IOCAFRICA, and IOCINDIO) are of paramount importance to the IOC mission, adding value and ensuring solid ownership of programmes by Member States. The IOC regional subsidiary bodies adapt their approach and agenda based on the specific needs and opportunities existing in their respective regions. In addition to carrying out IOC global programmes in the regions, they foster partnerships to execute and coordinate regional programmes, projects and activities. Amongst their other activities, they are the most efficient platforms for co-designing and co-delivering IOC capacity development activities with Member States, leaving no one behind.

People and Member States of the IOC Sub-Commission for the Western Pacific (WESTPAC), a highly populous and rapidly technologically advancing region, in which the ocean is characterized by the richest marine biodiversity, need solutions to balance the development with ocean sustainability. WESTPAC aims to further strengthen the science-policy interface, foster multi-disciplinary solution-oriented ocean research and innovations, enhance ocean forecasting services and applications, and build and mobilize long-term partnerships. The Sub-Commission will continue to co-develop its programme priorities among Member States and carry out a broad range of activities underpinning ocean sustainability across, but not

limited to, ocean and climate change, marine biodiversity, seafood safety and security, health of ocean ecosystems and other emerging issues. To accelerate the CD and transfer of marine technology, the Sub-Commission will keep empowering individuals, institutions and Member States, notably through integrated and sustainable CD structures such as the WESTPAC Regional Network of Training and Research Centres on Marine Science (RTRCs), inclusion of CD into its international research programmes, development and conduct of tailored national and international training, engagement of early-career ocean professionals into international research programmes and encouragement of their research work. WESTPAC will assist the IOC to coordinate regional engagement in the Decade.

The IOC's Sub-Commission for Africa and the Adjacent Island States (IOCAFRICA) will focus its work and energy on providing the ocean science base for solving societal challenges and contributing to development of the sustainable ocean economy in the region. CD will continue to be a priority, in particular the improvement of infrastructure and facilities for research, provision of training for scientific and technical staff, as well as translation of science to policy. In line with the Implementation Plan for the Decade, IOCAFRICA will develop and implement programmes in ocean monitoring and forecasting, coastal vulnerability and disaster risk reduction, climate change impacts on coastal zones, marine spatial planning, marine biodiversity and biogeography, ocean literacy and the translation of research results to policy required for sustainable management of the ocean and coastal areas. IOCAFRICA will strive to develop "home grown solutions" through the involvement of African innovators and support for locally developed technology. In this regard, IOCAFRICA will in particular engage African youth and early career professionals. The programmes of IOCAFRICA will be aligned with the initiatives of the African Union such as its Agenda 2063, which recognizes the ocean economy as a major contributor to continental transformation and growth, and the 2050 African Integrated Marine Strategy, which provides a road for increased wealth creation from Africa's oceans and seas by developing a sustainably thriving ocean economy.

The IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) will continue to be a strong regional contributor to the work of all IOC programmes and will align its activities with the strategic framework of the Decade. The main objective will be to assist the continental coastal Latin-American and the Caribbean SIDS Member States to achieve sustainable use of the ocean and coastal resources. In doing so, IOCARIBE will capitalize on the advantages of its region, which is rich in biodiversity and resources and is a key world's tourism destination. Ocean science will be central for addressing major regional challenges of IOCARIBE, where manifestations of climate change, such as hurricanes, severe storms, coastal inundation, coastal erosion, and Sargasso beaching, occur on the background of generally low resilience of island countries. The main avenue will be strengthening Member States' capacity of managing the ocean, in national and transboundary context, through an ecosystem-based

management approach, continuing to implement the CLME Strategic Action Programme and supporting the creation of a Coordination Mechanism and sustainable financing plan for ocean governance. The Sub-commission will also assist Member States in formulating national and regional policies and plans to develop ocean science and technology. IOCARIBE will reinforce and broaden scientific cooperation, regionally and internationally, through regional networking and institutional arrangements between organizations of the UN system, IGOs, NGOs, and the scientific community. Recognizing Member States asymmetry in CD and technology, IOCARIBE will undertake projects to enhance transfer of marine technology.

The IOC Regional Committee for the Central Indian Ocean (IOCINDIO) will unite governments of the region and communities of global and regional scientists towards sustainable management of Indian Ocean space and resources. It will capitalize on the activities of existing and active IOC-affiliated programmes and structures in the region, including but not limited to the Second International Indian Ocean Expedition (IIOE-2), regional components of GOOS, and the work of communities engaged in sustainable management of marine ecosystems of Indian Ocean. Such alliance should be able to address regional specifics, such as dominance of monsoons, the Indian Ocean dipole, Madden-Julian oscillations, strong upwellings, etc. Advantages of maritime spatial planning and coastal zone management will be promoted to address coastal development and mitigate coastal vulnerability in a focused manner, considering impacts of the global change on the ocean. IOCINDIO will be coordinating its programme and cooperating with IOCAFRICA and WESTPAC and will also reinforce cooperation with regional institutions in Indian Ocean. The region will continue to build the capacity of its Member States, with the help of IOC global facilities, such as centres of OceanTeacher Global Academy and the two active UNESCO Category 2 Centres. Successful strengthening and expansion of activities of IOCINDIO will aim to reach the level of activity, positive influence, and role in the ocean governance commensurate with the ones of an IOC Sub-Commission, leading to its transformation into a Sub-Commission.

Bensersiel, Germany
Juergen Wackenhut/Shutterstock.com

> *The enhanced role of ocean science in assisting Member States to achieve the goals of sustainable development, to implement international agreements and to address national priorities may warrant a reinforced coordination between UN agencies and a review of the IOC role and position in the UN system.*

ENGAGEMENT WITH KEY PARTNERS & STAKEHOLDERS

The IOC has been established as a body with functional autonomy within UNESCO. The Commission defines and implements its programme according to its stated purposes and functions, with the budget framework adopted by its Assembly and the budget envelope agreed by the General Conference of UNESCO. 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]

IOC WITHIN UNESCO, UN SYSTEM, AND BEYOND

Within UNESCO, IOC will continue to cooperate with many UNESCO programmes and field offices, and maximize the comparative advantage of UNESCO's multidisciplinary approach to key societal issues. IOC will work with several UNESCO programmes towards their strong contribution to the UN Decade of Ocean Science for Sustainable Development. This concerns the marine programme of the World Heritage Centre, the Education Sector's leading role in SDG-4 on Education for Sustainable Development, the Convention on the Protection of the Underwater Cultural Heritage, and the Science Sector's priority areas in SIDS and Indigenous Knowledge, the Man and Biosphere Programme, the Intergovernmental Hydrological Programme, and programmes in Disaster Preparedness and Risk Management. IOC will continue to act as part of the Task Force on Climate Change, a consultative forum of more than 30 programmes in the sciences, education, culture and communication spheres.

IOC enjoys a recognized role in the UN system, in accordance with its Statutes. As a competent international organization in the fields of Marine Scientific Research and TMT, IOC contributes to various UNCLOS processes, including the emerging international legally binding instrument on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. The IOC will continue collaboration at the programmatic level and/or via co-sponsorship of joint programmes with many UN agencies including FAO, IAEA, IMO, ISA, ITU, UNDP, ESCAP, UNEP (including CBD), WHO and WMO.

The IOC will continue to contribute to major UN global agreements and frameworks including: the UN 2030 Agenda and its Sustainable Development Goals (SDGs), in particular of the stand-

2 Article 2.2 of the IOC Statutes

alone Goal 14 on the ocean, also acting as a custodian UN agency for reporting on SDG Targets 14.3 and 14.a; the UNFCCC Paris Agreement by advocating for the increasing role of the ocean; the Sendai Framework for Disaster Risk Reduction, the Convention on Biological Diversity and the Samoa Pathway.

The IOC will continue to contribute, as the UN's core body for ocean science, to the UN-Oceans, a UN interagency collaboration mechanism on ocean and coastal issues, focussing, *inter alia*, on the development of "SDG enabling activities".

New forms of cooperation and, potentially, stronger formal links of IOC with other UN organizations will be explored based on the understanding that ocean science represents a cross-cutting, underpinning necessity for fulfilling mandates of 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 to achieve the goals of sustainable development, to implement international agreements and to address national priorities may warrant a reinforced coordination between UN agencies and a review of the IOC role and position in the UN system.

In addition to fulfilling its role in the UN system, IOC also enjoys strong collaboration with a large number of non-UN global and regional, intergovernmental and non-governmental organizations, such as GBIF, GEO, IHO, ICES, PICES, ISC and its SCOR, and IUCN. Through its global programmes and regional subsidiary bodies, IOC will also foster partnership with regional ocean management organizations such as the UNEP Regional Seas Conventions, Regional Fisheries Organizations, and LME Commissions.

EXPANDING PARTNERSHIPS & RESOURCE MOBILIZATION

The ability of IOC to implement this Medium-Term Strategy and provide an authoritative platform for science-based sustainable ocean management will require significant human and financial resources deployed in all core IOC programmes and regional subsidiary bodies. The capacity of the IOC's programmes and regions to deliver on priorities approved by IOC governing bodies will necessarily require raising the level of extra-budgetary funding, especially in periods of financial constraints. The IOC will work to develop new public-private partnerships and intensify resource mobilization from Member States, institutional partners, and the private sector. The UN Decade of Ocean Science for Sustainable Development presents an unprecedented opportunity to expand IOC's partnership base and boost fund-raising.

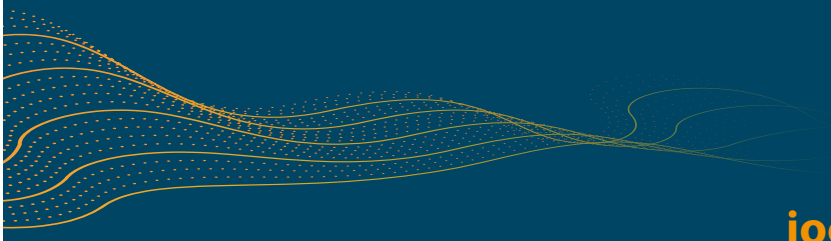
COMMUNICATION AND VISIBILITY

IOC is providing the scientific foundation for using the ocean sustainably and in doing so benefits multiple "end users". The value of fundamental up-stream service of IOC is, however, not apparent to beneficiaries such as decision-makers, funders, and general public. This warrants investment into dedicated, active, and well-targeted communications. IOC will need to implement an efficient and tailored communication strategy enabling it to fully and convincingly demonstrate the positive impact of its work on society and to attract new extra-budgetary support. An efficient and attractive website and active presence on the web will be maintained and further improved.

Intergovernmental Oceanographic Commission (IOC)

United Nations Educational, Scientific and Cultural Organization (UNESCO)

7 Place de Fontenoy,
75352 Paris Cedex 07,
France



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