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COMMISSION OCÉANOGRAPHIQUE INTERGOUVERNEMENTALE
COMISIÓN OCEANOGRÁFICA INTERGUBERNAMENTAL
МЕЖПРАВИТЕЛЬСТВЕННАЯ ОКЕАНОГРАФИЧЕСКАЯ КОМИССИЯ

اللجنة الدولية الحكومية لعلوم المحيطات

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IOC/VR/XY

14 November 2022

To : National Coordinating Bodies for liaison with the IOC (IOC Member States)

cc. : Permanent Delegates/Observer Missions to UNESCO of IOC Member States
National Commissions for UNESCO in IOC Member States
IOC Officers

**Subject: Follow-up to Internal Oversight Service Evaluation
of the Strategic Positioning of IOC**

The IOC Executive Council at its 55th session (UNESCO HQ, Paris, 14–17 June 2022) in its Decision IOC/EC-55/3.2 requested the IOC Executive Secretary to provide an estimate of the budget, including the needs in human resources, necessary to sustainably deliver IOC's core programmes and to expand its activities in response to increasing demands of Member States and other stakeholders (cf [IOC Resolution XXX-3](#)). The attached document provides the requested estimate.

The Decision IOC/EC-55/3.2 also invited the IOC Executive Secretary and the IOC Officers to refine the Draft Action Plan ([IOC/EC-55/3.2.Doc\(1\)](#)) prepared by the Secretariat in response to the Internal Oversight Service Evaluation Report of the Strategic Positioning of the Intergovernmental Oceanographic Commission ([IOS/EVS/PI/197](#)) and to prepare a final version of the Action Plan for consideration and adoption by the IOC Assembly at its 32nd session in June 2023. Because several Member States expressed the wish to provide written inputs to improve the Draft Action Plan in the intersessional period, I would like to take the opportunity of this letter to cordially solicit such inputs by the deadline of 15 January 2023 for review by IOC Officers at their annual meeting end of January 2023.

With assurances of my highest consideration, I remain,

Yours sincerely,

[signed]

Vladimir Ryabinin
Executive Secretary

Enclosure: "Sustainable delivery and expansion of IOC activities: estimate of required budget, including human resource needs (October 2022)"

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**Sustainable delivery and expansion of IOC activities:
estimate of required budget, including human resource needs**

October 2022

(Document distributed by IOC Circular Letter No. 2912)

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Executive Summary

The IOC Executive Council at its 55th Session requested the Executive Secretary to provide an *'estimate of the resource requirements, including the needs in human resources, necessary to sustainably deliver IOC's core programmes and to expand its activities in response to increasing demands of Member States and other stakeholders'*. This Report responds to the Council's request.

The current IOC integrated budget amounts to US\$31.8 million, of which Regular Programme (RP) budget is \$11.2 million, with \$9.4 million allocated for staff (28.5 full-time equivalents on fixed-term positions) and \$1.8 million is available for activities. The extrabudgetary resources (EXB) to be raised, are 65% (\$20.6 million) of IOC's total budget. To date, just \$4.4 million have been secured, leaving a *gap* of \$16.2 million. Nevertheless, with secured and saved EXB, IOC is also able to draw on an additional approximately 30 staff who are engaged on non-fixed-term contracts. This brings the total number of people currently working for IOC to 60, still well below the level needed to implement IOC's mandated work and coordinate the Ocean Decade. Critically, these EXB-funded staff lack the stability of employment terms needed to ensure delivery on a consistent and predictable basis.

Based on an analysis of current and anticipated activities and their expected results across all IOC Functions and the Ocean Decade¹, this note estimates a required **IOC integrated budget of \$50 million**, and a required **increase in the total number of staff working for IOC from 60 to 90** (including RB-based staff on fixed-term positions). This represents an increase of approximately 57% in the total budget and 50% in the combined workforce.

This note recognizes that significant changes to the IOC RP are difficult to achieve given the low prospect of UNESCO RP nominal budget growth (which, in practice, translates into a reduction of resources in real terms). For this reason, **the only feasible means of meeting IOC's urgent need for an increase in its budget is likely to be an increased commitment of IOC Member States to provide more stable and predictable EXB resources, i.e. so called core voluntary EXB.**

IOC Member States are therefore invited to consider innovative ways of providing increased and more stable resources to IOC. Such an increase would allow IOC to successfully implement its growing mandate, and coordinate the Ocean Decade, thus paving the way for a new era in ocean science, one in which humankind can begin to manage the ocean in a sustainable manner.

¹ The United Nations Decade of Ocean Science for Sustainable Development (2021–2030) is referred to as the Ocean Decade in this document.

1. Global developments and the growing role of IOC-UNESCO

The following major international developments of our time shape the current work of IOC:

- the adoption of the 2030 Agenda and inclusion in it of the Ocean SDG 14, which reflects both the crucial role of the ocean for sustainability and the gravity of the current ocean health crisis;
- the proclamation in December 2017 by the UN General Assembly at its 72nd session, in response to the proposal by IOC, of the United Nations Decade of Ocean Science for Sustainable Development (2021-2030, the Ocean Decade), intensive and comprehensive Decade planning in 2018–2020, and subsequent unparalleled engagement of partners and mobilization of activities achieved in the initial phase of the Ocean Decade implementation;
- an increased focus on the ocean in the UNFCCC, CBD, and the UN as a whole, with an unprecedented strategic reliance on IOC services as reflected, for example, in the Political Declaration of the 2022 UN Ocean Conference in Lisbon;²
- a new level of governmental commitment to start managing the ocean sustainably within Exclusive Economic Zones by 2025 by countries affiliated with the High-Level Panel for a Sustainable Ocean Economy and the call of HLP on all other countries to do so by 2030;
- a growing understanding that Sustainable Ocean Planning, based on adequate science, is both feasible *and* a major opportunity for humankind, both within Exclusive Economic Zones and in the high seas, to develop a sustainable ocean economy, contribute to fight against poverty, and address climate change, while at the same time preserving and restoring the ocean health.

These developments reaffirm IOC's purpose as defined in Article 2 of its Statutes: "*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 process of its Member States*". Yet, if 60 years ago, when IOC was first created, it acted largely as a platform for intergovernmental *cooperation* in ocean research, the current imperative is for the systematic *application* of scientific knowledge in the service of ocean sustainability.

IOC continuously reviews and adjusts its objectives in light of emerging opportunities and assesses its capacity to achieve these objectives and the resources required to do so. This process involves UNESCO and IOC Governing Bodies, Chair and Officers, building on the findings of audits and evaluations. For example, referring to the endorsement by the United Nations in 2015 of the 2030 Agenda with its dedicated ocean goal, the 2016 External Audit Report³ called on IOC *'to seize this opportunity to assert its central role in the information and coordination system that will be necessary for the implementation of Goal 14'*. The Report concluded as follows: *'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.'*

² "We also recognize the importance of the United Nations Decade of Ocean Science for Sustainable Development (2021–2030) and its vision to achieve the science we need for the ocean we want. We support the Decade's mission to generate and use knowledge for the transformational action needed to achieve a healthy, safe and resilient ocean for sustainable development by 2030 and beyond. We fully support the work of the Intergovernmental Oceanographic Commission of UNESCO in implementing the Decade and commit to supporting these efforts" - Paragraph 12 of the [Political Declaration "Our ocean, our future, our responsibility"](#)

³ UNESCO [200 EX/20.INF.2](#), New audits by the External Auditor: audit report on the Intergovernmental Oceanographic Commission (IOC), 2016

The Commission has risen to this challenge by initiating and designing an unprecedented transformative undertaking in the form of the Ocean Decade. The UNESCO Internal Oversight Service in its 2021 Evaluation of IOC's Strategic Positioning⁴ emphasized that '*the UN Decade of Ocean Science for Sustainable Development is an example of how IOC-UNESCO has been successful in developing linkages to policy makers and growing the recognition of the oceans.*' The evaluation noted that there is a perception among key stakeholders that '*the Ocean Decade has ushered in a "new age" for IOC-UNESCO. It has reinvigorated its purpose. It presents a substantial opportunity for IOC-UNESCO to pivot to a more "active" sort of ocean science linking more closely to the science-policy interface.*' However, the report also noted that "*IOC-UNESCO's increased range of involvements have stretched the limits of the Secretariat's resource capacity.*"

Against this backdrop, the IOC Executive Council at its 55th Session (14–17 June 2022) requested the IOC Executive Secretary to provide by September 2022 an estimate of the budget and human resources needed to sustainably deliver IOC's core programmes and to expand its activities in response to increasing demands by Member States and other stakeholders. Following this request, the Executive Secretary initiated a focused review of IOC's new, enlarged role and the evolving requirements of Member States. To support this work and help estimate the resources required by IOC, the Executive Secretary also engaged the author of the 2021 IOS evaluation of the strategic positioning of IOC, the consulting company Open Cities. The findings of the review are briefly summarized below.

2. Current Objectives, Situation, and Challenges

IOC's High-Level Objectives (HLOs)⁵ are defined by the IOC Medium-Term Strategy (MTS) 2022–2029:

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.
5. Foresight on emerging ocean science issues.

The HLOs closely reflect the vision of the 'ocean we want' as defined by the Ocean Decade:

1. A clean ocean where sources of pollution are identified and reduced or removed.
2. A healthy and resilient ocean with marine ecosystems understood, protected, restored and managed.
3. A productive ocean supporting sustainable food supply and a sustainable ocean economy.
4. A predicted ocean where society understands and can respond to changing ocean conditions.
5. A safe ocean where life and livelihoods are protected from ocean-related hazards.
6. An accessible ocean with open and equitable access to data, information and technology and innovation.
7. An inspiring and engaging ocean where society understands and values the ocean in relation to human well-being and sustainable development.

⁴ [UNESCO IOS/EVS/PI 197](#), Evaluation of the strategic positioning of IOC-UNESCO, 2021

⁵ [IOC-UNESCO/INF-1412, IOC-UNESCO Medium Term Strategy 2022–2029](#)

To achieve the HLOs, IOC operates through its value chain comprised of six core Function, initially defined in its MTS of 2014-2021,⁶ namely:

A: Ocean research

B: Observing system / data management

C: Early warning and services

D: Assessment and information for policy

E: Sustainable management and governance

F: Capacity development

The work of IOC is therefore organized through its Functions, which in turn shape the structure of IOC Secretariat comprising five Sections: 1) ocean science; 2) observations and services; 3) tsunami; 4) marine policy and regional coordination; 5) data management and capacity development – based in Paris and Ostend (Belgium) and also has staff for regional and technical subsidiary bodies around the world.

IOC's current situation

The scale of resources available to IOC for the current financial biennium of 2022–2023 was determined in November 2021 by the General Conference of UNESCO at its UNESCO 41st session, based on the proposal reviewed by the IOC Assembly at its 31st session in June 2021. Based on an overall **regular programme – RP** of \$534.6 million for UNESCO, as agreed by the UNESCO General Conference, an *overall* biennial integrated budget for IOC of \$31.8 million was agreed, of which \$11.2 million as RP, i.e. 2.1% of UNESCO's overall RP.

The total IOC budget for 2022–2023 is constructed on the assumption that IOC will be able to raise significant **extrabudgetary resources (EXB)** in addition to its RP. EXB comprise voluntary contributions from IOC Member States or other funders such as the private sector, philanthropic foundations, etc. In the 2022–2023 integrated budget (41 C/5), EXB amount to 65% (\$20.6 million) of IOC's total budget.⁷ At the time of the 41 C/5 drafting, however, only \$4.4 million of EXB had been secured (funds in hand or formally committed), leaving a *gap* of \$16.2 million.

EXB contributions are mostly directed towards *Funds-in-Trust* or the IOC *Special Account*. The *Special Account* was established with the express purpose of supporting the implementation of IOC's programme of activity through flexible core funding, whilst the *Funds-in-Trust* comprise tightly earmarked, project-oriented funds. In 2020–2021, commitments for voluntary contributions to Funds-in-Trust amounted to 66% (\$12.1 million) and those to the Special Account to 34% (\$6.2 million), consistent with the trend observed over the last two biennia.

It should be noted that voluntary contributions to the Special Account, while offering a more flexible implementation modality than Fund-in-Trust, are also mostly earmarked. In addition, while IOC Member States adopt the biennial budgetary framework for the Special Account, which for 2022–2023 is set at \$9.4 million, this is an aspirational budget, providing a framework for allocation of income raised. This means that, in practice, just 35% of IOC's total integrated budget (\$11.2 million of RP vs total integrated budget of \$31.8 million) is subject to the *collective* decision-making and setting of priorities by IOC Member States.

RP expenses on salaries vs activities

Overall, IOC's operational RP budget has declined from \$3,449,900 in 2010–2011 (35 C/5) to \$1,834,800 in 2021–2022 (41 C/5), i.e. 53% of the 2010–2011 nominal value. RP-funds

⁶ [IOC-UNESCO/INF-1314, IOC-UNESCO Medium Term Strategy 2014–2021](#)

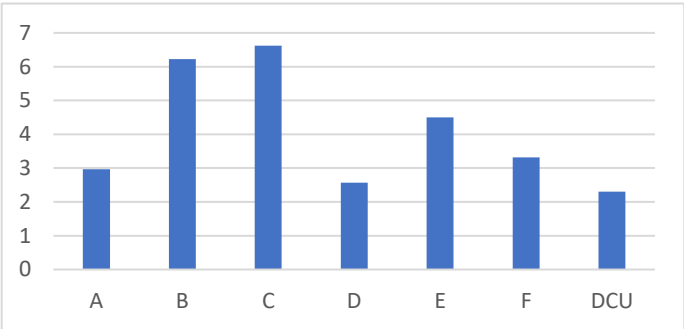
⁷ For comparison with an organization having a similar profile, [WMO Financial Statements for 2021](#), 16 June 2022: 2021 revenue 93'381 K CHF, assessed contributions 67'886 K CHF (72% of revenue).

are used to pay *salaries* of IOC UN staff and for a limited range of operational purposes (*activities*), such as meetings, travel, publications, etc. In 2010–2011, i.e. prior to the withdrawal of US funding from UNESCO, salaries represented 64% of IOC’s RP allocation, and *operational* expenditures 36%. Since then, IOC’s budget for activities, as a share of total RP allocation, has fallen significantly. In the 2018–2019 (39 C/5) and 2020–2021 (40 C/5) periods, expenditure on activities was maintained at 25% of the budget, reflecting IOC Assembly resolutions that required that the share of expenditure on salaries in total RP should not exceed 75% (and on activities should not fall below 25%). In 41 C/5 (2022–2023), the ratio of expenditure on salaries relative to activities, supported by RP, has shifted to 84% / 16%.

Human Resources

Staff establishment supported by RP in 41 C/5 includes 28.5 full time fixed-term posts: 15 Professional Staff (P) and 5 General Service Staff (GS) in the Headquarters, 6 Professional Staff (P) and 2.5 National Professional Officers (NPO) in the field (one NPO position is shared with the Natural Sciences Sector). These positions are stable, which allows IOC to sustain programmatic focus and continuity. The table and chart below show 41 C/5 RP-funded, fixed-term staff assignments to Functions (i.e., 28.5 positions in total, including ADG/IOC and associated office, Operational Support Unit and Decade Coordination Unit), although in practice staff often contribute to more than one Function:

Function	No. of posts
A	2.97
B	6.22
C	6.62
D	2.57
E	4.50
F	3.32
DCU	2.30
Total	28.50

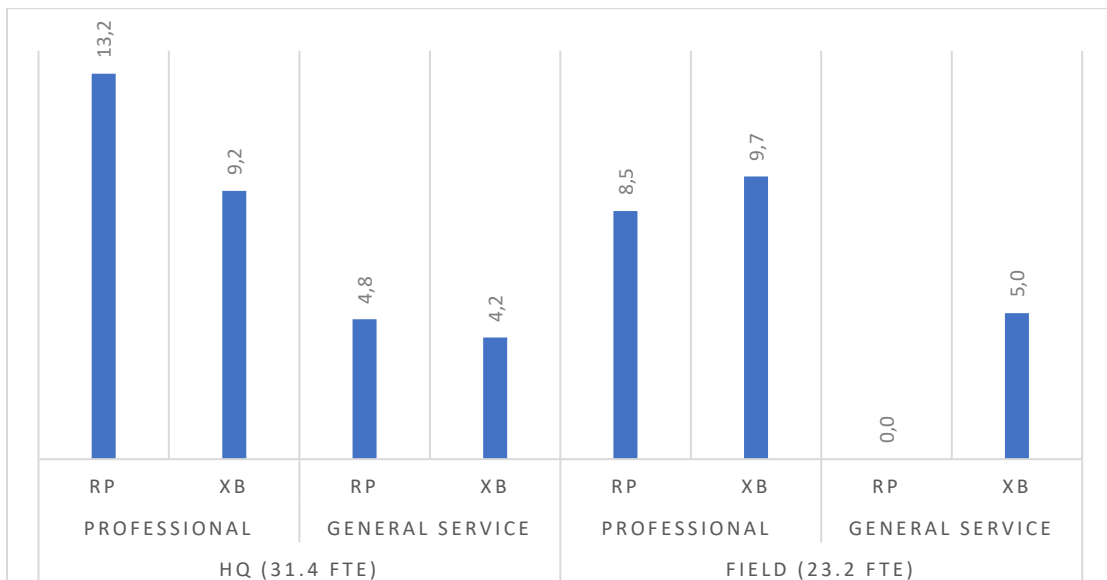


Critical understaffing of the IOC Secretariat has long been highlighted including by the 2016 External Audit. It can be illustrated by the following examples:

- The Capacity Development programme is led by a P-level staff person, at 20% of one FTE, while 80% of that person’s time is allocated to leading crucial IOC data work;
- Executive Officer & Administrative Officer functions are provided by one professional staff, with only one administrative assistant funded by RP;
- Out of 5 IOC sections, only 3 benefit from the support of GS staff funded from RP;
- Functions A and D are maintained by less than 2 posts; and the Ocean Decade also has less than 2 FTE supporting P-level staff.

To supplement the number of staff whose salary is funded by IOC’s RP, i.e. on a relatively stable basis, an approximately equivalent number of staff, also engaged in core work, are funded through EXB. The report on budget implementation for the previous financial period of 2020–2021,⁸ presented to the IOC Executive Council at its 55th session in June 2022, shows the balance of staff funded through RP and EXB, respectively, i.e. 26.5 funded from RP; 28.1 funded by EXB for a total staff complement of 54.6 as detailed below:

⁸ [IOC/EC-55/3.1.Doc\(2\)](#): Report on 2020–2021 (40 C/5) Budget Implementation as at 31 December 2021 and outline of the 2022–2023 Integrated Budgetary Framework



Important IOC work carried out by staff paid primarily through EXB includes: capacity development, coastal zone management, marine spatial planning, management of large marine ecosystems, ocean floor mapping, ocean literacy, OceanTeacher Global Academy, secretariat of the Indian Ocean Tsunami Warning and Mitigation System. The Decade coordination Unit is predominantly funded by EXB and includes 10 people.

Yet, because of the volatility and the often short-term project nature of extrabudgetary funding, the temporary positions of staff that work on core IOC matters are subject to instability and insecurity. This, combined with lack of career opportunities for all staff, is causing a steady outflow of talent as highly competent employees leave IOC to take up more stable and/or more senior positions in other organizations.

At the same time as IOC’s resources have continued to tighten, the demands on IOC, and on sustainable ocean management more generally, have grown rapidly, as summarized below.

3. IOC Programmatic Perspectives

IOC-UNESCO, the only body in the UN System specializing in ocean science, is now at the forefront of the development of new human relations with the ocean. With the Ocean Decade, the scale of this work, and impetus behind it, have increased. The world has united behind the Decade vision of the “ocean we want”, while the 10 Decade Challenges have helped define the “science we need” to achieve this vision. IOC bears the responsibility of coordinating the Ocean Decade, which, in turn, calls for a transformation of the “old” IOC into a “new” IOC capable of responding to new requirements and responsibilities. These growing responsibilities are outlined below.

Ocean research (Function A)

At present, as an official custodian agency for the SDG indicator 14.a.1, IOC monitors the capacity of ocean research in Member States. It reports to the United Nations, through the now well-known *Global Ocean Science Report*, on investments in research, gender balance in the workforce, management mechanisms, attention to local and indigenous knowledge, etc. In addition, the IOC Secretariat coordinates, guides, and supports multiple networks and organizations of scientists and practitioners addressing urgent, emerging, and understudied issues in ocean sciences. Examples include multiple ocean stressors, deoxygenation, acidification, long time series, harmful algae, blue carbon, and the overall ocean carbon research. The work on ocean carbon research, in turn, is a critical input into the UNFCCC and its Paris Agreement. IOC also sponsors the work of the multi organizations Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), with its

activities and current advances in: (i) the detection of, and fight against, plastic pollution and other contaminants of the ocean; and (ii) climate change and ocean carbon sequestration. IOC is also a long-term co-sponsor of the World Climate Research Programme (WCRP), a major strategically important world-leading platform for shaping and coordinating global and national research agendas on climate and climate change and the origin of climate predictions for the whole world, broadly known as IPCC climate predictions.

With new ocean issues emerging all the time, and an imperative to contribute to Ocean Decade agendas through its own programmes on ocean acidification, blue carbon, ocean oxygen, multiple ocean stressors and other topics, the IOC's ability to deliver on this vital agenda is increasingly compromised by its stretched resources. Yet, continuing to foster and pursue critical ocean research agendas, strengthen scientific capacity and convert knowledge into actionable tools is a critical pre-condition for the Decade's success.

Observing System/ Data Management (Function B)

“One cannot manage what one cannot measure.” Ocean observations and data form the basis for IOC delivery and require a major upgrade to enable IOC to respond to the growing needs of the modern world for information about the current and future states of the ocean.

Two major IOC programmes play a foundational role in maintaining, strengthening, and integrating global ocean observing, data and information systems: the co-sponsored Global Ocean Observing System (GOOS) focuses on coordinating global networks of real-time ocean observing platforms underpinning ocean forecasting and modelling; and the International Oceanographic Data and Information Exchange (IODE) programme coordinates a global network of approximately one hundred oceanographic data centres and units that manage research-based data, as well as marine libraries.

The sustainability agenda has resulted in unprecedented intensification among Member States of interactions between data producers, scientific communities and practitioners through GOOS and IODE. This work is highly relevant to the achievement of the Decade goals. Decade Coordination Offices are being established within both GOOS and IODE to connect the observations and data facets of the ocean science value chain across all Ocean Decade Challenges. Key requirements concern coverage of the ocean through observations and data collection: (i) thematically, using physical, biogeochemical, biological and ecological variables; and (ii) geographically, including polar regions and the deep ocean and by embracing more countries and regions in sustained ocean observations. Achieving these goals, however, is challenging as the sustainability of key information networks has come under increased pressure, particularly as a result of damage to open ocean infrastructure and data series caused by Covid-19 pandemic.

The emerging field of ocean management depends fundamentally on advances in the digital representation of the ocean, a key infrastructural challenge of the Ocean Decade. IOC is embarking on a foundational and transformative undertaking in this area, namely the Ocean Data and Information System (ODIS). ODIS aims to enable existing and emerging ocean data and information systems to inter-operate following FAIR data principles (findable, accessible, interoperable, and reusable). ODIS will revolutionize the way in which end-users discover and access ocean data from thousands of sources and enable small data hosts, e.g. in developing countries, to share their data and information globally thereby promoting the equitable participation of all Member States in IOC programmes. Yet, despite the systemic importance of this endeavour, ODIS is currently designed and developed on a solely project basis supported by just one donor, namely Flanders (Belgium).

IOC will also continue to host, develop and act as scientific guardian of the Ocean Biodiversity Information System (OBIS), the world's largest, most important and fast developing distributed database on marine life. OBIS is now entering a new phase of life, enabled by revolutionary

new means for detecting and observing species in the ocean using environmental DNA techniques and hence providing an essential tool to monitor marine biodiversity targets under the Convention on Biological Diversity.

Early Warning and Services (Function C)

Climate change is bringing with it increasingly strong tropical storms, which, with pollution and coastal eutrophication, and an accelerated growth of coastal populations, are leading to increased exposure to hazards. In increasing demand, also due to the strong growth in aquaculture operations globally, are early warning systems (EWS) for harmful algal blooms. New hazards continue to emerge; for example, the Caribbean region still lacks a solution to the menace posed by Sargassum. But the largest IOC contribution to preserving the lives and safety of communities is the tsunami warning and mitigation system. As the 2021 UNESCO Evaluation put it, “*there is a clear value [in] IOC-UNESCO’s tsunami Early Warning Systems (EWS) to disaster risk reduction and the objectives of the Sendai Framework. The EWSs have undoubtedly reduced disaster risk and loss of life, livelihoods, and health.*”

The United Nations General Assembly gave IOC the mandate to coordinate tsunami warning and mitigation systems globally after the disastrous 2004 tsunami in the Indian Ocean. The Ocean Decade has required IOC to significantly increase its ambition to build a new generation of global tsunami warning and mitigation systems. In response, IOC has designed and established the Ocean Decade Tsunami Programme. Its aim is to significantly develop the functionality of the system, based on new science and technology and to ensure that 100 percent of at-risk communities in the Caribbean, Pacific Ocean, Indian Ocean, Mediterranean and northeast Atlantic are recognized as Tsunami Ready. *Inter alia*, this will require increased incremental costs to strengthen the regionally based Tsunami Information Centres (TICs). Three out of four TICs are hosted by Member States (Barbados, Indonesia, United States) and all of them need to evolve into fully staffed and sustainable funded operational units.

Assessments and information in support of the science-policy interface (Function D)

IOC has been, and will continue to be, centrally involved in globally leading assessment processes, such as the current 3rd edition of the UN World Ocean Assessment, IPCC and IPBES Assessments. However, IOC also leads its own major assessment work. It acts as UN official custodian agency for SDG 14 indicators 14.3.1 (ocean acidification) and 14.a.1 (ocean research capacity). Related to the latter indicator, the *IOC Global Ocean Science Report (GOSR)* represents a major stand-alone assessment, which is expected to be regularly repeated. IOC also helps UNEP to develop the science basis and tools for SDG 14 indicators relating to ocean pollution (14.1.1) and the proportion of national exclusive economic zones managed using ecosystem-based approaches (14.2.1).

Member States have also called for further development of the *State of the Ocean Report (StOR)*, the pilot version of which was published in 2022. The UNFCCC Ocean and Climate Dialogue, which is conducted under its Subsidiary Body for Scientific and Technological Advice, is also increasingly calling for IOC contributions. Building on its work on community preparedness, ocean observation and integrated coastal area management, the IOC supports Member States' capacity to understand and predict climate change, its impacts on the ocean and coastal areas, guiding the development and accelerated implementation of effective adaptation and mitigation strategies. Together with the International Hydrographic Organization, IOC is co-sponsoring the General Bathymetric Chart of the Ocean (GEBCO) and with the support of the Nippon Foundation/GEBCO Seabed 2030 project aims to achieve 100 percent mapping of the ocean seafloor by 2030. This works calls for better understanding of gaps in the current coverage of ocean floor by mapping, stimulating greater cooperation to share untapped data, enhanced data collection efforts, facilitating the deployment of innovative technologies for ocean mapping, integrating ocean mapping sensors on existing observation

structures, and developing specific ocean mapping products that support ocean management and conservation efforts.

Through these activities, IOC plays a key role in informing policy. However, IOC also needs a deeper, more secure resource base to continue serving as a custodian agency for multiple SDG indicators and providing major contributions to leading global assessments. There is also a need to strengthen the infrastructure to support IOC own assessments—GOSR, StOR, ocean acidification, and more reliably contribute to the achievement of historic challenge of mapping 100% of the ocean floor by 2030.

Emerging elements of the future sustainable ocean management and science-informed ocean governance (Function E)

The IOC Marine Spatial Planning (MSP) programme offers a foundational component of the future Sustainable Ocean Planning and is the key enabler of sustainable ocean economy. There is a strong and increasing demand for MSP by Member States. The IOC work producing *Guidelines for Marine Spatial Planning (MSP)* has been instrumental in operationalizing MSPs across the world. However, while the leadership of IOC in setting international guidance in MSP is well recognized, IOC's small Secretariat is currently unable to respond systematically to the demands of nations for technical and capacity development support in this area. This is due to the fact that IOC's work on MSP is largely funded through project-based EXB, including through partnership with the European Commission and GEF (UNDP and UNEP), and with help of some bilateral donors (e.g. Sweden). To meet Member States' increased demands in the area of MSP and Integrated Ocean Management, there is an urgent need to move beyond temporary project funding and increase core investment in this area so that MSP can really become a cross-cutting focus for IOC, where tailored research, data, observations and services can be integrated in a coherent ocean planning framework.

As existing and new global UN frameworks are increasingly looking at the ocean through the climate-ocean-biodiversity nexus, the IOC will need to step up its explicit contribution to the UN 2030 Agenda and its Sustainable Development Goals (SDGs), 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 new post-2020 biodiversity framework under the Convention on Biological Diversity including the implementation of potentially new marine biodiversity conservation targets, such as the 30x30 initiative, and the new international legally-binding instrument under UNCLOS on conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ). Within these processes, as the lead UN body for ocean science, the Commission should be equipped to deliver policy relevant research products, under-pinning observation frameworks for ocean biodiversity and climate change, foresight on ocean science issues, as well as cooperative frameworks for capacity development across and within ocean basins.

In an enhanced resource scenario, the fundamental value proposition of the IOC would be to offer a framework for sustainable ocean management articulated around the delivery of: i) ecosystem-based research, models, and prediction, including impacts of human stressors, to assess marine ecological sustainability and resilience; ii) the development of ocean observation services and related data infrastructure to inform the development and implementation of ocean plans, facilitating the integration and delivery of data and information across different scales and disciplines; iii) the development of decision support tools, including economic valuations, to facilitate cooperation and coordination amongst key stakeholders (e.g. governmental authorities, industry) in the domain of ecosystem management and for building effective science-policy-society interfaces; iv) support to Member States in developing their capacity in these areas and sharing experiences through effective networks, leveraging IOC's regional structure. This proposition responds to policy recommendations emanating from the High-Level Panel on Sustainable Ocean Economy, UN Ocean Lisbon Conference Political

Declaration, regional agreements (Regional Seas Conventions), and the EU Maritime Strategy and related ocean governance framework.

Sustainable ocean management can be the overarching and most important outcome of IOC's contribution to the 2030 Agenda and implementation of the Decade transformative actions, with benefits accruing to all aspects of sustainable development. Integrated Ocean Management approaches will transform what are currently individual elements, coalescing under IOC's leadership in science-based marine spatial planning and coastal zone management, scaled up from local and national to regional levels through improved management of large marine ecosystems, and other transboundary management approaches.

Capacity Development and Ocean Literacy (Function F)

Building institutional capacity in Member States, across all of the Functions above, is a cross-cutting IOC focus. The Commission's unique qualification to support Member States' capacity development (CD) relates to the fact that IOC systematically monitors capacity constraints and reports these through the GOSR. Historically, IOC has been successful in guiding the CD activities across the whole UN. Correspondingly, the *IOC Criteria and Guidelines on the Transfer of Marine Technology* are explicitly quoted in the formulation of targets for SDG goals.⁹ The IOC OceanTeacher Global Academy is a key training tool uniting 17 centres around the world that, together with the WESTPAC network of Regional Research and Training Centres, is the world leading online training facility for ocean practitioners. IOC training capacity is also ably augmented by the UNESCO Category 2 Centres in the Islamic Republic of Iran, India, and Iceland. In addition, as an initiative of the above-mentioned GE-CD, "Capacity Development Compendium" is being developed: an online database of capacity development activities designed to assist individuals, e.g., early career professionals, managers, technicians, government officials, schoolteachers, and organizations, in searching for CD opportunities related to ocean science such as awards, fellowships, grants, internships, teaching materials, trainings, etc., offered around the world. IOC is considered by UN Member States as a key contributor to the CD pillar of the emerging BBNJ instrument. Independently, having in mind the approaching completion of the BBNJ Agreement, IOC has been creating a mechanism for matchmaking of CD needs and sources. This undertaking will be a part of ODIS (Function B) and is currently developing as an IODE Ocean InfoHub (OIH) project that facilitates access to global ocean information, data and knowledge products for management and sustainable development. The OIH stimulates the growth of a network of regional and thematic nodes, including existing clearinghouse mechanisms. Three regional communities of practice (Africa, Latin America and the Caribbean, and the Pacific Small Island Developing States) have been already established. The IOC Capacity Development Strategy, which is currently being revised by the IOC Group of Experts on Capacity Development (GE-CD) for submission to the IOC Assembly in 2023, aims to ensure long-term impact and sustainability of global and regional CD programmes. It foresees an expansion of all CD activities and creating a capacity to start practically assisting Member States, giving priority to Africa, LDCs and SIDS.

Over the past five years, IOC has revolutionized the global work on Ocean Literacy (OL), developing an online platform, a toolkit, promoting the approach globally and regionally, and contributing to the UNESCO foundational work on education for Sustainable Development. Knowing what the ocean means for people and how they affect the ocean is the foundation for more harmonious relations between humankind and the ocean. This work was entirely based

⁹ 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 States and least developed countries.

in intermittent EXB funding. It needs to be continued, expanded, and put on a sustainable basis.

The Ocean Decade

The 2021 Evaluation of the Strategic Positioning of IOC noted: *“the promulgation of the UN Decade and decision by UNGA to entrust IOC-UNESCO with its coordination are an obvious signal of confidence by the world’s community of nation States in IOC-UNESCO. A triumph of strategic imagination, the Decade is a unique opportunity to accelerate the transition to sustainable management of the ocean which takes into account the need for climate change mitigation and adaptation, environmental health including biodiversity, and sustainable supply of resources including food.”*

After three years of planning and nearly two years of implementation, coordinated by IOC, the *Ocean Decade has grown into the largest undertaking in the history of ocean science*, embracing 44 Programmes and almost 200 stand-alone projects, having mobilized resources in the order of \$1 billion to support the implementation of Decade programmes and projects. It is also the largest co-designed mechanism in global ocean research with a focus on practical support across almost the full range of Sustainable Development Goals. Engaging nations, uniting regions, bringing together technology and ethics, the Decade is a once-in-a-life-time opportunity for IOC’s future visibility and a recognized leadership role within and outside the UN system. It also brings significant opportunities for IOC programmes to leverage the Decade to develop and implement new programmes and initiatives that help further its institutional goals.

However, the Decade also brings risks to IOC. While they are not insurmountable, they need to be recognized, and carefully managed. A key risk is that as the visibility and global attractiveness of the Decade continue to grow, they could pull resources and attention away from existing IOC programmes because donors will seek to be part of the highly visible global Decade movement. A second key risk relates to the ability of the IOC to deliver the continuous expansion of the Decade in a successful and impactful way.¹⁰ The Decade is coordinated by IOC primarily through EXB and the vast majority of staff working on the Decade are employed as consultants. This results in high staff turnover and challenges in recruiting the best available personnel for strategic posts.

The risks to IOC associated with the Decade can be mitigated because, as was stated above, there is a strong overlap and significant synergies between the existing and future programmatic priorities of the IOC (HLOs and Functions) and the Ocean Decade Vision, outcomes and ten Challenges. By participating in, and leading, the Decade’s programmes and activities, and co-designing and expanding new IOC activities (centred on IOC priorities and mandate) as contributions to the Decade, there is the potential for future growth of IOC both in terms of the level and geographic scope of its activities, but also in terms of investment in staff development and human resources. A stronger, more relevant, and better resourced IOC could therefore be the legacy of the Decade. To make this happen, IOC’s dialogue with donors should include: i) the links between the Decade and future IOC growth, ii) the fact many IOC programmes and initiatives that provide fundamental and underlying infrastructure and services for both IOC and partner initiatives need to be continuously supported; and (iii) the IOC’s real needs for coordination of the Decade and the support needed by IOC (and non-IOC) Decade Actions over the next eight years.

¹⁰ Infrastructure to move the Decade forward is demanding and includes the Decade Advisory Board, Decade Coordination Unit hosted by IOC, thematic and regional Coordination Offices, Collaborative Centres, Implementing Partners, National Committees, multiple working groups and teams, Decade Alliance, Decade Forum, etc.

Maximizing IOC support to key beneficiaries by working regionally and nationally

While IOC has a normative role in all aspects of ocean research, and is a global standard-setting organization, it must translate global programmes and initiatives into activity on the ground in the regions and nations in order to support its Member States. This regional work is coordinated through IOC Sub-Commissions, IOCARIBE, IOCAFRICA and WESTPAC, with offices, respectively, in Cartagena (Colombia), Nairobi (Kenya) and Bangkok (Thailand), and a Regional Committee for IOCINDIO that is currently designing its upgrade to an IOC Sub-Commission. WESTPAC has a very active and expanding agenda and is likely to benefit from additional momentum to be created by the Ocean Decade and coordinated by the dedicated WESTPAC Decade Coordination Office. WESTPAC Member States provide significant EXB for the Sub-Commission. Africa is a global priority of UNESCO, and the potential for scaling up the work of IOCAFRICA is greater than ever, as set out in the recently developed *Ocean Decade Africa Roadmap*, which now needs to be mainstreamed by IOCAFRICA Member States. Similarly, IOCARIBE has used the advent of Ocean Decade to engage its Member States in crafting a regional plan for the Sub-Commission.

There is major implementational work under IOC programmes in the regions. GOOS Regional Alliances integrate national needs into regional systems and deliver the benefits of GOOS's strategy, structure, and programmes at regional, national and global levels. Four regional tsunami warning systems are operational round the clock. Seven regional projects are developing under the Ocean Decade. Maritime Spatial Planning practices are already in place in all parts of the globe and await further level of expansion. SIDS are a priority group of IOC, which is explicitly stated in the IOC Medium Term Strategy 2022-2029. A key focus of IOC work with SIDS is on their safety, including efficiency of tsunami warnings, and on ocean management. Through WCRP, critical advances are being made in estimating and predicting sea-level rise and its regional variations, a topic of existential importance for SIDS. In addition, IOC is in direct working contact with the SIDS unit of the Natural Sciences Sector of UNESCO. Additional coverage of some other regions, particularly Atlantic and Pacific, is achieved through partnership with other organizations and alliances.

IOC work in the regions requires a major upgrade, the feasibility of which entirely depends on availability of resources. For example, but by no means exclusively, the UNESCO global priority of Gender Equality is under-resourced in IOC, even though the Commission monitors gender balance in ocean sciences globally (via GOSR and its data portal) and is able to report that in ocean sciences the percentage of female workers is higher than overall average in sciences. One key required development suggested in the IOS evaluation of IOC is instituting a working group to develop a roadmap, through which gender equality can be better mainstreamed throughout the Ocean Decade, in addition to the already foreseen dedicated Programme on leadership of women in the Ocean Decade.

Ocean sustainability needs to mobilize people across all generations and backgrounds. Through the Ocean Decade, IOC would like to actively engage talents and energy of early career ocean professionals as well as involve indigenous knowledge holders in the development of solutions.

Communication and outreach

In recent years, without having any dedicated EXB, IOC has been able to invest in the expansion of communications and outreach. That internal investment was crucial to presenting the role of IOC to partners, stakeholders and donors. The proclamation of the Ocean Decade is itself a result of successfully making the IOC case to the United Nations. The massive engagement in the Decade is also largely achieved by communications and outreach. One culmination of this work is highest-level patronage of the Ocean Decade Alliance, by country Presidents (or Prime-Ministers). Continuation and expansion of this work is a must if IOC wishes to achieve its HLOs and realize the vision of the Ocean Decade.

4. Estimate of resources required

The following analysis is based on Member States' requirements as expressed in the IOC MTS 2022–2029, the programme of work as defined in UNESCO Medium-Term Strategy (41 C/4) including plans of IOC constituencies such as programmes and regional bodies, needs assessments of IOC-based Decade programmes, and other programmes in which IOC participates. The consulting company supporting this review also conducted interviews with a number of IOC Stakeholders, including Member States representatives, to ensure that potential deliverables described in Section 3 of this report align with the understanding of IOC's stakeholders. Significant effort went into ensuring internal coherence in budget estimates and their integration across IOC.

The initial estimates resulted from a direct compilation and summation of requirements over IOC Functions and cross-cutting issues in terms of the number of posts needed and in terms of funding necessities for corresponding activities. A bespoke survey was developed for that purpose and its results analysed first by the consulting company and then by the IOC Management Team. Estimates were then subjected to verification based on the past trends in terms of funding patterns and actual ability to implement. An additional layer of verification was a comparison with the meaningful ratio between staffing costs and operational budget for the staff activities used in the past financial periods. Based on this approach, the following key insights emerged.

The baseline is the current biannual (41 C/5) allocation of RP for salaries, which is \$9.4 million, sustaining 28.5 FTEs. The budget for RP activities is \$1.8 million.¹¹

The current expenses of IOC on salaries needed to maintain the core set of activities and the Decade are of the order of \$12.5 million, which comprises both RP and EXB (see expenditure report 2020–2021).¹² The staff complement using this funding currently numbers around 60 persons (28.5 FTE funded by RP, 28.1 FTE funded by EXB, and some staff on loan and reported on as in-kind contributions).

As regards the requirements of resources needed to implement the identified growing needs of Member States, the combined estimate agreed by the IOC Management Team, Heads of Sections, the Ocean Decade Coordinator and the Executive Secretary is that a work force of 60 positions additional to RP staff would be required, bringing the overall workforce IOC to around 90, i.e. roughly a 50% increase in human resources relative to current numbers, with the estimated biannual salary fund in addition to RP in the order of \$20 million. The staffing costs were determined using 41 C/5 standard staffing costs, at an average of required grades.

The most significant expansion of resources (30% of the total increase) is for Function B (observations and data), 15% for the Ocean Decade, also 15% for Function F (capacity development including regional work, which includes Africa and SIDS), and 10% for each of Function C (warning systems), Function E (sustainable ocean management), Function A (research) and Function D (assessment).

The operational (non-staff) budget for increased activities in response to growing requirements of Member States was estimated to be of the order of \$20 million.

The table below summarizes the estimated needs for additional total EXB-based staff positions and funding (i.e. costs of staff and activities on top of the 41 C/5 regular budget allocation), with breakdown by Functions as follows:

¹¹ 41 C/5 Approved Annex I

¹² [IOC/EC-55/3.1.Doc\(2\) table 3](#): Report on 2020–2021 (40 C/5) Budget Implementation as at 31 December 2021 and outline of the 2022–2023 Integrated Budgetary Framework [2020–2021 Expenditure analysis by main categories of nature of cost]

Function	No. of posts outside RP	Needed Total Funding above RP (US\$)
A	5	3,000,000
B	19	12,000,000
C	7	8,000,000
D	5	2,000,000
E	6	4,000,000
F	8	5,000,000
Decade	10	6,000,000
Total	... 60 (i.e. 30 additionally to current posts outside RP)	40,000,000

The implication of the above is an increase of the **future integrated IOC budget from \$31.8 million (RP of 11.2M + EXB of 20.6M) to \$51.2 million (RP of 11.2M + EXB of 40M)**. The IOC workforce will have to grow from **60 to 90** employees. The estimates for the needed increase in the number of positions and associated budget are clearly subject to a margin of uncertainty. This is reflected in the estimates by using rounded numbers. Accordingly, the final rounded proposed estimate of the future required IOC budget is **\$50 million**.

The most prominent feature of the newly estimated future IOC budget is not its size. To attract and keep the workforce that is required to fulfil the new requirements, there is a need to make sure that the budget is sufficiently *stable*. As at today, only the RP element of the budget is stable. The needed stability of the EXB component of the budget can only come on the basis of an **innovation in IOC's model of EXB funding**. IOC Member States that are not UNESCO Member States may be invited to find a way to pay a stable contribution to the IOC budget. Early announcement of longer-term commitments to financially support IOC may go a long way in providing financial stability for the Commission. On top of these possibilities, there is a need to embark on using the Article 10.4 which reads: *"The Commission may establish, promote or coordinate, as appropriate, additional financial arrangements to ensure the implementation of an effective and continuing programme at global and/or regional levels."*

5. Key Conclusions

The purpose of this document is to respond to the IOC Executive Council's request for an *'estimate of the resource requirements, including the needs in human resources, necessary to sustainably deliver IOC's core programmes and to expand its activities in response to increasing demands of Member States and other stakeholders'*. The estimates of the required budget presented above are based on the analysis of current tendencies in the progress of ocean science and opportunities and urgent needs in the domains of climate, biodiversity, ocean economy, human wellbeing, with a view to embarking on sustainable ocean planning and fulfilling IOC's responsibility for overall coordination of the Ocean Decade.

While the workforce currently supported by RP is 28.5 FTE, the overall number of people presently working for IOC is in the order of 60. However, the volatility and short-term nature of EXB is the largest challenge to the stable delivery of IOC services. **IOC staff that are funded through EXB require more stability**. The gap in EXB which is currently approximately 50% of the total budget is a true challenge for IOC. The RP represents at present approximately one third of the integrated budget, which reduces the scope of Member States guidance on the IOC activities and increases the risk for the Commission to allocate more time and human effort to not-so-central activities for the IOC crucial mandate.

The sum of RP and EXB for the future IOC **biennial integrated budget is estimated at \$50 million**. Approximately 90 staff in total will be needed to implement the work. Any increase in the UNESCO RP allotted to IOC would help to stabilize the situation, but is difficult to realize in the current financial context. However, *the key desirable, and urgently required, change in*

*the funding of IOC's budget is an increased commitment by IOC Member States to provide more stable and predictable EXB resources, i.e. **core voluntary EXB**.*

IOC Member States are invited to discuss how, by combining RP and *core voluntary EXB*, and developing new mechanisms for securing the required funds, an adequate integrated budget can be ensured. This should preferably involve non-earmarked contributions to the IOC Special Account in the form of predictable and long-term project financing to meet specific needs that align with donor priorities through Funds-in-Trust mechanism.

While Member States adopt the biennial budgetary framework for the IOC Special Account, which for 2022–2023 is set to \$9.4 million, this is an aspirational budget, providing a framework for allocation of income raised. If fully funded, together with RP, this would raise the amount of 'core' funds to \$20 million, which would, in turn, mean that more than half of the IOC's resources would be guided by collective decision-making and priority-setting of its Member States. The IOC Statutes Article 10.4 has to be applied for that purpose now.

Return on investment into the IOC will be significant and will help further expand its scope of activities from overall guidance, norm setting and capacity development towards starting to assist the development of ocean science capacity of individual Member States, with priority to Africa, LDCs and SIDS.

A better and more stably resourced IOC can create conditions for a new era in ocean science during which humankind will start to sustainably manage the ocean. The Ocean Decade will be a key instrument in this transformation. Increased, more stable investment in IOC will also strengthen the fundraising capacity of IOC and may lead to the future increase of IOC integrated budget to values beyond \$50 million.