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**IOC CAPACITY DEVELOPMENT STRATEGY FOR 2015-2021**



United Nations  
Educational, Scientific and  
Cultural Organization

Organisation  
des Nations Unies  
pour l'éducation,  
la science et la culture



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intergouvernementale

## IOC Capacity Development Strategy

## Stratégie de la COI

## pour le développement des capacités

2015–2021

IOC Capacity Development Strategy  
.....  
Stratégie de la COI pour  
le Développement des Capacités  
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Stratégie de la COI pour  
le Développement des Capacités **35**

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# IOC Capacity Development Strategy, 2015–2021

Adopted by Resolution XXVIII-2 of the IOC Assembly at its 28<sup>th</sup> Session (Paris, 18–25 June 2015), the Vision Statement of the IOC Capacity Development Strategy (2015-2021) identifies capacity development as the primary catalyst by which IOC will achieve its four high level objectives in the current IOC Medium-Term Strategy (2014–2021) [IOC/INF-1314].



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\* Available on line in English only at <http://www.ioc-unesco.org/cd-strategy-background>

# EXECUTIVE SUMMARY

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Capacity building is an essential tenet of IOC's mission: It enables all Member States to participate in and benefit from ocean research and services that are vital to sustainable development and human welfare on the planet. This Strategy's vision identifies capacity development as the primary catalyst through which IOC will achieve its four high level objectives in the current 2014–2021 IOC Medium-Term Strategy.

Over the past 55 years Member States have derived numerous benefits from IOC's capacity development from the first International Indian Ocean Expedition to the revitalisation of African marine science coordination and establishment of the global tsunami warning network including the monitoring/forecasting networks that save lives (see addendum, section III). Reinforced partnerships between IOC and its Member States, other UN agencies, donors, and the scientific community have been the cornerstone of this success.

During this period, the transformation of ocean science capabilities, accelerating threats to ocean health and ecosystem services, and the growing challenge of sustainable development require the IOC and its Member States to accelerate the pace of IOC capacity development. Resource constraints, both staff and funding, limit IOC's ability to mobilise the necessary partnerships to address Member State science and services that will enhance human welfare and sustainable economic development.

In 2014, the UN General Assembly adopted the Oceans and the law of the sea Resolution (A/RES/69/245) which reiterated the essential need for cooperation, including through capacity building and transfer of marine technology, *"to ensure that States, especially developing countries, in particular the least developed countries and small island developing States, as well as coastal African States, are able both to implement the Convention<sup>1</sup> and to benefit from the sustainable development of the oceans and seas, as well as to participate fully in global and regional forums and processes dealing with oceans and law of the sea issues."* 2015 will mark the establishment of the Post-2015 Development Agenda, which is expected to be integrated as Sustainable Development Goals (SDGs).

IOC has a unique international niche in ocean science, services and capacity development: (a) fostering international cooperation for sustained observations of the oceans; (b) generating oceanographic data and information products and services and interaction between research, operational, user communities and decision-makers in order to derive maximum societal benefit from new knowledge to achieve IOC's High Level Objectives. The IOC will mainstream its natural and social science approach to capacity development in its Member States and, in particular, in Priority Africa, SIDS and Gender Equality.

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1 UN Convention on the Law of the Sea



This strategic framework provides six outputs and numerous activities that are elaborated in detail below. These outputs call for investing in people and the institutions of which they are a part, enhancing access to scientific tools and methodologies, reinforcing IOC's capabilities to provide services to Member States, enhancing the communication between scientific and policy makers communities, expanding ocean literacy in civil society and mobilising resources to accomplish these goals.

While this framework provides general guidance on elements of an implementation plan yet to be developed, elevating IOC's impact to the scale required is contingent on:

- Reinforcing and valuing IOC staff at global and regional levels and, where necessary, participating national ocean scientific and governance institutions;
- Integrating IOC global and regional mechanisms to rapidly expand Member State participation in IOC programmes:
  - Empowering IOC regional sub-commissions and other subsidiary bodies to engage with Member States, expanding collaboration and capacity development (including transfer of marine technology) on their coastal and marine affairs priorities
  - Strengthening global science programmes to increase scientific engagement with Member State coastal and marine priorities;
- Recommitting to partnerships through the IOC with its Member States, UN organizations and other agencies, scientific community and civil society;
- Mobilizing resources, e.g., personnel, funds, knowledge, and observing networks, to deliver the capacity development on which science, services and human communities depend; and
- Continued attention to “enabling institutional conditions” as identified in discussions on “The Future of IOC”.

The conclusions identify elements of a draft work plan including conducting needs assessments to establish CD work plans, mobilizing associated resources and enhanced communication and collaboration.

During 2015–2021, this strategy proposes the following framework of outputs and activities:



<b>Output</b>	<b>Activity</b>
1. Human resources developed	1.1 Academic (higher) education 1.2 Continuous professional development 1.3 Sharing of knowledge and expertise/ community building 1.4 Gender balance
2. Access to physical infrastructure established or improved	2.1 Facilitating access to infrastructure (facilities, instruments, vessels)
3. Global, regional and sub-regional mechanisms strengthened	3.1 Further strengthening and supporting secretariats of regional commissions 3.2 Enhance effective communication between regional sub-commission secretariats and global programmes as well as other communities of practice (incl. other organisations)
4. Development of ocean research policies in support of sustainable development objectives promoted	4.1 Sharing of information on ocean research priorities 4.2 Developing national marine science management procedures and national policies
5. Visibility and awareness increased	5.1 Public Information 5.2 Ocean Literacy
6. Sustained (long-term) resource mobilization reinforced	6.1 In-kind opportunities 6.2 Financial support by Member States to IOC activities

# VISION AND MISSION STATEMENTS

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1. The vision<sup>2</sup> of IOC's Capacity Development Strategy is derived from the IOC Vision and High-Level Objectives for 2014–2021 (IOC Medium-Term Strategy, IOC/INF-1314) and also from risks and opportunities related to ocean and coasts.

2. The **vision statement** of IOC's Capacity Development Strategy:

***Through international cooperation, IOC assists its Member States to collectively achieve the IOC'S high-level objectives (HLOs), with particular attention to ensuring that all Member States have the capacity to meet them.***

3. The High-Level Objectives are<sup>3</sup>:

(i) Healthy ocean ecosystems and sustained ecosystem services

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

(ii) Effective early warning systems and preparedness for tsunamis and other ocean-related hazards

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

(iii) Increased resiliency to climate change and variability and enhanced safety, efficiency and effectiveness of all ocean-based activities through scientifically founded services, adaptation and mitigation strategies.

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2 The vision statement outlines where we want to be with our organization

3 Extract from the IOC Medium Term Strategy (2014–2021)

*Climate change and variability impact many elements on which human well-being depends, modifying patterns of rainfall and drought, sea-level and coastal erosion, and through temperature changes and ocean acidification, adding stress to ecosystems and impacting on the goods and services they provide. Thus, human development goals including food security, access to water resources, and preparedness and resilience to disasters are threatened. It is known that the ocean plays a key role in climate; IOC will therefore assist its Member States in developing capacity to enable them to develop and improve climate impact mitigation and adaptation strategies that are based on growing scientific knowledge.*

(iv) Enhanced knowledge of emerging ocean science issues

*A broad range of emerging environmental issues such as new contaminants, invasive species, marine renewable energies, the expansion and intensification of uses of marine resources, cumulative effects of human maritime activities, etc., jeopardize the conservation and sustainable use of marine spaces and ecosystems. It is important to improve our understanding of the opportunities and of the changes that are occurring within the Ocean, including the deep sea. The IOC's role is to encourage scientific research, technical analyses and syntheses of scientific data and information needed to effectively address these emerging issues, inform policy, and advance solutions in a timely and transparent manner."*

4. As all oceans are interconnected and affect earth's climate system as a whole, the improved scientific knowledge and capacity to understand and observe the ocean climate and ecosystems needs to be available equitably to all IOC Member States. It is the responsibility of the IOC's capacity development programme to ensure all Member States achieve the necessary capacity. IOC's existing programme structure will be a key mechanism for implementing the strategy through heightened cross-IOC programme integration and expanded capacity building within HLO execution. IOC acting as a joint specialized mechanism to deal with ocean research and services within the UN system should collaborate with other UN organizations.

5. The **mission statement** of IOC's Capacity Development Strategy:

***The IOC will undertake relevant actions to assist Member States with developing and sustaining the necessary capacity to undertake activities necessary to achieve the IOC vision at the national level as well as at the international cooperation level.***

6. IOC's Capacity Development, as one of the six functions defined in the IOC Medium-Term Strategy, 2014–2021 (the others being ocean research, observing system/data management, early warning and services, assessment and information for policy, sustainable management and governance) will be a cross-cutting function.

7. IOC's Capacity Development Strategy will also contribute to the United Nations Convention on the Law of the Sea (UNCLOS), more particularly its Part XIV: Development



and Transfer of Marine Technology)<sup>4</sup>. The Transfer of Marine Technology was placed on the Agenda of UNCLOS to ensure the exploration and exploitation of the seabed and the areas for developing countries. Part XIV encourages States and International Organizations to cooperate in promoting the development and transfer of marine technology on fair and reasonable terms and conditions in order to help developing countries to access the benefits of Oceans and Seas. Technology and innovation are needed to exploit the huge wealth that can be derived from ocean and sea-related activities in a sustainable manner. Transfer of Marine Technology (TMT) plays a key role in the development of countries through: (i) Exploitation and Exploration of Marine Resources; (ii) Navigation Safety; (iii) Preservation of the Marine Environment; and (iv) Prevention of Disasters.

8. Partnership and collaboration will be essential pillars of IOC's Capacity Development Strategy. IOC will collaborate with the many United Nations specialized agencies, research organizations, NGOs, private sector and others, leveraging partner capabilities, expertise, platforms, data, joint funding opportunities etc., to maximize efficiencies, effectiveness and impact of CD interventions for our Member States. Only a one ocean/global community approach can accelerate scientific, governance and management capacity building to the scale required to solve today's environmental resilience and sustainable development challenges.

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<sup>4</sup> see: [http://www.un.org/depts/los/convention\\_agreements/texts/unclos/part14.htm](http://www.un.org/depts/los/convention_agreements/texts/unclos/part14.htm)

# STRATEGIC FRAMEWORK, JULY 2015 – JUNE 2021

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9. In this regard it is noted that IOC's interventions will be focused on the implementation process: results will be induced by the use of outputs by the direct beneficiaries (Member States). IOC will contribute to a number of activities that will generate outputs which will contribute to expected results (outcomes).

## EXPECTED RESULTS (OUTCOMES)

10. The expected result of the IOC's capacity development interventions is for Member States 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 decision-making processes. It will be essential to monitor and report on the results taking into account, inter alia, the UNESCO priorities including gender, Africa, LDCs, and SIDS. Regional Sub-Commissions and Regional Committees will play an essential role in planning, implementation and monitoring of the strategic plan. Given the needs for capacity development varying from one region to another, IOC regional sub-commissions and regional committees shall take an adaptive approach to capacity development for their respective regions while taking into account all activities and actions contained in this strategy.

## OUTPUTS

11. The activities and actions undertaken by the IOC within the framework of targeted capacity development will result in a number of outputs that, through their use by Member States should result in desired "changes" at the national and sub-regional level in areas such as decision-making, policy, governance, and knowledge.

## OVERVIEW OF OUTPUTS

12. A total of six expected outputs are identified. They all need to be addressed on a long-term and sustained basis.

1. Human resources developed
2. Access to physical infrastructure established or improved
3. Global, regional and sub-regional mechanisms strengthened
4. Development of ocean research policies in support of sustainable development objectives promoted
5. Visibility and awareness increased
6. Sustained (long-term) resource mobilization reinforced.

13. The identified outputs will be achieved through a number of targeted activities and related actions made possible by inputs such as funding, human resources and institutional resources. This can be summarized in the table below:

<b>Output</b>	<b>Activity</b>	<b>Action</b>
1. Human resources developed	1.1 Academic (higher) education	1.1.1 Promote and assist with the establishment of consortia of higher education at the appropriate geographical scale 1.1.2 Promote collaboration between UNESCO Chairs and IOC
	1.2 Continuous professional development	1.2.1 Promote and assist with the organization of training courses, workshops and "summer schools" relevant to the IOC mandate 1.2.2 Establish, or collaborate with other organizations on an internship/fellowship programme (including on-board training) 1.2.3 Establish and collaborate with other organisations on a visiting lecturer programme 1.2.4 Promote and assist with the establishment of regional training (and research) centres relevant to the IOC mandate 1.2.5 Promote the sharing of training materials
	1.3 Sharing of knowledge and expertise/community building	1.3.1 Establish a travel grant "fund" 1.3.2 Establish or collaborate with other organizations on a mentoring programme 1.3.3 Promote and assist with the development of IOC alumni networks 1.3.4 Promote and support "young scientist" awards
	1.4 Gender balance	1.4.1 Promoting participation of women in ocean research
2. Access to physical infrastructure established or improved	2.1 Facilitating access to infrastructure (facilities, instruments, vessels)	2.1.1 Establishing and maintaining a register of infrastructure to facilitate access 2.1.2 Promoting the development of, and expand access to, regional sustainable scientific infrastructure

<b>Output</b>	<b>Activity</b>	<b>Action</b>
3. Global, regional and sub-regional mechanisms strengthened	3.1 Further strengthening and supporting secretariats of regional commissions	3.1.1 Improve staffing of secretariat of regional sub-commissions 3.1.2 Reinforcing budgeting of regional sub-commissions
	3.2 Enhance effective communication between regional sub-commission secretariats and global programmes as well as other communities of practice (incl. other organisations)	3.2.1 Establishing an effective coordination and communication mechanism between the secretariats of the regional sub-commissions and the global programmes
4. Development of ocean research policies in support of sustainable development objectives promoted	4.1 Sharing of information on ocean research priorities	4.1.1 Compare and compile information on existing ocean research priorities among government and other organizations
	4.2 Developing national marine science management procedures and national policies	4.2.1 Assist Member States with the development of marine science management procedures and national policies
5. Visibility and awareness increased	5.1 Public Information	5.1.1 Promote the development of public information (communication) departments in ocean research institutions
	5.2 Ocean Literacy	5.2.1 Foster development of an IOC ocean literacy programme as a community of practice to share experience within and across regions
6. Sustained (long-term) resource mobilization reinforced	6.1 In-kind opportunities	6.1.1 Fostering partnerships to increase in-kind support opportunities
	6.2 Financial support by Member States to IOC activities	6.2.1 Resource mobilisation from Member States, Institutional and Private Sector Partners

# DETAILED DESCRIPTION OF OUTPUTS AND ASSOCIATED ACTIVITIES

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## **Output 1. Human resources developed**

14. Human resources (academic staff, researchers, technicians, managers as well as students) are the foundation required for any research or management activity. This foundation must not only be built but also maintained. It is also important to ensure that the human resources development creates a “critical mass” of trained staff (i.e. not just one person for each Member State).

### **Activity 1.1 Academic (higher) education**

15. Academic education is provided at national Universities or, when these do not provide the necessary curriculum, in other Universities within or outside the region. The IOC Capacity Development Strategy can promote collaboration among Universities (and associated research institutions) and improve the cooperation between UNESCO Chairs and IOC programmes and activities. The following actions are proposed:

#### **⇒ Action 1.1.1 Promote and assist with the establishment of consortia of higher education at the appropriate geographic scale**

16. While it is desirable to have full degree programmes in national Universities this may not always be possible. IOC will promote the establishment of national or regional consortia (of countries within a region) of higher education institutions that develop joint curricula for an integrated course programme and degrees that are recognized by all members of the consortia. Example: Erasmus Mundus and now Erasmus+<sup>5</sup>. This should be done in close cooperation with associated research institutions.

17. In addition to Erasmus+ (Mundus) and many other specific scholarships/grants (Fulbright, EU-USA, etc.), there are many university agreements amongst institutions from countries sharing the same language on specific disciplines, e.g.:

- Grupo Universidades La Rábida – Ibero American Universities in Spanish and Portuguese
- Ibero American Universities with a mobility programme that will start in 2016, following the results of the Veracruz Summit 2014
- Similar initiatives in the context of the Francophonie, Instituto Camoes (Portuguese) and Instituto Cervantes (Spanish)

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<sup>5</sup> see <http://www.em-a.eu/>

- Campus do Mar (a consortia of several Universities from Galicia (Spain) and the North of Portugal providing a joint Doctoral Programme in Marine Sciences)
- Other examples from the regions [to be added].

#### ⇒ **Action 1.1.2 Promote collaboration between UNESCO Chairs and IOC**

18. The UNESCO UNITWIN/UNESCO Chairs Programme makes a major contribution to strengthen in-country academic programme<sup>6</sup>. Launched in 1992, the UNITWIN/UNESCO Chairs Programme promotes international inter-university cooperation and networking to enhance institutional capacities through knowledge sharing and collaborative work.

19. The Programme supports the establishment of UNESCO Chairs and UNITWIN Networks in key priority areas related to UNESCO's fields of competence – i.e. in education, the natural and social sciences, culture and communication.

20. Through this network, higher education and research institutions all over the globe pool their resources, both human and material, to address pressing challenges and contribute to the development of their societies. In many instances, the Networks and Chairs serve as think-tanks and as bridge-builders between academia, civil society, local communities, research and policy-making. They have proven useful in informing policy decisions, establishing new teaching initiatives, generating innovation through research and contributing to the enrichment of existing university programmes while promoting cultural diversity. In areas suffering from a dearth of expertise, Chairs and Networks have evolved into poles of excellence and innovation at the regional or sub-regional levels. They also contribute to strengthening North-South-South cooperation.

21. There are currently 17 UNESCO Chairs related to marine science<sup>7</sup>. The IOC and UNESCO's Education Sector must collaborate more intensively to enhance marine science education capacity development.

#### **Activity 1.2 Continuous professional development**

22. The achievement of a University degree is not the end target of education. The rapid evolution in science and technology requires continuous professional development (CPD)<sup>8</sup>.

#### ⇒ **Action 1.2.1 Promote and assist with the organization of training courses, workshops and “summer schools” relevant to the IOC mandate**

23. Short-term (1-2 weeks) training courses and workshops are essential tools to ensure continuous professional development, i.e. updating or extending the expertise and knowledge of scientific or technical personnel.

6 see <http://en.unesco.org/unitwin-unesco-chairs-programme>

7 extracted from: <http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/listchairs3102014.pdf>

8 see: [http://en.wikipedia.org/wiki/Continuing\\_professional\\_development](http://en.wikipedia.org/wiki/Continuing_professional_development)

24. All IOC programmes organize short-term training courses, in response to requests formulated by Member States during sessions of primary subsidiary bodies (regional or technical). These requests are then formulated in work plans.

25. Training courses are implemented either at venues made available on an ad hoc basis by Member States, in specialized training venues (e.g. HAB Centre in Copenhagen, Denmark or IOC Project Office for IODE in Ostend, Belgium...) or in Regional Training (and Research) Centres (e.g. the IOC Regional Training and Research Centre on Ocean Dynamics and Climate, or the new IODE OceanTeacher Global Academy Regional Training Centres, International Training Centre for Operational Oceanography, Hyderabad, India (ITCOOcean)) which are described in Action 1.2.4.

26. A special type of training course is the “summer school”. A portal of summer schools is hosted by IOC<sup>9</sup>. The IOC Sub-Commission for the Western Pacific (WESTPAC) organizes a “MOMSEI Summer School”<sup>10</sup>.

27. The IOC will strengthen its global programmes and regional subsidiary bodies to expand and integrate training courses in their programmes (**see also Action 3.1.2 and Action 3.2.1**). The IOC will work with partners to enhance training courses and programmes.

28. It is important that training benefits not only the individual but also the employer institution of the trainee. The trainee selection process should therefore take into account how the training will benefit the employer institution as well as the career of the trainee.

⇒ **Action 1.2.2 Establish or collaborate with other organizations on an internship/fellowship programme (including on-board training)**

29. Internships allow scientists to work for a limited time in a different institution to gain on-the-job training. This is particularly useful when the expertise needed is not available in their own institution.

30. An important example of internship/fellowship opportunities is on-board training. While on-board, on-site experience is essential for the career of an ocean researcher, many Member States do not have a research vessel. It is therefore essential that researchers from such countries are: (i) provided on-board training to acquire the necessary skills; and (ii) are given opportunities to participate in research cruises organized within their region. Their participation may require funding support by bilateral and/or international arrangements.

31. IOC/WESTPAC organizes an internship programme<sup>11</sup>: WESTPAC offers on-the-job training opportunities for graduate and post-graduate students worldwide to enhance their academic experience through practical work assignments as a part of the internship and

9 see: <http://www.oceansummerschools.org/>

10 see: <http://iocwestpac.org/capacity-development/50.html>

11 see: <http://iocwestpac.org/capacity-development/52.html>

volunteer programme of UNESCO. Subject to submission of the application form, internship or volunteer assignments can last up to six months and are not required to enrol full-time. Interns and volunteers are incorporated in the work as junior team members under the supervision of the Head of the IOC Regional secretariat for the Sub-Commission for the Western Pacific (WESTPAC). However, remuneration and employment expectation are not offered.

32. Some partner organizations of IOC provide “scholarship/fellowship” support, such as:

- **POGO-SCOR Visiting Fellowships for Oceanographic Observations-SCOR**<sup>12</sup> has committed funds for this fellowship programme in cooperation with the Partnership for Observation of the Global Oceans (POGO). This programme is designed to promote training and capacity building leading toward a global observation scheme for the ocean. The programme is open to scientists, technicians, Ph.D.-level graduate students, and post-doctoral fellows from centres in developing countries involved in oceanographic work. It offers the opportunity for such individuals to visit other oceanographic centres for a short period (1-3 months) for training on any aspect of oceanographic observations, analyses, and interpretation. The first set of awards was made in 2001, and awards have been made annually since then.
- **POGO also runs a Visiting Fellowship Programme for on-board training on the Atlantic Meridional Transect (AMT) cruise**<sup>13</sup>. It offers the opportunity for a scientist from a developing country to participate in cruise preparation and planning, to help make hydrological, biological and ecological observations on board the ship, and to analyse and statistically interpret the results after the cruise. In 2013, a similar scheme was set up in partnership with the EU project GreenSeas to provide training on-board the Porcupine Abyssal Plain (PAP) cruise.
- POGO also contributes to funding the **Austral Summer Institutes (ASI)**, which take place at the University of Concepcion in Chile around December-January every year.

33. IOC will encourage the expansion of an internship/fellowship programme in all regions (taking into account it exists already in the WESTPAC region) and will partner with other organizations such as POGO, SCOR and others through joint programmes and activities as appropriate.

#### ⇒ **Action 1.2.3 Establish, and collaborate with other organizations on a visiting lecturer programme**

34. Visiting lecturers fill a gap of specific expertise required in a teaching or training programme or enrich existing expertise by providing on-site training and related student support services. This is applicable for developed as well as developing countries. This mechanism is complementary and further enhances IOC’s training course programme (Action 1.1.1).

<sup>12</sup> see: [http://www.ocean-partners.org/index.php?option=com\\_content&view=article&id=309&Itemid=42](http://www.ocean-partners.org/index.php?option=com_content&view=article&id=309&Itemid=42)

<sup>13</sup> see: <http://www.ocean-partners.org/training-and-education/research-cruise-training/pogo-amt-fellowships>

35. Partner organizations provide such support:

- **SCOR Visiting Scholars**<sup>14</sup>: SCOR began a programme in 2009 to enlist the services of ocean scientists from the SCOR community, from both developed countries and developing countries, both recently retired and active, to teach short courses and to provide more extended on-site education and mentorship at developing country institutions. Some countries and/or individual institutions have requirements for their scientists to retire at a given age, sometimes as early as 60 years of age. Many retired ocean scientists are still interested in teaching and mentoring, and are supported by pensions after their retirement, so do not need salary support. Some active scientists can also use some of their already-supported work time to work in a developing country.
- **POGO also runs a Visiting Professorship Programme**<sup>15</sup> under which marine scientists of international standing teach at marine institutions in the developing world for periods of up to three months. This exposes young scientists, particularly from developing countries, to the best oceanographers world-wide and facilitates the formation of professional contacts, invaluable in the development of their scientific careers.

36. IOC will promote expanded visiting lecturer programmes through collaboration with partner organizations. This action will further support Action 1.1.1.

⇒ **Action 1.2.4 Promote and assist with the establishment of regional training (and research) centres relevant to the IOC mandate**

37. Based upon the decisions of WESTPAC Member States to establish IOC Regional Training and Research Centres (IOC RTRC) and Member States involved in IODE to establish OceanTeacher Global Academy Regional Training Centres (OTGA RTCS) in existing and well established research or academic institutions, we can conclude that Member States now desire to support such a mechanism to establish a long-term and sustainable training mechanism.

38. WESTPAC (see addendum, section III) initiated the “UNESCO/IOC Regional Network of Training and Research Centres in the Western Pacific” in 2008, aiming to improve regional capability and capacity in a sustainable and systematic manner through the establishment of regional training and research centres in national oceanographic institutes or universities based on the host institution’s scientific specialization and recognition. The RTRCs shall provide training and research opportunities to young scientists, mainly from developing countries within and outside the WESTPAC region with emphasis on combined modes of face-to-face training, hands-on exercises and training-through-research. The UNESCO/IOC Regional Training and Research Centre on Ocean Dynamics and Climate (IOC RTRC-ODC) was officially established at the First Institute of Oceanography, State Oceanic Administration (FIO, SOA) of

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14 see: [http://www.scor-int.org/SCOR\\_Visiting\\_Scholars.pdf](http://www.scor-int.org/SCOR_Visiting_Scholars.pdf)

15 see: <http://ocean-partners.org/index.php/training-and-education/pogo-visiting-professorship>

China, in 2010. In addition, other RTRCs on different marine scientific areas are being developed with interested countries in the region

39. Within the framework of the International Oceanographic Data and Information Exchange (IODE) programme of the IOC, the OceanTeacher Global Academy (OTGA) project is being implemented (2015–2018). This project is promoting the establishment and supporting the operation of OTGA Regional Training Centres (OTGA RTCs) in Colombia, USA, Belgium, Senegal, Kenya, Mozambique, South Africa, India, Malaysia and China (see addendum, section III).

40. In addition to establishing such centres IOC will network these centres in order to:

- (i) enable the sharing of course materials (and their translation into languages other than the original language of its creation);
- (ii) promote student and teacher mobility;
- (iii) promote regional and inter-regional collaboration through community building.

⇒ **Action 1.2.5 Promote the sharing of training course materials**

41. The sharing of training course materials is essential to expand access to capacity development opportunities regionally and globally.

42. One mechanism, the OceanTeacher<sup>16</sup> Learning Management System (LMS) which is a tool of the OceanTeacher Global Academy is offered for use by all regional training centres for the storage, management and sharing of training contents. If so desired other systems can of course be used but these should preferably be open systems that allow the exchange (or harvesting) of content.

43. It is noted that while the OceanTeacher LMS has not been designed to function as a fully distance learning system, it could host courses that are fully delivered through distance learning. This could be useful for “update” modules (continuous professional development).

44. The IOC will seek to facilitate the online sharing of training course materials where appropriate.

**Activity 1.3 Sharing of knowledge and expertise/community building**

⇒ **Action 1.3.1 Establish a travel grant “fund”**

45. Sharing research findings and experience with peers is a crucial element in scientific research, scientific progress and capacity development. Currently IOC does not have a dedicated CD “fund” that provides travel grants to allow researchers to attend conferences and

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<sup>16</sup> <http://www.oceanteacher.org>

workshops (an exception is workshops organized by IOC). In some cases global programmes or Sub-Commissions and Regional Committees provide such travel support.

46. IOC will explore mechanisms to establish/strengthen programmes to share knowledge and expertise through travel grants, regionally and globally. Partner organizations provide such support: SCOR<sup>17</sup> established in 1984 a programme of travel awards to ocean scientists from developing countries and those with economies in transition. This programme is supported through a grant from the U.S. National Science Foundation and approximately 60 scientists are awarded full or partial travel grants each year to participate in major international ocean science meetings and short-term training programmes.

⇒ **Action 1.3.2 Establish, or collaborate with other organizations on a mentoring programme**

47. Mentoring allows young (starting) scientists to interact with experienced scientists. It can be a very efficient and effective method to transfer working experience. Mentoring works best if the mentor and mentored can work together. The IOC will explore mechanisms to develop a mentoring programme through IOC's communities of practice.

⇒ **Action 1.3.3 Promote and assist with the development of IOC alumni networks**

48. Taking into account the many years of experience of IOC in providing technical training in various regions, those who participated have become a "pool" of alumni. An alumni pool can be brought directly into the IOC communities of practice expanding the base of participants in IOC programmes and promoting networking between experts. Such a group can be of assistance to IOC: the career path of alumni can be monitored so the impact of the training can be measured. But the alumni can also feedback recommendations to IOC in order to improve the training programmes. IOC/IODE's Alumni system<sup>18</sup> allows listing students by country and by year. Linked to the OceanExpert<sup>19</sup> Directory it allows some degree of career tracking. The IOC will build an online community of alumni that have participated in IOC training activities and will establish an appropriate mechanism to maintain the system.

⇒ **Action 1.3.4 Promote and support "young scientist" awards**

49. Awards can bring community appreciation and an element of (positive) competition into the research environment. They could consist of a certificate, monetary reward, equipment, a medal, a travel/study grant or a combination of these.

50. In order to assist young scientist to dedicate themselves to marine science, and observation, the IOC Sub-Commission for the Western Pacific (WESTPAC) decided to award

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17 <http://www.scor-int.org/capacity.htm>

18 see <http://www.iode.org/alumni>

19 see <http://www.oceanexpert.net>

four prizes [Young Scientist Award<sup>20</sup>] to the young scientists at the 8th IOC/WESTPAC International Scientific Symposium (Busan, Republic of Korea, March 2011), two for the best oral presentation and two for the best poster.

51. IOC will explore mechanisms to promote and support young scientists' recognition and awards, in particular at the regional level.

#### **Activity 1.4: Gender balance**

52. Gender Equality continues to be one of two global priorities of UNESCO (Gender Equality was designated as one of two global priorities of the Organization Medium-Term Strategy, 2008–2013). This priority status is maintained for the current Medium-Term Strategy, 2014–2021. The UNESCO Priority Gender Equality Action Plan for 2014–2021 (GEAP II) provides an operational framework for the implementation of Priority Gender Equality. It explains what gender equality means for UNESCO, provides guidance on how the Organization will ensure that a gender equality perspective is reflected in all its policies, programmes and processes so that gender equality is advanced both within the institutional processes of the secretariat and its work with Member States.

53. For UNESCO, Gender Equality refers to the equal rights, responsibilities and opportunities of women and men and girls and boys. It implies that the interests, needs and priorities of both women and men are taken into consideration, recognizing the diversity of different groups of women and men. Gender equality is a human rights principle, a precondition for sustainable, people-centred development, and it is a goal in and of itself. UNESCO's vision of gender equality is in line with relevant international instruments such as the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW) and the Beijing Declaration and Platform for Action. It is also informed by the reflections concerning the post-2015 development framework.

#### **⇒ Action 1.4.1 Promoting participation of women in ocean research**

54. Member States are urged to work towards a balance between men and women in ocean research, observation and other disciplines within the remit of the IOC mandate.

55. Member States are urged to consider women and men equally in terms of training opportunities (i.e. all actions under output 1).

56. IOC will strengthen its efforts to increase women participation in IOC training courses and other capacity development activities, and monitor progress of this action through its alumni system (see action 1.3.3).

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<sup>20</sup> see: <http://iocwestpac.org/capacity-development/51.html>

## **Output 2. Access to Physical infrastructure established or improved**

57. Ocean research and observation requires substantive infrastructure including research vessels, scientific instruments, buildings, commodities (appropriate internet broadband, sustained electricity supply), etc. In addition to procurement these infrastructures are extremely costly to operate (e.g. research vessels) and to maintain. Especially for low-income economies these costs are difficult to cover and sustain. Donors can provide initial funding for procurement and operation for some time (5-10 years) but Member States should accept their responsibility for the maintenance and operation on the longer term.

58. While IOC is not in a position to finance large physical infrastructure (buildings, equipment, research vessels), IOC can assist in the enhanced access to such infrastructures at the regional level. Existing IOC global and regional programmes can encourage expanded access to and maintenance of key infrastructure for their programmes which will help broaden participation in, maintenance of, and benefits from these programmes to Member States.

59. It is recommended that these actions should be coordinated and implemented through the regional sub-commissions.

### **Activity 2.1 Facilitating access to infrastructure (facilities, instruments, vessels)**

#### **⇒ Action 2.1.1 Establishing and maintaining a register of infrastructure to facilitate access**

60. In order to have an overview of heavy research infrastructure available in Member State institutions IOC will explore the possibility to establish an online register of such infrastructures that could be made available for joint use. This should be done in consultation and collaboration with partners where available.

61. An example is the Eurofleets<sup>21</sup> project in Europe which provides a European distributed research fleet infrastructure with common strategic vision and compensatory system of access to European marine research vessels and equipment. Another European example is the ESFRI<sup>22</sup> initiative, which is a strategic instrument to develop the scientific integration of Europe and to strengthen its international outreach. The mission of ESFRI is to support a coherent and strategy-led approach to policy-making on research infrastructures in Europe, and to facilitate multilateral initiatives leading to better use and development of research infrastructures, at EU and international level. Both Eurofleets and ESFRI work on a competitive and open access basis (namely through open calls for applications). The International Ocean Discovery Program (IODP)<sup>23</sup> is an international research collaboration involving 26 countries that contribute financially to operate the IODP drilling platforms and common ships. IODP conducts seagoing

21 see: <http://www.eurofleets.eu/>

22 ESFRI: European Strategy Forum on Research Infrastructures; see [http://ec.europa.eu/research/infrastructures/index\\_en.cfm?pg=esfri](http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=esfri)

23 see <http://www.iodp.org/>

expeditions to study the history of the Earth recorded in sediments and rocks beneath the seafloor.

⇒ **Action 2.1.2 Promoting the development of, and expand access to, regional sustainable scientific infrastructure**

62. Based upon the register described above, IOC should encourage, in consultation with Member States and other organizations concerned, mechanisms (preferably regionally) for facilitating access to infrastructure and assistance of its services, and to build capacity for the utilization of such infrastructure. Where appropriate IOC may facilitate collaboration among Member States in jointly acquiring and maintaining infrastructure and in efforts mobilizing required support from other sources.

**Output 3. Global, regional and sub-regional mechanisms strengthened**

63. Scientific progress requires building of peer communities. Within the IOC context we can identify subject-specific communities (e.g. IODE, HAB, GOOS, Marine Policy and Regional Coordination,...) that are generally of global geographic focus, but also regional communities such as Regional Committees (IOCINDIO, BSRC) and IOC Sub-Commissions (IOCAFRICA, IOCARIBE, WESTPAC).

64. IOC has a long tradition of capacity development coordination and implementation through its Sub-Commissions and Regional Committees. More information is provided in addendum, section III. Targeted actions under this expected output will therefore focus mainly on the strengthening of these regional bodies and their secretariats as well as their linkages with the global programmes (enabling collaboration between different levels of communities of practice). In addition the current Global Ocean Science Report project should make a major contribution to understanding capacity needs at regional and national levels.

65. In addition to the strengthening of regional (country to country) collaboration there is a need for closer national (within the country) collaboration, especially within the context of IOC programmes. While some Member States have established national oceanographic committees or coordinating bodies for this purpose, many still have not done so. It is furthermore recommended to establish these bodies at the highest possible government level in order to ensure governmental commitment and associated resources.

66. In addition to intra-regional cooperation IOC could establish inter-regional cooperation between the Sub-Commissions and Regional Committees, in order to promote sharing of expertise, experience and knowledge.



### **Activity 3.1 *Further strengthening and supporting secretariats of regional sub-commissions***

#### **⇒ Action 3.1.1 Improve staffing of secretariat of regional sub-commissions**

67. The IOC Sub-Commission mechanism is an effective bottom-to-top governance mechanism that enables Member States to closely work together at the regional level. The mechanism is highly dependent on an efficient secretariat that ensures effective communication streams between the Member States and coordination, implementation and monitoring of activities. IOC should strengthen the secretariats of the Sub-Commissions to ensure they are adequately staffed (both in terms of staff number and competencies). It is recommended that staffing provided by IOC should be supplemented through secondments by Member States or by organizations cooperating with IOC.

#### **⇒ Action 3.1.2 Reinforcing budgeting of regional sub-commissions**

68. Taking into account the important role of the IOC sub-commissions and the fact that the majority of IOC Member States belong to one of the three sub-commissions, it is essential that the IOC operational budget adequately reinforces the sub-commissions to provide this core function to Member States. In addition sufficient extra-budgetary funding should be mobilized to enable full implementation of work plans.

### **Activity 3.2 *Enhance effective communication between regional sub-commission secretariats and global programmes as well as other communities of practice (incl. other organizations)***

#### **⇒ Action 3.2.1 Establishing an effective coordination and communication mechanism between the secretariats of the regional sub-commissions and the global programmes**

69. The “One Ocean” principle challenges the IOC and its Member States to promote an integrated approach to ocean science and management at national, regional and global levels. The IOC should enhance close interaction and communication among global and regional programmes as a requirement for successful programme implementation and capacity building, facilitated, as appropriate, through mechanisms established by the Executive Secretary.

## **Output 4. Development of ocean research policies in support of sustainable development objectives promoted**

70. There is a crucial need for targeted natural and social science research that builds our understanding of ocean processes, helps identify possible solutions to critical challenges, and provides the knowledge needed to catalyse transformational changes in human behaviour. A variety of efforts to identify ocean research priorities have been undertaken in the past at

national and regional levels, often through agency-led approaches that draw on eminent scientists for advice.

71. Understanding differences in research priorities among scientists from different disciplines and regions is particularly important given the need to provide balanced science advice to policy-makers and to bring cross-disciplinary research insights specifically to bear on cross-cutting ocean challenges.

72. The growing move toward trans-disciplinary and sustainability science is well-recognized in the environmental field and will likely become increasingly important as scientists are called on to provide various types of science advice that help address society's most pressing and complex problems.

73. Clear communication pathways and interfaces between the research and policy communities are recognized as essential tools for enhancing research and the application of science to human welfare.

74. Very few countries have developed a national marine policy or plan<sup>24</sup> which is supported by an ocean research and technology plan; in most cases, they exist as a section of the national science and technology framework but are not necessarily with national sustainable development objectives.

#### **Activity 4.1 *Sharing of information on ocean research priorities***

##### **⇒ Action 4.1.1 Compare and compile information on existing ocean research priorities among government and other organizations**

75. The IOC will compile and make available, through electronic means, the existing national (and/or regional) ocean research plans. This could be done through the GOSR (Global Ocean Science Report). Understanding the range of priorities across industry, society and government could guide scientists as to how their scientific priorities align with societal needs.

#### **Activity 4.2 *Developing national marine science management procedures and national policies***

##### **⇒ Action 4.2.1 Assist Member States with the development of marine science management procedures and national policies**

76. The IOC could promote such potential targeted actions for the development of national marine science management procedures and related policies include the following:

- Advice for national and regional marine policy making, assistance and training in the development and implementation of science-based marine strategic plans

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24 IOC CD baseline survey 2013

- Training for marine ecosystem management, marine spatial planning (MSP) and marine assessment
- Training in best practices – “proven marine technology” – related to the implementation of international agreements that have a potential to enhance national capacity to monitor and evaluate the protection and conservation of marine ecosystems. Many countries are now in the process of preparing their national marine development plans. This would give unique opportunities to align and integrate IOC’s international and regional strategies and programmes with national ones.
- Establish CD focused regional networks (Community of practices) bringing together science community and policy makers (through IOC Sub-Commissions, UNEP Regional Seas and Large Marine Ecosystems, as well as other opportunities).

## **Output 5. Visibility and awareness increased**

### **Activity 5.1 Public Information**

#### **⇒ Action 5.1.1 Promote the development of public information (communication) programmes in ocean research institutions**

77. Where ocean research is funded by governments, i.e. public funding, the spending of public funding must increasingly be justified in terms of its relevance and great value to society. It is therefore important that visibility, awareness and appreciation exists at the level of the general public as well as at the level of decision/policy makers about the importance of ocean research as a contributing element to management and decision making. Research findings must therefore not only be published in scientific journals but also be reported to the general public through appropriate communication tools. These can be newsletters, newspapers, exhibitions, open door days, World Ocean Day, etc. National institutions are therefore urged to establish public information departments and a related communication strategy. Close working relationships with media (journalists) is important. This is also linked to Ocean Literacy (see Activity 5.2). The IOC will promote the development of communication programmes in ocean research institutions.

78. Improved communication and public information and engagement will also facilitate mobilization of funds from other sources (private and public), discussed under output 6.

### **Activity 5.2 Ocean Literacy**

#### **⇒ Action 5.2.1 Foster development of an IOC ocean literacy programme as a community of practice to share experience within and across regions**

79. Better public understanding of the ocean is an important element of resolving critical environmental challenges and supporting the science and management measures that may be

required for sustainable development. Increasing ocean literacy at all levels of national, regional and local leadership will build the capacity for adaptation, enhance the resilience of vulnerable communities, promote best practices in resource management and encourage innovative solutions for a sustainable economy and disaster risk management. Leaders and citizens that have an understanding of ocean and climate science, and who can access information, will be better prepared to respond effectively to future ocean challenges. Integrated programmes of research, education and community build fundamental understanding of the importance of ocean research and coordination and elicit support for funding educational opportunities at all levels. Diverse media and formal and informal training (including virtual and distance), education and outreach are among the key ocean literacy tools. Substantial ocean literacy efforts are underway in several regions and a community of practice would facilitate sharing experience within and across regions.

80. The IOC could foster development of an IOC ocean literacy programme as a community of practice to share experience and best practices within and across regions and facilitate expanded strategic focus on public outreach and ocean literacy in ocean research institutions and public agencies and civil society. Common key messages about ocean literacy tailored appropriately to target the different audiences can serve as a founding principle of the community of practice.

## **Output 6. Sustained (long-term) resource mobilization reinforced**

81. Research is often funded by public funds. Today's environmental concerns (climate change, marine biodiversity, sea level rise, ocean acidification, tsunami warning and mitigation...) are typically long-term and require long-term monitoring and studying. This is mostly not compatible with the more short-term government timelines (4-6 years between elections). It is therefore often difficult to convince decision-makers of the need to provide long-term funding (decades) for research activities that may not produce concrete results or clear decision support guidance. An international global approach is often the only way to obtain buy-in from governments to provide long-term funding (e.g. conventions). A reinforcing factor is public awareness and support, as described above.

82. In addition to public funding the option of private funding also needs to be taken into account. Increasingly governments expect that research findings should be applicable to industry and accordingly research proposals, projects and programmes are expected to address their possible use for industrial innovation.

83. In terms of capacity development to support developing countries/regions it should be emphasized that the IOC is not a donor agency. All funds available through IOC are based upon contributions by Member States: either through the assessed contributions by UNESCO Member States to UNESCO, or through contributions by Member States to UNESCO Funds-in-Trust, through direct contributions to IOC or through other financial and in-kind mechanisms that are aimed to support IOC. In comparison to bilateral arrangements between countries,

funding provided to Member States by IOC, is usually quite small as actions are focused regionally rather than individually.

84. In order for IOC's capacity development strategy to deliver benefits to Member States at the appropriate scale (nationally, regionally, globally), substantial new resources are required. This can be achieved through: (i) IOC's resource mobilization from donors for capacity development; (ii) increased financial contributions by Member States to IOC (through the mechanisms mentioned above); or (iii) close collaboration between bilateral projects and IOC.

### **Activity 6. *In-kind opportunities***

#### **⇒ Action 6.1.1 Fostering partnerships to increase in-kind support opportunities**

85. Some Member States are offering fellowships and grants for students from other countries within the same or other regions. These may be for short-term actions (internships, on-board training and research) or for long-term actions (M.Sc., Ph.D. programmes). Other Member States may be able to provide ship time, equipment or other in-kind support, while others may be able to second staff to IOC to assist the IOC secretariat at HQ, at secretariats of Sub-Commissions or other decentralized offices. IOC should foster partnerships and facilitate exchange of information in this regard in order to increase in-kind support opportunities.

### **Activity 6.2 *Financial support by Member States to IOC activities***

#### **⇒ Action 6.2.1 Resource mobilization from Member States, Institutional and Private Sector Partners**

86. The IOC Medium-Term Strategy states that "Existing resource mobilization approaches for Member States, institutional and private sector partners, tightly linked to the priorities approved by IOC Governing Bodies and its capacities to deliver will be intensified, as will be public-private partnerships and information and visibility efforts."

87. The IOC Assembly at its 27<sup>th</sup> session in 2013 adopted a flexible approach allowing the Commission to allocate resources and implement the programme, including performance indicators and benchmarks, taking into account a set of Guiding Principles for budget allocation to maximize funding opportunities. These principles identify innovative approaches for mobilizing funding and other resources at the global and regional levels.

88. Member States have been providing support to IOC through various mechanisms detailed above. Taking into account priorities set by Member States in terms of focus countries, regions and preferred programmes, IOC will seek to mobilize financial and other resources to assist in achieving the priorities that Member States have articulated for the IOC capacity development programme.

## CONCLUSIONS

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89. The 2012 World Summit on Sustainable Development's "The Future We Want" stressed<sup>25</sup> "the importance of the conservation and sustainable use of the oceans and seas and of their resources for sustainable development, including through the contributions to poverty eradication, sustained economic growth, food security, creation of sustainable livelihoods and decent work, while at the same time protecting biodiversity and the marine environment and addressing the impacts of climate change. We therefore commit to protect, and restore, the health, productivity and resilience of oceans and marine ecosystems, and to maintain their biodiversity, enabling their conservation and sustainable use for present and future generations, and to effectively apply an ecosystem approach and the precautionary approach in the management, in accordance with international law, of activities impacting on the marine environment, to deliver on all three dimensions [ecological, economic, social] of sustainable development."

90. The IOC will use its unique strength in capacity development on ocean science, observations, and services to mainstream the contribution of ocean science and governance in sustainable development of developing countries, in particular Priority Africa and SIDS. The pillars of IOC's programme must be founded on: (i) IOC's institutional strengthening of its global programmes and regional subsidiary bodies, including reinforced staffing to maximize opportunities to serve Member State interests; (ii) heightened integration of IOC global programmes and regional subsidiary bodies to accelerate opportunities for Member State participation in and benefit from IOC engagement; (iii) new and reinforced partnerships through IOC engaging Member States and the whole of civil society; and (iv) mobilization of resources to catalyse these partnerships as the engine of capacity development.

91. Through its Decision EC-XLVII/Dec 4 (Future of the IOC), the IOC Executive Council identified some of the enabling conditions that must be met to enhance implementation of this capacity development strategy: (i) the IOC should further articulate its functional autonomy and mobilize resources; and (ii) Member States and the IOC should raise IOC's profile in the UN to better communicate its mission and capabilities, and *"enhance visibility of IOC across the marine science and marine policy sector and stimulate involvement from youth and young scientists."*

92. In its initial phase of implementation, IOC will use the integrated strengths of its Regional Subsidiary Bodies and global programmes to conduct assessments required for the subsequent implementation plan as well as a key conduit for engaging States and partners to maximize the impact of the strategy.

93. Delivering benefits at global, regional, national and individual levels requires a highly coordinated and collaborative programme within IOC, collaboration with numerous partners

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<sup>25</sup> See paragraph 158 of 'The Future We Want'.



to maximize synergies and prevent duplication, and a comprehensive communications approach to heighten engagement in the capacity development strategy. An implementation plan must mobilize the diverse strengths and address the priority requirements of different regions and Member States.

94. The IOC capacity development vision for the new biennium should be: (a) mobilized resources for Member State capacity development; and (b) a strengthened IOC institutional capacity to deliver that programme through the Commission, its Member States and partners.

95. As preliminary elements of a draft work plan it is proposed that the IOC:

- Develop programmatic and regionally relevant capacity development work plans based on this strategy and related needs assessments conducted in a consistent manner, building on on-going activities;
- Mobilize resources in order to reinforce staffing of its regional Sub-Commission secretariats other subsidiary bodies and global programmes through programme development;
- Enhance collaboration and communication between its global programmes and regional subsidiary bodies, to contribute to (a) and (b) above.

96. In the 2016–2017 biennium, IOC Member States and IOC partners are encouraged to:

- Identify new opportunities to participate in and benefit from reinforced partnerships through the IOC to achieve their capacity development goals in marine science and governance;
- Mobilize the knowledge, personnel, infrastructural and financial resources to support IOC's catalytic role in helping Member States achieve these goals;
- Communicate and raise the visibility of IOC's unique niche in capacity development.

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