INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)

Forty-ninth Session of the Executive Council
Paris, 7-10 June 2016

SUMMARY REPORT

Part 2

(Agenda items 2.5, 4.1, 4.3.1, 4.3.2 & 4.3.4)
2. ORGANIZATION OF THE SESSION

2.5 ROGER REVELLE MEMORIAL LECTURE

1. The Chair, Prof. Haugan, introduced the Roger Revelle Memorial Lecture in the context of World Oceans Day 2016 (summary and programme of the WOD is included in Annex ____).

2. The ad interim Head of IOC Ocean Science Section, Dr Henrik Enevoldsen introduced the 2016 Lecturer, Prof. Ken Caldeira and recalled that the IOC Roger Revelle Memorial Lecture was created by the Assembly in 1991 to address marine geology, geological oceanography, and institutional cooperation in these fields and in general, at the national and international levels. Roger Revelle was a pioneer in oceanography and in global ocean science cooperation and one of the founders of the IOC.

3. Prof. Ken Caldeira is a climate scientist at the Carnegie Institution for Science (USA). Professor Caldeira studies the global carbon cycle; marine biogeochemistry and chemical oceanography, including ocean acidification and the atmosphere/ocean carbon cycle; landcover and climate change; the long-term evolution of climate and geochemical cycles; and energy technology. Prof. Caldeira is one of the most influential scientists in all aspects related to the science of carbon and its impact on environment. Prof. Caldeira’s scientific work has shaped the current options of dealing with carbon including its storage, related policies and industrial solutions. He was one of the first to highlight the importance of the “other carbon problem”, the ocean acidification.

4. Prof. Caldeira delivered the 2016 IOC Roger Revelle Memorial Lecture on the theme “Status and Challenges in Ocean Acidification Research”. An abstract is included in Annex _____. Acknowledging his unique contribution to climate change science and his achievements in communicating the climate science to policymakers and the general public, the Intergovernmental Oceanographic Commission of UNESCO awarded Prof. Ken Caldeira the IOC Roger Revelle Memorial Medal 2016.

5. The IOC, on the occasion of UN World Oceans Day, used social media to effectively expand the event beyond the meeting hall to give it a wide international presence. The @locUnesco twitter handle engaged over 51,000 individuals, and the Official United Nations Twitter account (@UN) distributed IOC visuals and messages to promote World Oceans Day among its 7.2 million followers. Social media activity for IOC was also boosted by IOC Member States who sent tweets about World Oceans Day and the proceedings of the Executive Council session through the hashtags #WorldOceansDay and #EC49.

4. STRATEGIC DEVELOPMENTS

4.1 IOC CONTRIBUTION TOWARDS AGENDA 2030

4.1.1 Role of IOC in Implementation of the Agenda 2030 and Sustainable Development Goals (SDGs)

6. The IOC Executive Secretary introduced this item referring to the new 2030 Agenda for Sustainable Development adopted by United Nations Member States in 2015, and in particular the Sustainable Development Goal 14 calling to “conserve and sustainably use the oceans, seas and marine resources for sustainable development”. This new international framework constitutes an essential point of reference for IOC’s engagement with its Member States as well as for its programmatic presence at the global, regional and country levels. Several targets of SDG 14 are directly relevant to the work of IOC, particularly in the area of marine pollution, ocean acidification, ecosystem-based management, and marine research capacity and transfer of marine technology, as a cross-cutting element to all SDG 14 targets.
7. The Executive Secretary described how IOC is integrating the Agenda 2030 priorities into its programme priorities, operations and funding, to ensure that it is able to effectively support its Member States in achieving the Agenda 2030 commitments. The Governments of the Fiji and Sweden will co-host the first Triennial Conference on Oceans and Seas from 5 to 9 June 2017. Ms Lisa Svensson, representative of the Ministry of Foreign Affairs of the Kingdom of Sweden, introduced the objectives of the Conference which will act as a high-level global platform whereby governments and all relevant stakeholders for SDG 14, including the United Nations system, international and regional organizations, and other stakeholders. Together they can engage constructively and build partnerships, assess progress made and gaps remaining in meeting agreed targets of SDG 14, and provide recommendations on setting benchmarks for future actions with the objective of ensuring full implementation of SDG 14. She highlighted the importance of science focused organizations, such as IOC, in providing the necessary capacity and coordination for attaining SDG 14 at the national level through mapping, assessment and evaluation of marine resources. She encouraged the IOC and its Member States to make a robust contribution to the Conference through the Partnership dialogue and voluntary commitments process that will be established prior to and during the conference.

8. The Executive Council appreciated the strategic orientation identified in Document IOC/EC-XLIX/2 Annex 4 and as presented by the Executive Secretary. Member States expressed interest in establishing a process to identify the contribution of IOC major programmes and subsidiary bodies to the implementation of the SDGs, and reflect these contributions into future strategic documents of the Commission. The need to support Member States in implementing the SDG 14 through the development of indicator-based methodological guidance and science-based information for policy-makers was considered a priority. This should be achieved through coordination and cooperation amongst programmes and regional subsidiary bodies.

9. The representatives of 18 Member States took the floor. The following Member States chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Argentina, Australia, Brazil, China, India, Indonesia, Japan, Kenya, Norway, Philippines, Republic of Korea, Thailand, Turkey and USA.

10. The Executive Council adopted Decision EC-XLIX, Dec. 4.1 (I) below.

IOC Contribution Towards Agenda 2030

I.

The Executive Council,

Having considered document IOC/EC-XLIX/2 Annex 4,

Takes note and welcomes the active role played by the Commission in the formulation and adoption by the United Nations of a set of Sustainable Development Goals (SDG) as part of the Agenda 2030, and in particular, among others, of a dedicated SDG for the ocean (SDG 14);

Emphasizes the role of ocean sciences and related capacity development as cross-cutting means of implementation to all SDG targets;

Further takes note of the organization of the first United Nations Triennial Conference on Oceans and Seas from 5 to 9 June 2017, in Fiji, to be hosted by the Governments of Fiji and Sweden;

Considers that the IOC has an essential role to play in supporting Member States in the attainment of the ocean-related SDG, particularly in areas related to: (i) capacity development and the transfer of marine technology; (ii) the provision of normative support
to countries to establish, implement, monitor and report on implementation of the Ocean SDG and targets relevant to IOC area of work; (iii) the provision of science-based policy advice for the conservation and sustainable use of the ocean;

Requests the IOC Executive Secretary to contribute to the organization of the United Nations Triennial Conference on Oceans and Seas; and to report the outcome to the Assembly at its 29th session in 2017;

Requests also that the IOC Officers, supported by the secretariat, consider the IOC contribution to the Sustainable Development Goals in ongoing intersessional work on the Future of the IOC Executive Roadmap (IOC/EC-XLIX/2 Annex 9 Rev.), with a view to incorporating these contributions in a fully developed and integrated document with recommendations for adoption by the Assembly at its 29th session in 2017.

4.1.2 IOC SIDS Action Plan: A Follow-up to the UN Conference on Small Island Developing States SAMOA Pathway Outcome Document

11. The Head of the Marine Policy and Regional Coordination Section (MPR), Mr Julian Barbière, presented this item. The outcome document of the Third International Conference on SIDS (1-4 September 2014), also referred to as the “SIDA Accelerated Modalities of Action (SAMOA) Pathway” (A/RES/69/15), was adopted by consensus at the 69th session of the United Nations General Assembly. The SAMOA Pathway provides a renewed set of priorities for the international community to support SIDS in their efforts to achieve sustainable development. Within the scope of IOC programmatic activity, the Pathway notably calls for actions to: provide SIDS with technical assistance for early warning systems; promote Disaster Risk Reduction and post-disaster response and recovery; develop the technological capacity of SIDS in marine science; promote the conservation, sustainable use and management of marine resources; and enhance cooperation to address the causes of ocean acidification and minimize its impacts.

12. He recalled that the UNESCO Executive Board adopted at its 196th session the UNESCO SIDS Action Plan (2016-2021) in line with the priorities set out in the SAMOA Pathway. A related implementation strategy was prepared and endorsed by the UNESCO Executive Board at its 198th session. Representing UNESCO’s engagement in the implementation of the SAMOA Pathway, the Action Plan and Implementation Strategy proposes a set of objectives and follow-up actions to address challenges faced by SIDS in five priority areas corresponding to the UNESCO Major Programmes, including the IOC. Document IOC/EC-XLIX/2 Annex 5 highlights specific IOC actions within the UNESCO SIDS Action Plan and Strategy, as well as related performance indicators and targets to be achieved in the current biennium. It also provides elements on resource mobilisation through the formulation of SIDS actions under the Complementary Additional Programme and IOC Capacity Development fund, as well as SIDS specific extra-budgetary proposals.

13. Member States expressed support for the implementation of the IOC SIDS actions, within the broader UNESCO SIDS Action plan. They recalled the important role of IOC Regional Subsidiary Bodies in providing a collaborative marine science cooperation framework to engage SIDS scientists in the implementation of IOC global and regional programmes. Some Member States highlighted the opportunity to align the SIDS agenda with the implementation of SDG 14 and the development of blue economy, and called for further extra-budgetary support for technical assistance to SIDS.

14. The WMO representative recalled the establishment of a WMO SIDS and Member Island Territories Programme which converges with the priorities of the IOC SIDS Action Plan. He offered to support collaboration, whenever relevant, especially through initiatives such as the Climate Risk Early Warning Systems (CREWS), the Global Framework for Climate Services (GCFS) and the Coastal Inundation Forecasting Demonstration Projects (CIFDP) in Fiji and the Caribbean.
15. The representatives of six Member States took the floor. The following Member States and organization chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Australia, Japan, Republic of Korea, Turkey and WMO.


**IOC Contribution Towards Agenda 2030**

II. IOC SIDS Action Plan

The Executive Council,

Having considered document IOC/EC-XLIX/2 Annex 5,

Recognizes IOC’s role in contributing to the implementation of SIDS SAMOA pathways particularly in areas related to climate change, disaster reduction, ocean science and observation, capacity development and marine technology transfer;

Takes note of the IOC SIDS Action Plan and related implementation strategy;

Invites IOC Member States to establish a wide range of partnerships to implement the IOC Action Plan for SIDS, as a contribution to the implementation of the Samoa Pathway;

Invites further all Member States and relevant organizations and institutions to draw on this Action Plan with a view to furthering commitment to the sustainable development of SIDS, when developing their own priorities;

Requests that the IOC Officers, supported by the secretariat, consider the IOC contribution to the SAMOA Pathway in ongoing intersessional work on the Future of the IOC Executive Roadmap (IOC/EC-XLIX/2 Annex 9 Rev.), with a view to incorporating these contributions in a fully developed and integrated document with recommendations for adoption by the Assembly at its 29th session in 2017.

4.1.3 Developments of the IOC Science Programme and Emerging Challenges

17. The ad interim Head of the Ocean Science Section (OSS), Dr Henrik Enevoldsen, introduced this item. The development of the Ocean Science programme of IOC pursues science in support of sustainability of ocean ecosystems in a changing environment according to EC-XLV/Dec.4.4 on the Report of the Ad hoc Advisory Group on Ocean Sciences Section (IOC/INF-1294, 2012).

18. Dr Enevoldsen presented initiatives and proposed terms of reference for corresponding three OSS working groups: (i) the IOC International working Group for Marine Time Series (IGMETS) to be continued; (ii) a new IOC working group to investigate Climate Change and Global Trends of Phytoplankton in the Ocean (TrendsPO), in particular the coastal ocean; and (iii) a new IOC working group for the Global Ocean Oxygen Network (GO\textsubscript{2}NE). These initiatives were presented as constituting an intensified effort to distinguish between natural and human-induced earth system variability through analysing possible impacts and consequences on certain marine ecosystems and marine life in general.

19. Member States expressed strong support for the three new initiatives and acknowledged the preparation activities presented by Dr Enevoldsen as providing a strong basis. IGMETS was recognized to be a successful example of international collaboration with highly appreciated products. China expressed its intent to support and engage in TrendsPO and several Member States expressed explicit intent to engage in the new initiatives. The Executive Council noted the complementarity of the OSS working groups’ priorities and activities to existing organizations, which will continue with enhanced coordination and linkages.
20. The Executive Council stressed the importance that each group coordinate and cooperate with GOOS and that this be reflected in the Terms of Reference (ToRs) of all three working groups. Responding to concerns that each group develop data development plans in accordance with the IOC Data Exchange Policy, relevant amendments of the draft ToRs concerning data policy were also accepted.

21. The representatives of 12 Member States and three observers took the floor. The following Member States and organization chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Australia, Canada, China, India and PICES.

22. The Executive Council adopted Decision EC-XLIX, Dec. 4.1 (III) below.

**IOC Contribution Towards Agenda 2030**

**III. Developments of the IOC Science Programme and Emerging Challenges**

The Executive Council,

Having examined document IOC/EC-XLIX/2 Annex 6,

Recognizing that the biological, physical and chemical characteristics of the ocean vary across a range of temporal and spatial scales, and at the same time are influenced by anthropogenic forcing (warming, acidification, pollution, etc.),

Recognizing further the need for an intensified effort to distinguish between natural and human-induced earth system variability, and to analyse the possible impacts and consequences on certain marine ecosystems and marine life in general which is in line with EC-XLV/Dec.4.4,

Acknowledging past and ongoing projects and working groups led by GLOBEC, SCOR, and ICES to stress the importance of ship-based time series measurements, phytoplankton assessments and oxygen deficiency in the ocean to explain the impacts of climate change, ocean acidification, eutrophication and deoxygenation on marine habitats,

Decides to:

(i) continue the International Working Group for Marine Ecological Time Series (IGMETS) with the TORs as defined in Annex 1 hereto;

(ii) establish the IOC Working Group to investigate Climate Change and Global Trends of Phytoplankton in the Ocean (TrendsPO) with the TORs as defined in Annex 2 hereto;

(iii) establish the IOC Global Ocean Oxygen NEtwork (GO2NE) and the associated core working group with the TORs as defined in Annex 3 hereto.

Annex 1 to Decision EC-XLIX/4.1 (III)

**IGMETS Terms of Reference**

(i) Encourage time series principal investigators, who were hesitant to contribute to IOC technical series, 129, to engage in and support the multiple-time-series-analysis; as this will also increase the value of their own measurements;

(ii) Improve the open access platform, which allows to use the IGMETS analysis for further research and publication, including time-series metadata (the so-called visualizer);

(iii) Produce a second status report following on the results published in the IOC technical series, 129. This report identified pressing scientific questions which require more in-depth analysis (for example regional seasonal patterns);
(iv) Produce peer-reviewed scientific articles which will give the opportunity to highlight the new methodology used in the IGMETS analyses, together with new insights obtained during the production of the first and second report;

(v) Align with existing networks and activities, in particular with GOOS, JCOMM, GOA-ON, OBIS, IOC-HAB, GoNe, ICES working groups, PICES, OCB, NOAA, sMARINE, IOCCP, and GEOBON. Mobilize communities of practice to improve collaboration;

(vi) Develop a communication strategy to facilitate international recognition of the importance of ship-based ecological time series, and the information loss resulting from spatial and temporal gaps of measurements of already established observation sites;

(vii) Develop a data management plan and data access plan in accordance with respectively, the “Guidelines for a Data Management Plan” (IOC Manuals and Guides No. 73) and the principles of clause 1 (for IOC programmes) of the IOC Data Exchange Policy including close cooperation with OBIS to identify data sets available and suited for inclusion in OBIS. This plan also involves close collaboration with the development of the Global Data Assembly Centres for ocean biogeochemistry (GDAC-OBG) and will ensure that data generated by related research projects are encouraged to be archived in the IODE network of National Oceanographic Data Centres (NODCs), if appropriate;

(viii) Seek out more collaborators from under represented regions to contribute relevant data and knowledge to this global effort;

(ix) The working group will be composed of: (i) experts serving in their individual capacity, based on scientific merit and taking into consideration geographical and gender balance; (ii) a member of the IOC Secretariat. The WG will elect its Chair and Vice-chair.

Annex 2 to Decision EC-XLIX/4.1 (III)

TrendsPO Terms of Reference

(i) Identify, collect and analyze existing long time series (at least 10 years) of phytoplankton data in coastal oceans and large freshwater ecosystems around the world. This work will be coordinated with other regionally-focused plankton time series efforts to prevent duplication of effort. For example, TrendsPO will coordinate with the ICES Working Group on Phytoplankton & Microbial Ecology (WGPME);

(ii) Develop a data management and access plan in accordance with respectively, the "Guidelines for a Data Management Plan" (IOC Manuals and Guides No. 73) and the principles of clause 1 (for IOC programmes) of the IOC Data Exchange Policy;

(iii) Encourage the permanent and secure electronic archival of individual data sets (as well as data generated by related research projects in the IODE network of National Oceanographic Data Centres (NODCs) and OBIS nodes and/or the World Ocean Database (WODB);

(iv) Develop a GIS platform to collect phytoplankton data in the literature and generate the biogeography for various phytoplankton species. It is expected that various tropical and sub-tropical species will migrate north or south, depending on the hemisphere as surface warming occurs, similar to terrestrial species migrations that are already occurring;

(v) Produce a small working prototype of data sharing, based on the existing data archive to demonstrate the value of sharing data through an international database;

(vi) Develop common statistical methodologies for global comparisons for within-region and within-time-period data summarization (e.g. spatial, seasonal and annual averaging, summation within taxonomic and functional group categories).
The goal is to clarify what level of detail provides the optimal trade off (e.g. information gain vs processing effort);

(vii) Based on the above, and in consultation with the GOOS Bio-Eco Panel and IGMETS to assess the observed spatial and temporal scales of variability of key variables (e.g. phytoplankton, zooplankton, nutrients, and oxygen) to use this knowledge to design a global monitoring system capable of detecting major changes in pelagic ecology and for more detailed statistical re-analysis of existing data sets;

(viii) Examine new methods and the feasibility for monitoring of phytoplankton species such as imaging and automatic recognition and the molecular approaches (e.g. HTS);

(ix) Carry out a global comparison of phytoplankton time series using (in parallel) a diverse suite of statistical methods;

(x) Seek out more collaborators from under represented regions to contribute relevant data and knowledge to this global effort;

(xi) The working group will be composed of: (i) experts serving in their individual capacity, based on scientific merit and taking into consideration geographical and gender balance; (ii) a member of the IOC Secretariat. The WG will elect its Chair and Vice-chair.

Annex 3 to Decision EC-XLIX/4.1 (III)

**GO2NE IOC core working group Terms of Reference**

(i) Produce a technical brief summarizing the threat of deoxygenation to marine ecosystems;

(ii) Produce peer-reviewed scientific articles reviewing existing scientific data sets, to identify similarities and differences between marine ecosystem sensitivity towards deoxygenation and to create a meta-data analysis to detect the mechanisms behind taxa-specific adaptation capacities;

(iii) Support related capacity development and scientific analyses to close existing thematic and geographical knowledge gaps, including the potential links between deoxygenation and human welfare;

(iv) Evaluate existing measurement methods/strategies and develop recommendations for future measurements and management strategies with regard to decreasing oxygen content in the ocean;

(v) Align with the activities of existing networks and working groups, in particular with GOOS, JCOMM, GOA-ON, IGMETS, IOC-HAB;

(vi) Develop a communication strategy to facilitate international recognition of deoxygenation and the related threats to ocean health;

(vii) Develop a data management plan and data access plan in accordance with, respectively, the “Guidelines for a Data Management Plan” (IOC Manuals and Guides No. 73) and the principles of clause 1 (for IOC programmes) of the IOC Data Exchange Policy and collaborate with OBIS to identify data sets available and suited for inclusion in OBIS and facilitate that data generated by related research projects are archived in the IODE network of National Oceanographic Data Centres (NODCs);

(viii) The working group will be composed of: (i) multidisciplinary experts serving in their individual capacity, based on scientific merit and taking into consideration geographical and gender balance; (ii) a member of the IOC Secretariat. The WG will elect its Chair and Vice-chair.

4.1.4 IOC Participation in the Second International Indian Ocean Expedition

23. The Executive Secretary introduced this item, as Co-Chair of the Second International
Indian Ocean Expedition (IIOE-2) Steering Committee, a role shared with Dr Peter Burkill (SCOR: Scientific Committee on Oceanic Research) and Dr Satheesh Shenoi (IOGOOS: Indian Ocean Global Ocean Observing System).

24. As per Resolution XXVIII-1 of the IOC Assembly at its 28th session, the IOC IIOE-2 Interim Planning Committee (Group of Experts) completed its work in producing an IIOE-2 Implementation Strategy, released on 4 December 2015, the same day as the formal launch of the IIOE-2 in Goa, India.

25. Furthermore, the two Nodes of the IIOE-2 Joint Project Office (JPO) have been established and are operational: Australia, based in Perth at the IOC Perth Programme Office, led by the IOC IIOE-2 Coordinator, Nick D’Adamo; and India, based in Hyderabad at ESSO-INCOIS, Ministry of Earth Sciences, led by Rajan Sivaramakrishnan. The relative roles and responsibilities of the respective JPO Nodes are specified in the IIOE-2 Implementation Strategy (IPC, 2015). The IIOE-2 website (http://www.iioe-2.incois.gov.in/), hosted by the India JPO Node, was launched on 4 December 2015 covering all aspects of IIOE-2. The India based JPO will host an IIOE-2 Regional Coordination Unit for Data and Information Management. The JPO Nodes have jointly implemented a range of advocacy and liaison actions with existing and prospective IIOE-2 stakeholders to build the IIOE-2 constituency across all of its facets.

26. The Steering Committee co-Chairs and JPO leaders have communicated regularly in 2016 to progress the IIOE-2. Under the auspices of the co-Chairs a full Steering Committee is in the process of being populated with members, as specified in the Implementation Plan. Advisories via the three co-sponsors of the IIOE-2 (IOC, SCOR and IOGOOS) have been disseminated calling for nominations for the Executive Level of the Steering Committee, including to IOC regional intergovernmental bodies and committees, as per Resolution XXVIII-1.

27. A number of IIOE-2 research cruises have now been completed, and a growing number of committed and likely cruises for 2016-2020 have been brought to the attention of the Steering Committee. These cruises have been designed and implemented to provide capacity-development opportunities for stakeholders from other than just the host country.

28. Varied capacity development initiatives have already begun to be implemented and others are in the process of being planned, including actions in regards to the emergence of the IIOE-2 Early Career Scientists Network.

29. The IIOE-2 website elaborates and provides further detail on progress in IIOE-2. More information is also provided in the Executive Secretary’s report (IOC/EC-XLIX/2 Annex 1).

30. The Chair noted his appreciation of the work and success of the IIOE-2 planning group and assumed universal support by the Council for this statement. The Member States’ interventions echoed the enthusiasm for IIOE-2 in many statements of activities and engagement in all aspects of the IIOE-2. Member States highlighted the importance of IIOE-2 to advancing the science of the Indian Ocean, kick starting sustained observation systems, significant technology transfer and offering tangible and immediate benefits of capacity development. Several noted that the model of IIOE-2 and new technologies demonstrated could be transferable for great benefit to other regional programmes.

31. Thailand and Japan requested clearer guidance and timeline for ensuring wider participation and better contribution of the IOC and especially WESPAC Member States in meeting the IIOE-2 objectives. In response to this request the Executive Secretary instructed the Secretariat to consult the WESTPAC countries and agree on further actions, such as calling for Member States to nominate experts to the science themes and working groups of IIOE-2. The IOC Executive Secretary also urged Member States to engage with the IIOE-2 Steering Committee in the process of nominating and supporting participants.
32. The representatives of 11 Member States and two organizations took the floor. The following Member States and subsidiary body chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Australia, China, Indonesia, Japan, Republic of Korea, Thailand, Turkey, United Kingdom and GEBCO.

33. The Executive Council adopted Decision EC-XLIX, Dec. 4.1 (IV) below.

**IOC Contribution Towards Agenda 2030**

**IV.**

**IOC Participation in the Second International Indian Ocean Expedition**

The Executive Council,

Recalling Resolution XXVIII-1 formalizing IOC’s role in establishing the Second International Indian Ocean Expedition (IIOE-2) in co-sponsorship with the Scientific Committee on Oceanic Research (SCOR) and the Indian Ocean Global Ocean Observing System (IOGOOS),

Reaffirms the importance of the IIOE-2, not only for Member States but for the whole world, as a catalyst project linking Indian Ocean processes to the global ocean and atmosphere,

Acknowledges with appreciation:

(i) the final output of the IIOE-2 IOC Interim Planning Committee (Group of Experts), being the IIOE-2 Implementation Strategy dated 4 December 2015;

(ii) the support of India, SCOR and IOGOOS for the launch of the IIOE-2 in Goa, India, 4 December 2015;

(iii) the establishment and resourcing of two Nodes of the IIOE-2 Joint Project Office through the generous support, respectively, of India and Australia, and in the same context the respective designations of the IOC’s IIOE-2 Coordinator (Australia JPO Node) and Director of the India JPO Node;

(iv) the work of the IIOE-2 Steering Committee Co-Chairs and JPO in progressing the establishment of the IIOE-2 Steering Committee;

Appreciates the early engagement of Member States in supporting the objectives of the IIOE-2 across its objectives, as per the IIOE-2 Implementation Strategy, such as early research cruises in 2015 and 2016 and related capacity development elements associated with those cruises,

Urges Member States to commit adequate resources as cash using available IOC funding mechanisms or in-kind, to support JPO functions, the work of the Steering Committee and implementation of the IIOE-2 Science Plan;

Encourages IOC Member States, IOC Regional Subsidiary Bodies, including Member States of IOCINDIO, and other relevant organizations to propose, coordinate and promote research projects to implement IIOE-2 science priorities, noting the Eastern Indian Ocean Upwelling Research Initiative and emerging Western Indian Ocean Upwelling Research Initiative;

Urges the Steering Committee and JPO to continue to build synergies among existing regional initiatives and programmes, including those already planned or underway.

**4.3 FOLLOW-UP TO THE PARIS CLIMATE CHANGE CONFERENCE, 2015 AND OTHER UN OCEAN-RELATED PROCESSES**
4.3.1 Follow-up to the Paris Climate Change Conference, 2015

34. The Chair of IOC, Prof. Peter Haugan, outlined the general scope and elements of the Paris Agreement on Climate Change, main outcome document of the 21st Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC). He highlighted links between IOC programmatic activities and the Agreement text, including references to “oceans”, “sinks and reservoirs of greenhouse gases”, “research”, “systematic observations”, and “early warning systems”.

35. He also presented a global stocktake of IOC’s mobilization of Member States, scientific and civil society stakeholders in preparation for and during COP 21, such as the World Oceans Day (8 June 2015) at UNESCO Headquarters and several high-level ocean events; three flagship events and exhibits hosted in the civil society zone of the Bourget to mobilize and build ocean and climate awareness among the general public (garnering near 1,000 attendees, 80,000 twitter visualizations); and IOC’s contributions in ocean observation at the UNFCCC’s Subsidiary Body for Scientific and Technological Advice (SBSTA).

36. He concluded with a call for strong IOC engagement in the implementation of the Paris Agreement, particularly in the context of the UNFCCC capacity-building and technology transfer mechanisms, areas where IOC enjoys competitive advantage in supporting Member States. In light of the decision by the Intergovernmental Panel on Climate Change (IPCC) in April 2016 to launch a Special Report on climate change, oceans and the cryosphere, Prof. Haugan highlighted IOC’s potential programmatic contribution and technical assistance to the preparation of the IPCC Special Report.

37. Member States commended the engagement of the IOC in the implementation of the Paris Agreement and thanked the IOC Secretariat for its commitment to raising the issue of ocean and climate at COP21 and to leveraging partnerships for a stronger institutional visibility despite constrained resources. In the context of the follow-up to the COP21, Member States requested IOC to: participate in the IPCC Special Report on Climate Change, Oceans and the Cryosphere, including through the provision of technical assistance; to provide support and technical assistance to Member States toward implementation of the Paris Agreement; and to pursue accreditation to the Green Climate Fund as a means of unlocking the necessary resources. Member States also emphasized the need for IOC to work on ocean and climate issues in an intersectoral manner within UNESCO, particularly with a view to touching on critical elements of the UNESCO mandate, such as ethics and education, which are also relevant to the climate change regime.

38. The Draft Decision was submitted to the Council with minor amendments, which sought to harmonize the Decision’s text with language from the Paris Agreement.

39. The representatives of ten Member States and one Observer took the floor. The following Member States and organization chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Argentina, Germany, Japan, Kenya and WMO.

40. The Executive Council adopted Decision EC-XLIX, Dec. 4.3 (I) below.

**Follow-up to the UN Paris Climate Change Conference, 2015 and other UN Ocean-related Processes**

The Executive Council,

Having considered document IOC/INF-1334 on the outcome of 21st session of the Conference of the Parties (COP 21) to the United Nations Framework Convention on Climate Change (UNFCCC) and its possible implications for IOC activities and programmes,
I. Follow-up to the UN Paris Climate Change Conference, 2015

Recalls UNESCO’s 38 C/Resolution 21 and 197 EX/Decision 45 on UNESCO and global action on climate change;

Welcomes the conclusions of the UNFCCC COP 21 held in Paris in 2015, at which the Parties to the UNFCC committed “to reach global peaking of greenhouse gas emissions as soon as possible, so as to hold the increase in the global average temperature to well below 2°C and to pursue efforts to limit the temperature increase to 1.5°C above preindustrial levels, according to UNFCC principles and in light to national circumstances”;

Welcomes also the decision by the Intergovernmental Panel on Climate Change (IPCC) to launch a Special Report on climate change, oceans and the cryosphere in order to improve knowledge on the ocean and inform scientifically sound ocean policy;

Takes note of the IOC relevant contributions as presented in document IOC/INF-1334;

Requests the IOC Executive Secretary to translate these priorities within existing IOC activities and programmes related to climate change, in accordance with the relevant SDGs as outlined in Agenda 2030 in order to assist Member States in the implementation of the Paris Agreement;

Further requests the IOC Executive Secretary, to provide technical and scientific assistance, as requested, in support of the IPCC Special Report on climate change, oceans and the cryosphere, within the existing IOC programmes;

Invites Member States to make voluntary financial contributions to that end;

Requests that the IOC Officers, supported by the secretariat, consider the IOC contribution to the Paris Agreement / UNFCCC in ongoing intersessional work on the Future of the IOC Executive Roadmap (IOC/EC-XLIX/2 Annex 9 Rev.), with a view to incorporating these contributions in a fully developed and integrated document with recommendations for adoption by the Assembly at its 29th session in 2017.

4.3.2 Follow-up to World Ocean Assessment-I and other Assessment Processes

41. The Head of the Marine Policy and Regional Coordination Section (MPR), Mr Julian Barbière, provided an overview of the main developments that have taken place leading to the finalization of the first report of the World Ocean Assessment under the UN Regular Process, which was adopted by the United Nations General Assembly through resolution A/70/235 in December 2015. He also recalled the decisions of the United Nations Ad Hoc Working Group of the Whole that met from 7 to 10 September 2015 to compile and consider the lessons learned in the course of the first cycle implementation and to launch a second cycle of assessment in 2016. The IOC Secretariat has shared its views with the co-chairs of the Ad Hoc Working Group on how the WOA’s process could be improved. The next meeting of the Ad Hoc Woking Group (3-9 August 2016), will define the scoping process of the next WOA (2016-2020) as well as modalities of implementation. He also highlighted the recent decision of the Intergovernmental Platform for Biodiversity and Ecological Services at its fourth plenary session (February 2016, Kuala Lumpur, Malaysia) to include the open ocean in the scope of the global assessment on biodiversity and ecosystem services.

42. The Secretariat also provided information on the completion of the GEF Transboundary Waters Assessment Programme, specifically the open ocean and Large Marine Ecosystems assessments led by IOC which was presented in May 2016 at the GEF International Water Conference (9-13 May 2016, Colombo, Sri Lanka).

43. Member States expressed their appreciation for the role the IOC played in supporting the implementation of the 1st cycle of the Regular Process and echoed the views of the
Secretariat with regards to lessons learned in completing the 1st World Ocean Assessment (WOA) report. Specifically, Member States highlighted: (i) the need to improve communication aspects in order to increase the participation of Member States in the meeting of the Ad Hoc Working Group and ensure wider engagement of the scientific community in the Pool of Experts, and in the preparation and review of the WOA report; (ii) the importance of regional workshops in contributing to the scoping process of the WOA report, as well as the standardization of data collection and indicators development to assess trends across regions; (iii) the potential role of IOC Regional Subsidiary bodies in facilitating the WOA regional workshops in partnership with other regional science and environmental organisations; (iv) the establishment of participative and transparent review mechanism for all WOA outputs; and (v) the need to increase the role and participation of UN and non-UN technical bodies in supporting the activities of the Regular Process.

44. The representatives of 9 Member States took the floor. The following Member States chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Australia, China, Japan and Norway.

45. The Executive Council adopted Decision EC-XLIX, Dec. 4.3 (II) below.

Follow-up to the UN Paris Climate Change Conference, 2015 and other UN Ocean-related Processes

II. Follow-up to World Ocean Assessment-I and other Assessment Processes

The Executive Council,

Welcomes the technical and scientific support provided by the Commission in the course of the first cycle of the World Ocean Assessment;

Takes note of document IOC/INF-1335;

Requests the IOC Executive Secretary to provide technical and scientific support to the second cycle of the Regular Process in accordance with the guidance of the Ad Hoc Working Group of the Whole;

Urges IOC Member States to express their views at the next Ad Hoc Working Group of the Whole meeting (3-9 August 2016, United Nations Headquarters) particularly on the scoping, expert nomination, Group of Experts working procedures, engagement of UN and non-UN technical and scientific organizations, and communication process of the second cycle of assessment;

Welcomes the leading role of the Commission in the conduct of the GEF Transboundary Water Assessment Programme – TWAP (Marine components); and

Encourages the Commission to continue to support the scientific assessments of the ocean as a mean to improve the science-policy interface.

[4.3.3 Cf. Part 3 of Draft Summary Report]

4.3.4 IOC Co-sponsorship of the Global Climate Observing System (GCOS): Revised Memorandum of Understanding

46. The Director of the WMO-ICSU-IOC-UNEP Global Climate Observing System (GCOS), Dr Carolin Richter, introduced this item. GCOS responds to the needs of Member States for comprehensive, continuous, reliable climate and climate-related data and information: for climate monitoring, research, and projections, and increasingly to assess climate impacts, monitor the effectiveness of mitigation, support adaptation, develop climate information
services, and promoting sustainable development.

47. Dr Richter recalled that the results of a comprehensive independent review of GCOS (GCOS-181) was presented to the IOC Assembly at its 28th session in 2015, taking into account new developments and increased attention to climate change, and making recommendations for the programme. GCOS was also preparing the submission of a new Implementation Plan to the UNFCCC in 2016, following the submission of a Status Report on the sustained observing system for climate to the UNFCCC at its COP-21 Paris Conference in 2015 (GCOS-194 and GCOS-195).

48. Dr Richter further recalled that Decision IOC-XXVIII/7.1.2 reaffirmed the IOC commitment to continue as a sponsor of the Global Climate Observing System, and requested the Executive Secretary to work with the other sponsors of GCOS in revising the existing Memorandum of Understanding based on the recommendations of the review. The draft revised Memorandum of Understanding for GCOS (IOC/INF-1335) was developed in consultation with the executive heads of all sponsoring organizations (WMO, IOC/UNESCO, UNEP, ICSU) and with the advice of the WMO legal counsel.

49. The Executive Council expressed strong support for GCOS, noting the important role of sustained ocean observations in addressing climate challenges, and enumerating their contributions to climate observations.

50. The representatives of seven Member States took the floor. The following Member States chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Canada, Chile and Japan.

51. The Executive Council adopted Decision EC-XLIX, Dec. 4.3 (IV) below.

**Follow-up to the UN Paris Climate Change Conference, 2015 and other UN Ocean-Related Processes**

**IV. IOC Co-sponsorship of the Global Climate Observing System (GCOS): Revised Memorandum of Understanding**

The Executive Council,

*Having considered* documents IOC/EC-XLIX/2 Annex 7 and corrigendum,

*Approves* the revised Memorandum of Understanding for the WMO-IOC-UNEP-ICSU Global Climate Observing System (GCOS); and

*Requests* the Executive Secretary to sign the MoU along with the executive heads of the three other sponsoring organizations (WMO, UNEP, ICSU).