World Meteorological Organization
Organisation météorologique mondiale

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Weather • Climate • Water
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Our ref.: SG/CER/BUR-IOC

GENEVA, 14 April 2015

Annex: 1

Subject: Results of the Joint WMO Bureau – IOC Officers Meeting

Dear Sir/Madam,

I am pleased to bring to the attention of Members and the presidents of technical commissions the results of the meeting between the WMO Bureau and the Officers of the Intergovernmental Oceanographic Commission (IOC) of UNESCO. The joint meeting was held on 28 January 2015 following the seventy-third session of the Bureau and focused on challenges, needs and opportunities for a strategic cooperation between WMO and IOC

I trust you will find this summary useful in the light of the importance of the collaboration between the meteorological and oceanographic communities to enhance observations, research and services in areas of common interest for the benefit of Members. If you have any questions or concerns, please do not hesitate to contact me.

Yours faithfully,

(D. Grimes)
President of WMO

To: Permanent Representatives (or Directors of Meteorological or Hydrometeorological Services of Members of WMO (PR-6840)

cc: Presidents of technical commissions (for information)

World Meteorological Organization

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

# JOINT WMO BUREAU-IOC OFFICERS MEETING

**Informal consultative mechanism**

**Geneva, 28 January 2015**

## SUMMARY

## 1. OPENING

1. The WMO President, Mr David Grimes, and the IOC Chairperson, Dr Sang-Kyung Byun, opened the Joint Consultation Meeting of the WMO Bureau and IOC Officers on Wednesday, 28 January 2015 at 9h00 at the MO headquarters in Geneva. They welcomed all participants and congratulated Dr Vladimir Ryabinin, Senior Scientific Officer of WCRP, as the newly appointed IOC Executive Secretary, to take up service on 1 March 2015.

2. The WMO President and the IOC Chairperson expressed satisfaction with the resumption of the Joint Consultation Meeting. They recalled that the last meeting was held in Paris at the IOC headquarters on 27 January 2010 and that the joint meeting had been established as a high-level informal consultation mechanism to address challenges, needs and opportunities for a strategic cooperation between WMO and IOC.

## 2. ORGANIZATION OF THE MEETING

3. The agenda was adopted as given in Annex I.

4. The list of participants to the meeting is given in Annex II.

## 3. REVIEW OF THE STATUS OF COOPERATION UNDER EXISTING SCHEMES

### *(a) WMO-IOC Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM)*

5. The meeting agreed that the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) represents an essential mechanism for cooperation between the oceanographic and the marine meteorological communities. It agreed that WMO and IOC should continue to work together through the Global Ocean Observing System (GOOS), the International Oceanographic Data Exchange Programme (IODE) and JCOMM to achieve sustained ocean observations for both IOC and WMO objectives, and that cooperation between oceanographic institutions and National Meteorological and Hydrological Services (NMHSs) should be emphasized in JCOMM services activities. The meeting considered that the JCOMM in situ Observations Programme Support Centre (JCOMMOPS) is an important resource for both IOC and WMO, and that cooperative administrative arrangements for its functioning should be pursued. The meeting further agreed that regular coordination meetings should continue to be held between the WMO and IOC Secretariat Officers, as well as JCOMM co-presidents, in charge of JCOMM.

### *(b) Global Climate Observing System (GCOS) and (c) Global Ocean Observing System (GOOS)*

6. The meeting considered the importance of the Global Climate Observing System (GCOS) in informing the process of the United Nations Framework Convention on Climate Change (UNFCCC), and that continued strong cooperation between the Global Ocean Observing System

(GOOS) and GCOS should be sustained to support understanding of climate variability and climate change. In this regard, the meeting encouraged alignment of GCOS and GOOS workplans where appropriate, and agreed that the Memorandum of Understanding between WMO and IOC concerning GCOS is an important enabling instrument and that its revised version should be finalized. The meeting further agreed that financial contributions from WMO and IOC regarding GOOS and GCOS should be reciprocated. In addition, the meeting agreed that cooperation with the co-sponsors of the three observing systems (including the Global Terrestrial Observing System – GTOS) and the Group on Earth Observation (GEO) should be revitalized and that a common strong approach to observing systems between WMO and IOC should be taken to the appropriate fora, such as GEO, UNFCCC, UN SDG process, etc.

### *(d) World Climate Research Programme (WCRP)*

7. The meeting acknowledged that the partnership between WMO and IOC in the World Climate Research Programme (WCRP) remains strong, and that WCRP activities in the areas of sea level rise (ocean heating, ice melting, land subsidence and atmospheric storm surges) or on changes in the northern hemisphere storm tracks (ocean circulation, atmospheric winds, sea ice loss, land snow cover), reflect the complexity and interactions among the major components of the planet – ocean, atmosphere, land and ice. Among recent cooperative activities, WCRP has completed several specific tasks in partnership with IOC related to the Trans-Boundary Waters Assessment Programme. The WCRP grand challenges gain prominence as guiding principles throughout climate science: as the structural background for CMIP6 (Climate Model Intercomparison Project), the organizing themes for multiple conferences and as priority topics for partner programmes. The meeting considered that WCRP exists as an equal and independent partner to Future Earth. WCRP and IOC explored a mutual initiative with Future Earth focused on ocean health but the partnership has stalled as Future Earth undergoes leadership transitions. In relation to polar research, WCRP is launching a Polar Challenge to reward the first team able to send an Autonomous Underwater Vehicle (AUV) for a 2000 km mission under the sea ice in the Arctic or Antarctic. The ultimate aim is to demonstrate a sorely-needed monitoring tool for the Polar Regions to expand scientific research capabilities and climate services in both the Arctic and Antarctic. Finally, the meeting considered the potential contribution of WCRP and the upper-atmosphere research community, in particular the Indian Ocean Panel of CLIVAR, in the Second International Indian Ocean Expedition (IIOE-2).

### *(e) Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)*

8. The meeting acknowledged the close cooperation of WMO with the ocean community in the context of GESAMP Working Group 38 (Atmospheric Input of Chemicals to the Ocean) and the recent work of IOC in Working Group 40 (Microplastics). The meeting agreed on the usefulness of GESAMP as a joint body for scientific advice to policymakers.

### *(f) UN-Oceans*

9. The meeting considered the role of UN-Oceans as an interagency mechanism to exchange information on ocean affairs that is complemented by other more targeted initiatives for technical cooperation.

## 4. AREAS IN WHICH COOPERATION COULD BE STRENGTHENED

### *(a) Global Framework for Climate Services (GFCS)*

10. The meeting considered the important contribution given by IOC to the Observations and Monitoring pillar of the Global Framework for Climate Services (GFCS) and that the experience developed by IOC and WMO through the preparation of guidelines for coastal hazards (sea level rise, coastal erosion, coastal inundation) and climate adaptation for policymakers and local

managers could be further expanded in the context of the coastal and marine components of the Water and Disaster Risk Reduction Exemplars. In particular, coastal megacities could represent a strong potential test case for climate services and IOC and WMO could explore opportunities for funding of joint project proposals on the development of climate services for coastal regions. At the regional level, further opportunities for collaboration could arise in the context of the Africa Climate Research for Development (CR4D) Strategy, including through the identification of experts from the marine communities for the Advisory Panel. The meeting emphasized the importance of institutionalizing the involvement of IOC and UNESCO to the GFCS through the participation in the Partner Advisory Committee, which would facilitate the engagement of IOC subsidiaries bodies (e.g., IOCAFRICA) and communities in national and regional climate services workshops and linkages with regional centres of excellence (e.g. African Centre of Meteorological Application for Development – ACMAD).

### *(b) GHG concentration and ocean acidification*

11. The meeting acknowledged the positive collaboration between WMO and IOC on the subject of greenhouse gases and ocean acidification, with the inclusion of an insert on ocean acidification, prepared by IOC and IAEA, in *WMO Greenhouse Gas Bulletin 2013*. Such collaboration on the technical side and for the dissemination of results can be effective in delivering information on ocean acidification to policymakers. Additional coordination and collaboration between atmospheric and marine research communities can be undertaken in the areas of quality assurance/comparability of data, data and expertise sharing, development of network extension on atmospheric and oceanic concentrations of $CO_2$ and their impacts on biodiversity and marine ecosystems, in collaboration with GOOS and external bodies such as the North Pacific Marine Science Organization (PICES) and International Council for the Exploration of the Sea (ICES) and other research networks and projects (Scientific Committee on Oceanic Research – SCOR, Integrated Marine Biogeochemistry and Ecosystem Research – IMBER, Surface Ocean - Lower Atmosphere Study – SOLAS).

### *(c) Competencies in oceanography and marine meteorology*

12. The meeting acknowledged the importance of documenting that all relevant processes from physical measurements in observations to forecasts and warnings issued to all user and customer groups are undertaken within a sound Quality Management Framework (QMF), with appropriate recognition of the continuing research nature of many of the ocean observations and services. The meeting agreed on the importance of sharing information and collaborating in regional training workshops and the provision of technical assistance to Members, for example in the areas of coastal inundation and marine forecasting.

## 5. NEW AREAS IN WHICH COOPERATION COULD BE INITIATED

### *(a) Operational oceanography*

13. The meeting agreed that operational oceanography, while not clearly defined in the United Nations Convention on the Law of the Sea, is an area in which the oceanographic and meteorological communities have a strong interaction. The meeting acknowledged the importance of integrating data from ocean observations in the WMO Information System (WIS) and the contribution of JCOMM to the WMO Global Data Processing and Forecasting System (GDPFS). The meeting further agreed on the importance of advocating among Members sustained or operational funding for metocean observations for both in situ and remote sensing observations, including from space. At present such funding comes largely from research agencies. Availability of additional sustained funding sources would serve as a major enabler and condition for further development and increased use of operational ocean models, which should continue to develop in a strong partnership with research communities.

### *(b) Geoengineering*

14. The meeting recalled that the WMO Commission for Atmospheric Sciences (CAS), at its sixteenth session (2013), acknowledged that the rapid increase in interest in geoengineering warrants for the Commission to advise the Seventeenth World Meteorological Congress on a suitable position on this subject and that further research is needed to adequately understand the feasibility, the effectiveness and side effects of geoengineering. The need for a coherent science view on geoengineering calls for a joint platform for addressing the science aspects, strengthening the interaction between the atmospheric and oceanographic research communities and taking into account the assessment being undertaken by the Intergovernmental Panel on Climate Change (IPCC). The meeting noted that at present the ocean fertilization can only be regulated on the basis of IMO resolutions on marine pollution, and that for preventing the deployment of geoengineering activities both in the ocean and especially in the atmosphere, the absence of adequate international regulations could be a major handicap.

### *(c) Capacity development*

15. The meeting agreed that the demand for capacity development is high both in WMO and IOC in terms of human capacity, infrastructure and technology and institutional development and that lessons learned from the experience of WMO Regional Training Centres in addressing technical deficiencies could be usefully shared with the IOC community. The meeting also agreed that there is scope for cooperation between the WMO Education and Training Programme and its proposed Global Campus initiative and IOC capacity development initiatives, in particular IODE OceanTeacher and Global Academy. Cooperation could be fostered also at the grassroots level, facilitating access to catalogues of oceanography and marine meteorology courses at universities as well as technical courses. The meeting further agreed on the opportunity to seek complementarities between WMO and IOC at the level of their capacity development strategies and implementation plans, with a view to fill possible gaps, and to explore possible joint applications for projects to funding sources (e.g. GEF funding for GFDRR).

## 6. RELATIONS WITH CO-SPONSORS AND OTHER ENTITIES

16. The meeting agreed on the need to revitalize coordination with and engagement of co-sponsors of observing systems (ICSU, UNEP, FAO), taking into account the different roles of specialized, science- and technology-oriented agencies such as WMO and IOC and UN organizations that are primarily users of scientific and technical information. The meeting recalled the cooperation with UNEP in the areas of modelling and assessments, the Regional Seas, and PROVIA, an emerging contributor to climate services on vulnerability, impacts and adaptation, with a potentially important ocean component. Both WMO and IOC have strong relations with ICSU and these will be further strengthened in the context of Future Earth, in particular in relation to the independent contribution of WCRP to the Dynamic Planet research theme and more broadly through the participation in the Science and Technology Alliance for Global Sustainability. Regarding GEO, the meeting agreed on the opportunity of resuming coordination for a joint UN statement at GEO Governing Council as well as to explore the possibility of requesting a UN seat in the GEO Council.

## 7. JOINT CONTRIBUTION TO GLOBAL PROCESSES

### *(a) Post-2015 development agenda*

17. The meeting recalled that both UNESCO and WMO have contributed to the Open Working Group on Sustainable Development Goals through the Technical Support Team, UNESCO as co-lead in Education and Ocean and WMO as co-lead in Climate Change. Both Organizations advocated the importance of investments in observing systems, scientific information for decision-making and technology transfer, and agreed to collaborate to support Members in the definition of targets and indicators for Sustainable Development Goals in their areas of competence.

### *(b) Post-2015 framework for DRR*

18. The meeting reviewed the potential joint contribution to the post-2015 framework for disaster risk reduction and the Third World Conference on Disaster Risk Reduction. In particular, WMO and IOC will participate in working sessions on early warning, the definition of targets and indicators for the framework, and the preparation of a report on the state of standardization of early warning and risk information, co-led with UNDP. The meeting agreed on the importance of the technical collaboration between WMO and IOC in the reduction of coastal risks (e.g. Tsunami Early Warning and Mitigation Systems; Coastal Inundation Forecasting Demonstration Project; Severe Weather Forecasting Demonstration Project etc.).

### *(c) UNFCCC COP 21*

19. The meeting agreed on the opportunity for WMO and IOC to raise attention to the importance of the atmosphere-ocean interaction in climate change (ocean acidification, sea level rise and extreme events, etc.), including through the participation in the scientific conference "Our Common Future under Climate Change" (Paris, 7–10 July 2015), the celebrations for World Oceans Day 2015 (8 June 2015) and the IOC "Ocean and Climate Platform". The meeting further agreed on the need to support COP 21 delegates with scientific information through WMO and IOC information products (*Statement on the status of the global climate*, *Greenhouse gas bulletin* etc.).

### *(d) SAMOA Pathway*

20. The meeting recalled the voluntary partnerships launched by WMO and IOC on the occasion of the Third United Nations Conference on Small Island States (GFCS-SIDS, IOC training centres in Colombia, Samoa and Kenya, research networks in ocean acidification) and agreed that WMO and IOC have a potential to cooperatively support SIDS in the implementation of the SAMOA Pathway, according to the UN Implementation Matrix given in Annex III, in particular in the areas of climate change, disaster risk reduction, oceans and seas, food security and nutrition and technology.

## 8. REGIONAL PERSPECTIVES

21. The meeting considered that the interaction and collaboration between marine research and meteorological communities could be strengthened particularly on the regional level and agreed that the WMO and IOC Secretariat share the calendars of events of their subsidiary bodies and in particular WMO Regional Associations and Regional Climate Outlook Forums and IOC Sub-Commissions and GOOS Regional Alliances, with a view to ensure reciprocal participation of Secretariat staff and national experts.

## 9. ANY OTHER BUSINESS

22. The meeting did not consider any other business.

## 10. CONCLUSIONS, RECOMMENDATIONS AND FOLLOW-UP

23. The meeting agreed that the Joint Consultative Meeting between the WMO Bureau and the IOC Officers could be held every two years, alternating the venue. The meeting further agreed that the summary of the meeting should be made available as an information document to the World Meteorological Congress and the IOC Assembly and that a small joint Secretariat team should be formed to follow-up on the recommendations.

## 11. CLOSURE

24. The WMO President and the IOC Chairperson closed the meeting at 17h00.

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Annexes: 3

**ANNEX I**

# AGENDA

**1. OPENING**

**2. ORGANIZATION OF THE MEETING**
Agenda and Timetable
List of participants

**3. REVIEW OF THE STATUS OF COOPERATION UNDER EXISTING SCHEMES**
(a) JCOMM
(b) GCOS
(c) GOOS
(d) WCRP
(e) GESAMP
(f) UN-Oceans

**4. INITIATIVES AND AREAS IN WHICH COOPERATION COULD BE STRENGTHENED OR ENHANCED**
(a) GFCS
(b) Greenhouse gas concentration and ocean acidification
(c) Competencies in oceanography and marine meteorology

**5. NEW AREAS IN WHICH COOPERATION COULD BE INITIATED**
(a) Operational oceanography
(b) Geoengineering
(c) Capacity development

**6. RELATIONS WITH CO-SPONSORS AND OTHER ENTITIES**
(a) UNEP
(b) ICSU
(c) GEO
(d) Future Earth

**7. JOINT CONTRIBUTION TO GLOBAL PROCESSES**
(a) Post-2015 development agenda
(b) Post-2015 framework for disaster risk reduction
(c) UNFCCC and COP 21
(d) SAMOA pathway

**8. REGIONAL PERSPECTIVES**

**9. ANY OTHER BUSINESS**

**10. CONCLUSIONS, RECOMMENDATIONS AND FOLLOW-UP**

**11. CLOSURE**

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**ANNEX II**

## LIST OF PARTICIPANTS

**WMO Bureau**

President: David Grimes

Second Vice-President: Mieczyslaw Ostojski

Third Vice-President: Abdalah Mokssit

Secretary-General: Michel Jarraud

**IOC Officers**

Chair: Sang-Kyung Byun

Vice-chairs:

- Peter M Haugan
- Atanas Palazov
- Frederico Antonio Saravia Nogueira
- Yutaka Michida
- Adote Blim Blivi

Past-chair: Javier Valladares

**WMO Secretariat**

Deputy Secretary-General: Jerry Lengoasa

Assistant Secretary-General: Elena Manaenkova

Director of Cabinet and External Relations: Christian Blondin

Chief, Marine Meteorology and Oceanography: Edgard Cabrera

Executive Assistant to the Secretary-General: Stefano Belfiore

**IOC Secretariat**

IOC Management Team:

- Thorkild Aarup
- Julian Barbiere
- Albert Fischer
- Peter Pissierssens

Operational Support Unit: Ksenia Yvinec

Senior Scientific Officer, WCRP and future IOC Executive Secretary: Vladimir Ryabinin

Advisors to WMO President: Mr B. Angle and Ms H. Aucoin

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**ANNEX III**

# EXTRACT FROM THE SAMOA PATHWAY: UN SYSTEM IMPLEMENTATION MATRIX

| *Paragraph* | *UN entities* | *Partnerships* |
|---|---|---|
| **Climate change** | | |
| 44. We call for support for the efforts of small island developing States:<br>(a) To build resilience to the impacts of climate change and to improve their adaptive capacity through the design and implementation of climate change adaptation measures appropriate to their respective vulnerabilities and economic, environmental and social situations; | IFAD<br>UNEP<br>**WMO**<br>UNIDO<br>UNCTAD<br>**UNESCO**<br>UNISDR<br>UNDP<br>UN Women<br>WFP | UNEP Global Adaptation Network (GAN)<br><br>WMO GFCS-SIDS |
| (b) To improve the baseline monitoring of island systems and the downscaling of climate model projections to enable better projections of the future impacts on small islands; | IFAD<br>**WMO**<br>**UNESCO**<br>UNSISDR<br>UN Women<br>WFP | WMO GFCS-SIDS |
| (c) To raise awareness and communicate climate change risks, including through public dialogue with local communities, to increase human and environmental resilience to the longer-term impacts of climate change; | IFAD<br>**WMO**<br>**UNESCO**<br>UNISDR<br>UN Women<br>WFP | WMO GFCS-SIDS |
| **Disaster risk reduction** | | |
| 52. In consideration of the special case of small island developing States and their unique and particular vulnerabilities, we are committed to supporting their efforts:<br>(a) To gain access to technical assistance and financing for early warning systems, disaster risk reduction and post-disaster response and recovery, risk assessment and data, land use and planning, observation equipment, disaster preparedness and recovery education programmes, including under the Global Framework for Climate Services, and disaster risk management; | UNEP<br>UN-Habitat<br>**WMO**<br>**UNESCO**<br>UNISDR<br>UNDP | WMO GFCS-SIDS |
| **Oceans and seas** | | |
| 58. With this in mind, we strongly support action:<br>(c) To implement fully and effectively the regional seas programmes in which small island developing States participate; | UNEP<br>**WMO**<br>**UNESCO** | [JCOMM] |
| **Food security and nutrition** | | |
| 63. In this regard, we are committed to working together to support the efforts of small island developing States:<br>(f) To enhance the resilience of agriculture and fisheries to the adverse impacts of climate change, ocean acidification and natural disasters; | IFAD<br>**WMO**<br>UNIDO<br>WFP<br>IAEA<br>[**UNESCO**] | |
| **Technology** | | |
| 111. In this regard, we reaffirm our commitment to support the efforts of small island developing States to gain access, on mutually agreed terms, to appropriate, reliable, affordable, modern and environmentally sound technologies and know-how and to increase connectivity and the use of information and communications technology through improved infrastructure, training and national legislation, as well as public and private sector involvement. | ITU<br>UNEP<br>**WMO**<br>UNCTAD<br>**UNESCO** | UNEP Global Partnership on Waste Management (GPWM) |
| **Data and statistics** | | |
| 115. Furthermore, we call upon the United Nations, the specialized agencies and relevant intergovernmental organizations, in accordance with their respective mandates:<br>(c) To elaborate appropriate indices for assessing the progress made in the sustainable development of small island developing States that better reflect their vulnerability and guide them to adopt more informed policies and strategies for building and sustaining long-term resilience and to strengthen national disaggregated data and information systems as well as analytical capabilities for decision-making, the tracking of progress and the development of vulnerability-resilience country profiles. | DESA in collaboration with UN system<br>UNEP<br>**WMO** | WMO GFCS-SIDS |