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INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (of UNESCO)

INFORMATION DOCUMENT

COMPILATION OF RELEVANT REFERENCES RELATED TO THE WORK OF IOC (2004-2007)

UN General Assembly Resolutions (2004–2006)

Reports of the UN Secretary-General, Oceans and the law of the sea (2004–2007)

Food and Agriculture Organization of the United Nations (2007)

World Meteorological Organization (2007)

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1. UN GENERAL ASSEMBLY RESOLUTIONS

1.1 UNGA RESOLUTION A/61/222 (2006)

126. *Welcomes* the work done by the secretariats of relevant United Nations specialized agencies, programmes, funds and bodies and the secretariats of related organizations and conventions to enhance inter-agency coordination and cooperation on ocean issues, including through UN-Oceans, the inter-agency coordination mechanism on ocean and coastal issues within the United Nations system;

127. *Encourages* continued updates to Member States by UN-Oceans regarding its priorities and initiatives, in particular with respect to the proposed participation in UN-Oceans;

1.2 UNGA RESOLUTION A/60/30 (2005)

106. *Welcomes* the work done by the secretariats of relevant United Nations specialized agencies, programmes, funds and bodies and the secretariats of related organizations and conventions to enhance inter-agency coordination and cooperation on ocean issues, including through UN-Oceans, the inter-agency coordination mechanism on ocean and coastal issues within the United Nations system;

107. *Encourages* continued updates to Member States by UN-Oceans regarding its priorities and initiatives, in particular with respect to the proposed participation in UN-Oceans;

1.3 UNGA RESOLUTION A/59/24 (2004)

94. *Urges* the close and continuous involvement in UN-Oceans of all relevant United Nations programmes, funds and the specialized agencies and other organizations of the United Nations system and the participation of international financial institutions, relevant intergovernmental and other organizations, as well as the Authority and the secretariats of multilateral environmental agreements.

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2. FAO. XXVII Session of the Committee on Fisheries (COFI) (5–9 March 2007)

Implementing the ecosystem approach to fisheries, including deep-sea fisheries, marine debris and lost and abandoned gear

i. Urged FAO to complete and distribute the **technical guidelines on social, institutional and economic considerations in EAF** as quickly as possible (para. 73).

ii. **Supported** a proposal that FAO should undertake a scoping study to identify the key issues on **climate change and fisheries**, initiate a discussion on how the fishing industry can adapt to climate change, and for FAO to take a lead in informing fishers and policy makers about the likely consequences of climate change for fisheries (para. 76).

iii. Agreed that FAO should convene an expert consultation, no later than August 2007, to prepare draft technical guidelines including standards for the management of deep-sea fisheries in the high seas, to be finalized at a technical consultation in January or February 2008; agreed that the technical guidelines should include standards and criteria for identifying vulnerable marine ecosystems beyond areas under national jurisdiction and the impacts of fishing activities on such ecosystems, in order to facilitate the adoption and the implementation of

conservation and management measures by RFMO/As and flag States (pursuant to paragraphs 83 and 86 of the UNGA Resolution A/RES/61/105) and **noted** that a meeting of States engaged in high sea deep-seas fisheries was referred to in paragraph 89 of the UNGA Resolution (para. 77).

iv. **Agreed** that the issue of **derelict fishing gear** is particularly relevant to FAO and **requested** FAO to consult with IMO in its efforts to assess current international instruments or measures related to **marine debris** (para. 78).

v. Encouraged FAO to complete its technical guidelines on the design, implementation and testing of MPAs in relation to fishing at the earliest opportunity (para. 79).

vi. **Agreed** that FAO should, in cooperation with relevant bodies, develop **best practice guidelines** to assist countries and RFMOs in implementation of the **IPOA-Seabirds** and that the best practice guidelines should be extended to other relevant fishing gears (para. 80).

vii. Agreed that FAO should continue its work on **biodiversity mapping** as an important contribution to implementation of EAF in collaboration with CBD and **agreed** that FAO should follow the request in: (i) paragraph 90 of the UNGA Resolution to create a **global database on vulnerable marine ecosystems in areas beyond national jurisdiction**, in cooperation with other relevant organizations such as IUCN, and (ii) paragraph 87 of the Resolution to create a **list of authorized vessels engaged in high seas deep-sea fisheries** (para. 81).

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3. REPORTS OF THE SECRETARY GENERAL

3.1 REPORT OF THE SECRETARY GENERAL (A/62/66) (2007)

VIII. Marine science and technology

A. Ocean observing programmes

93. Global Ocean Observing System. The Intergovernmental Oceanographic Commission (IOC) has continued the development of the Global Ocean Observing System. Much of the implementation of the Observing System takes place through the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology. The second session of the Joint Commission in 2005 set a workplan for operational oceanography and marine meteorology for the next four years 2005-2009. In executing the plan, in 2006 the global drifting buoy array reached its design goal of 1,250 buoys in sustained service, thus being the first component of the Observing System to be completed. In addition, more than 2,700 Argo profiling floats have been deployed since initiation of the project in 2001 and a substantial number of sea level stations upgraded to real time data delivery in support of tsunami warning systems. The IOC International Oceanographic Data and Information Exchange has recently been tasked by the IOC Assembly to directly support the development of the System and the international scientific programmes of IOC and WMO by providing advice and ocean data management services.

94. The global module of the Global Ocean Observing System is at the same time the ocean component of the Global Climate Observing System, which serves the sustained observing needs of the United Nations Framework Convention on Climate Change. This module is designed to improve weather and climate forecasting, monitoring and research, as well as serve as the foundation for global operational oceanography. The Global Ocean Observing System incorporates existing operational elements, and is expanding by developing pre-operational pilot projects to demonstrate utility and cost-effectiveness; building capacity for developing countries; stimulating and enabling research; and interacting with users to determine the most useful products. The Global Ocean Observing System Scientific Steering Committee will meet in June 2007 to examine

activities related to the Global System; the implementation of the coastal module of the System; and the coordinated implementation of operational elements of the System.

95. Operational oceanography and the IOC Advisory Body of Experts on Oceans and the Law of the Sea. Since 2004, the Advisory Body has been invited by the IOC Assembly to address the legal regime within UNCLOS that is applicable to the collection of oceanographic data "operational oceanography". It is generally agreed that acquiring widespread and increased knowledge and data about oceans and sea that may assist in understanding oceanic and climatic processes and in predicting and mitigating natural disasters, through operational oceanography, is of benefit to mankind. A lack of legal clarity creates uncertainty which may result in human losses and be very costly in economic terms. Thus the Advisory Body has been examining how to define operational oceanography in view of the rapid development of technologies used for ocean observing programmes (see sect. VIII.C below); and how to develop practical guidelines based on the relevant provisions of UNCLOS provisions related to marine scientific research with a view to facilitating and promoting operational oceanography.

96. The General Assembly, in its resolution A/61/222, noted the work of the Advisory Body on this issue and its efforts to develop a consensual text on the legal framework for the collection of oceanographic data within the context of the Convention. The seventh session of the Advisory Body is scheduled to be held in Libreville, from 19 to 23 March 2007.

B. Early warning systems

97. Since July 2006, the Indian Ocean Tsunami Warning and Mitigation System is equipped with networks of detection composed of 28 tide gauges broadcasting data in real time, 26 seismic stations and four deep ocean pressure sensors.68 The Warning System, which is coordinated by an IOC Intergovernmental Coordination Group (see A/60/63/Add.2, para. 101), is presently being set up with a network of 28 national tsunami centres, which are responsible for issuing warnings in their territories, communicating with the local authorities, the media and the population at risk. However, 20 of the participating countries have yet to develop national plans for tsunami early warning and response systems. These systems are needed for an effective national infrastructure. In order to assist member States of the Intergovernmental Coordination Group/Indian Ocean Tsunami Warning and Mitigation System in the implementation of end-to-end tsunami warning systems at the national level, the Global Consortium on Tsunami Recovery was established and is coordinated by the International Strategy for Disaster Reduction secretariat through its Platform for the Promotion of Early Warning, in close cooperation with UNESCO/IOC. Operational leadership will be provided by the International Strategy for Disaster Reduction system partners at the country level.

98. In addition to the Indian Ocean effort, IOC coordinates and supports the establishment of tsunami early warning systems for the Mediterranean, Northeastern Atlantic and adjacent seas and for the Caribbean. IOC also continues with updating the System in the Pacific Ocean (ibid., para. 102) and preparations for a coordination mechanism on the global scale.

C. Recent developments in marine technology

102. The Ocean Tracking Network, a proposed \$168 million project, has received an initial \$35 million from Canada to use computer tags implanted in fish, mammals and even crabs in conjunction with lines of inexpensive subsea receivers in all the world's oceans to monitor marine life and ocean conditions. The Network is a part of the 10-year long Census of Marine Life. The system will function via a number of means including an extensive array of seafloor acoustic receivers, satellite receivers and by the electronic tags intra-communicating. The receivers will report information on the location of the animals and local marine conditions including water temperature, salinity and light conditions that the animal encounters. The Network has undergone pilot deployment off British Columbia as the Pacific Ocean Shelf Tracking Project, where researchers tracked salmon stocks, and the data they collect are being used in quota

assessments. The Network will be expanded, and is planned to have 5,000 sensors spanning 14 ocean regions covering the entire planet and tracking up to a million animals. The project is projected to include some 60 research institutions worldwide as well as international organizations such as IOC.

IX. Marine biological diversity

B. Diversity between and among marine species

257. In response to decision VIII/21 of the Conference of the Parties to the Convention on Biological Diversity,¹⁸⁶ the secretariat of the Convention on Biological Diversity has made available on its website preliminary information on research activities related to open ocean and deep sea environments.²⁰⁷ Work on biogeographic classification systems in deep and open oceans is also ongoing.²⁰⁸

<u>Notes:</u>

The report of the meeting is contained in document UNEP/CBD/COP/8/31, annex I.

- 207 See http://www.biodiv.org/programmes/areas/marine/research.shtml.
- 208 A Scientific Experts' Workshop on Biogeographic Classification Systems in Open Ocean and Deep Seabed Areas Beyond National Jurisdiction, co-sponsored by the National University of Mexico, Mexico's National Commission for the Knowledge and Use of Biodiversity, IOC, the UNESCO's Division on Ecological and Earth Sciences and IUCN-The World Conservation Union and with the financial support of the Governments of Australia, Canada and the JM Kaplan Fund, was held in Mexico City, from 22-24 January 2007.

XIII. Climate change

C. Developments in other forums

335. On 20 December 2006, the General Assembly adopted a resolution calling on States to work cooperatively towards achieving the objective of the Framework Convention, and strongly urging States to ratify the Kyoto Protocol. Six United Nations agencies and programmes recently launched the "Nairobi Framework", a plan to support developing countries to participate in the Clean Development Mechanism, and UNDP and UNEP are embarking on an initiative to help developing countries factor climate change into national development plans. Work continues on the international ocean carbon coordination project of IOC and the Scientific Committee on Oceanic Research, which aims at developing a global cooperative network of ocean carbon observations, including by compiling field programmes for the Arctic and Antarctic regions related to ocean carbon research observing programmes. IOC will also be implementing a GEF/UNDP project in West Africa on adaptation to coastal and climate change. A similar project is also being developed in the North Indian Ocean region.

3.2 REPORT OF THE SECRETARY GENERAL (A/61/63 Add.1) (2006)

197. The Oceans and Coastal Areas Network (UN-Oceans), the inter-secretariat mechanism for the coordination of United Nations activities related to oceans and coastal areas established in October 2003 by the United Nations System Chief Executives Board for Coordination, held its fourth meeting on 9 June 2006.110 As agreed at the first UN-Oceans meeting, the Division, as the organizing secretariat, provided secretariat services for the fourth meeting.

198. UN-Oceans has been pursuing its coordination work through task forces on (a) post-tsunami response; (b) the regular process for the global reporting and assessment of the state of the marine environment, including socio-economic aspects; (c) biodiversity in marine areas beyond national jurisdiction; and (d) the second intergovernmental review of the Global Programme of Action. The posttsunami task force members contributed to the IOC international coordination meeting for the development of a tsunami warning and mitigation system in the Indian Ocean, held

in Paris in March 2005, and identified specific areas of expertise to advance the implementation of such a warning system. Moreover, under the leadership of the Global Programme of Action and the World Bank, the post-tsunami task force developed "Twelve guiding principles for charting environmentally sound coastal rehabilitation", initially presented to Governments at a UNEP meeting in Cairo in 2005. The guiding principles are being further refined and will be published by UNEP with case studies for review by the affected countries and international organizations in 2006.

199. Inasmuch as UN-Oceans task forces are ad hoc and time-bound, it was decided to discontinue the task force on post-tsunami response, especially since posttsunami response work was being carried out by the Office for the Coordination of Humanitarian Affairs, the International Strategy for Disaster Reduction and WMO. Similarly, it was decided to discontinue the task force on the regular process since General Assembly resolution 60/30, which had launched the start-up phase, the "assessment of assessments" with a two-year time frame, had designated IOC and UNEP as the lead agencies of the regular process. Accordingly, there did not appear to be a need for the continuation of the task force, which would duplicate the work of the secretariats of the lead agencies.

200. At the fourth meeting of UN-Oceans, the members of UN-Oceans agreed to the proposal for the Division for Ocean Affairs and the Law of the Sea and the secretariat of the Convention on Biological Diversity UN-Oceans task force on marine biodiversity beyond national jurisdiction. The Division would coordinate the work relating to the tools available within the international and regional legal regimes for the conservation and sustainable use of biodiversity, while the secretariat of the Convention on Biological Diversity would continue to coordinate the work relating to the global distribution of biodiversity (including genetic resources) in marine areas beyond national jurisdiction, as the status of that biodiversity and the threats that it is under.

201. As for the United Nations Atlas of the Oceans, it had been developed and maintained under the supervision and editorial responsibility of UN-Oceans, with FAO as the project director. The project had received financial support (a United Nations Foundation grant) and contributions in kind from a core group of United Nations entities and from the United States National Oceanic and Atmospheric Administration and other national partners. However, the funds had been exhausted more than a year earlier and appeals from FAO for financial contributions had largely failed. FAO made clear at the fourth meeting that without a minimum costsharing arrangement by the United Nations system, the future of the Atlas was in doubt. As the Chief Executives Board's High Level Committee on Programmes was planning to review the work of UN-Oceans, it was agreed to seek the Committee's support, in particular, for the Atlas. The High Level Committee on Programmes commended UN-Oceans for the Atlas and strongly urged that the initiative be financially supported to ensure its continuation. The Chairman of the Committee agreed to bring the issue of funding for the Atlas to the attention of the Chie Executives Board, which met on 7 April 2006 in Madrid under the chairmanship of the Secretary-General. The conclusions of the Board noted "a very positive assessment" by the Committee of the work of UN-Oceans and the United Nations Atlas of the Oceans and invited all concerned agencies and organizations to provide financial support by the end of 2006. FAO emphasized that without substantial financial support the Atlas would close in early 2007.

3.3 REPORT OF THE SECRETARY GENERAL (A/60/63 Add.2) (2005)

115. The second meeting of the Oceans and Coastal Areas Network (UN-Oceans) was held at United Nations Headquarters on 2 and 3 June 2005. It was attended by representatives from IMO, UNDP, UNEP, the Department of Economic and Social Affairs and the Division for Ocean Affairs and the Law of the Sea of the Secretariat, IOC, the World Bank and the International Seabed Authority. The Coordinator of the Network informed the meeting about its newly established website (www.un-oceans.org). The representatives discussed the content, purpose and further development of the website as well as other outreach tools. As regards the work programme, it

was agreed that the Network would continue to focus on the topics identified at the first meeting, which are the subject of four time-bound task forces, so as to maximize inter-agency coordination and cooperation. In this connection, the inter-secretariat character of the Network's task forces was underscored. In view of the uncertainty regarding the funding of the United Nations Atlas of the Oceans, a web-based information system (www.oceansatlas.org), the Network agreed to seek financial support from Member States and organizations, while continuing to function as its "managing group". The meeting was briefed by the Secretary of UN-Water, another inter-agency coordinating mechanism, on its activities and practices, which might be beneficial for UN-Oceans. In particular, the practical implications of a UNEP-proposed joint UN-Oceans/UN-Water task force on the Global Programme of Action were discussed. Lastly, it was agreed in

principle to hold a special meeting of the Network during the International Conference on Integrated Ocean Policy, to be held in Lisbon from 10 to 14 October 2005.

3.4 REPORT OF THE SECRETARY GENERAL (A/59/62 Add.1) (2004)

160. The fifth meeting of ICP considered progress made by the Secretary-General in establishing an effective, transparent and regular inter-agency coordination mechanism on ocean and coastal issues within the United Nations system pursuant to General Assembly resolution 57/141. The High-Level Committee on Programmes of the United Nations System Chief Executives Board for Coordination (CEB)approved the creation of an oceans and coastal areas network (OCAN, subsequently changed to UN-Oceans), building upon the former Subcommittee on Oceans and Coastal Areas and in line with the call of CEB for a more dynamic arrangement. The terms of reference and work programme of UN-Oceans were prepared by an ad hoc task group of concerned organizations and other stakeholders and approved at the intersessional meeting of the High-Level Committee on Programmes held from 31 May to 1 June 2004.

161. UN-Oceans is composed of the relevant programmes, bodies and specialized agencies of the United Nations system, secretariats of financial institutions, such as the World Bank, secretariats of the relevant United Nations global environmental conventions, such as the CBD and the UNFCCC, as well as ISA. The Executive Secretary of IOC of UNESCO stated during the fifth meeting of ICP that UNOceans should facilitate inter-secretariat coordination across the United Nations system and related institutions, as well as providing, through time-bound, targeted task-forces, platforms for integrating into its work organizations outside the United Nations system representing civil society, non-governmental organizations and others. It should also follow-up issues raised at ICP and addressed by the United Nations General Assembly, as well as the goals adopted in the Johannesburg Plan of Implementation of the World Summit on Sustainable Development.

4. WMO

4.1 DRAFT RESOLUTION: Res. 3.4.4/1 (Cg-XV) – MARINE METEOROLOGY AND OCEANOGRAPHY PROGRAMME

THE CONGRESS,

Noting:

- (1) Resolution 16 (Cg-XIV) Marine Meteorology and Oceanography Programme,
- (2) The Abridged Final Report with Resolutions and Recommendations of the Second Session of the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (WMO-No. 995),

- (3) Recommendation 2 (JCOMM-II) The Development of Operational Oceanographic Products and Services under JCOMM,
- (4) The request by EC-LVIII, paragraph 3.4.4.2 to the JCOMM to continue working in the ongoing WMO priority areas, including the new area of tsunami monitoring and mitigation systems and services, in close cooperation with the various Intergovernmental Coordination Groups for the Tsunami Warning and Mitigation Systems of IOC,

Considering:

- (1) That a continuing concerted effort by National Meteorological Services is needed, in association with national oceanographic agencies and institutions as appropriate, in order that marine meteorological and oceanographic services meet national, regional and international requirements,
- (2) That the provision of marine meteorological and oceanographic services contribute substantially to national economies as well as being essential to safety of life at sea,
- (3) That these goals, as well as supporting global ocean and climate monitoring and research programmes, require a multi-disciplinary ocean data management, in accordance with the international standards for processing, quality control and archiving,
- (4) That these targets can only be achieved by continuing and enhancing collaborations with international organizations and other entities representing users' interests, such as the IMO, IHO, OGP, ICS, INTERCARGO AND INTERTANKO, etc.,
- (5) That these goals should be addressed through application of a vigorous training and capacity building strategy based on different stages of development that, appropriately applied to each Member, result in a fully functioning suite of met-ocean services satisfying national, regional and international needs,
- (6) That progress in developing and implementing marine meteorological and oceanographic products and services will be achieved through best use of adequate technology and opportunities such as *in situ* met-ocean data, emerging remote sensing platforms, and operational models,
- (7) That the Marine Meteorology and Oceanography Programme (MMOP) has an important role to play in WMO cross-cutting activities such as WMO Information System (WIS), Disaster Prevention and Mitigation (DPM), and support for Least Developed Countries and the Small Island Developing States, for whom marine resources are a key development factor, as well as in assess coastal vulnerability to marine-related hazards,
- (8) That present Members' contributions to the implementation of the initial global observing system for climate constitute only about 58% of what is needed, and that global coverage by the component ocean systems cannot be achieved with the level of resources presently being contributed,

Decides:

- (1) That the substance of the Marine Meteorology and Oceanography Programme shall comply with the WMO Strategic Plan for 2008-2011 adopted under Resolution 6.2/1 (Cg-XV), with its major contributions focused on the following Expected Results:
 - I. Enhanced capabilities for Members to produce better weather forecasts and warnings;
 - II. Enhanced capabilities for Members to provide better climate predictions and assessments;
 - IV. Integration of WMO observing systems;
 - V. Development and implementation of the new WMO Information System (WIS);

- VI. Enhanced capabilities of Members in multi-hazard early warning and disaster prevention and preparedness;
- VII. Enhanced capabilities for Members to provide and use weather, climate, water and environmental applications and services;
- VIII. Broader use of weather, climate and water outputs for decision-making and implementation by Members and partner organizations;
- IX. Enhanced capabilities of Members in developing countries, particularly least developing countries, to fulfil their mandates;
- (2) That detailed planning and implementation of the MMOP should be in accordance with the WMO Strategic Plan and the above Expected Results, and assist Members to arrange for enhanced services provision, including:
 - (a) New operational ocean forecast and warning systems, to be developed in close coordination with users;
 - (b) Regional tsunami warning systems, in coordination with Members concerned and within the Intergovernmental framework and structures established by IOC;
 - (c) Maintenance and operation strategies for these systems, in coordination with Members concerned;
- (3) That the MMOP should be strengthened and expanded to address new and urgent challenges and issues, especially on Disaster Risk Reduction and associated marine hazard dimensions of Coastal Management in collaboration with IOC;
- (4) That additional funding be sought, from within the budget framework approved by Cg-XV and extrabudgetary resources, for high-priority activities in the field of training, capacity building and support for Least Developed Countries and Small Island Developing States;

Requests the Executive Council, with the assistance of the JCOMM and other relevant technical commissions, and regional associations, to promote, guide, and assist in the implementation of the MMOP, and to seek additional extrabudgetary support for the Secretariat for JCOMM. In the event funds become available through donor contributions, the Executive Council should consider requesting the Secretary-General to establish a trust fund or other appropriate mechanism that can be used for ocean observing system maintenance;

Urges Members concerned to collaborate actively, by making time and expertise of their staff available, and by giving all possible support, both direct resources and in-kind, to the implementation of the MMOP and the work of JCOMM through:

- Strengthening their marine meteorological and oceanographic services, including both basic services in support of the safety of life and property at sea as required under SOLAS, and also specialized services for various marine user groups;
- (2) Continuing and/or expanding their contribution to met-ocean data collection and archival, including associated metadata, making use of modern telecommunication facilities for the collection and dissemination of information, within the concept and developing structure of the WMO Information System;
- (3) Expanding the application of remotely-sensed ocean data to the provision of services and to global climate studies, and assisting developing countries to access and make best use of these data;
- (4) Assisting developing countries to fulfil their responsibilities under, and gain full benefit from, the Marine Meteorology and Oceanography Programme, in particular through strengthening specialized training facilities and programmes in marine meteorology and oceanography;

- (5) Facilitating national involvement in the JCOMM through support and encouragement of experts and relevant officers to participate in and contribute to intersessional activities, such as the work of the JCOMM expert teams and main subsidiary bodies, or national activities being developed or undertaken in support of the JCOMM work programme;
- (6) Using part of the resources obtained by the marine meteorology and oceanography services providers in local programmes of research and enhancement of services;
- (7) Supporting the implementation of regional demonstration projects promoted by the WMO and IOC, in areas such preparedness for marine coastal hazards as part of Integrated Coastal Area Management, in particular, in case of extreme events (e.g., storm surges, and high and/or long waves), as well as the analysis of the impacts of oceanic response to climate variability and change;
- (8) Increasing their contributions to the implementation of the initial global ocean observing system, and managing such contributions in cooperation with JCOMM;

Requests the Co-presidents of JCOMM:

- (1) To ensure that the Commission takes the lead in satisfying the technical needs of Members in the area of marine meteorology and oceanography, including by continuing its policy of preparing and updating guidance material in various aspects of marine meteorology and oceanography management, through the collaborative efforts of its experts;
- (2) To continue the efforts of the Commission in enhancing the collaboration between WMO and IOC in the field of marine meteorology and oceanography;
- (3) To arrange for contributions from the JCOMM to other WMO Programmes, as appropriate;

Requests the Secretary General:

- (1) To assist in the implementation of the programme, and in particular, to give high priority to training and capacity building requirements;
- (2) To foster the overall integration of the programme in the cross-cutting activities of the WMO, in accordance with the Strategic Plan for WMO;
- (3) To arrange for the coordination of activities under the MMOP, with relevant programme activities of the IOC and other international organizations, in particular to coordinate the sustained observing platform and data delivery operations of the international tsunami warning systems, through JCOMM, as integral components of a comprehensive global ocean observing system;
- (4) To work with Members and space agencies to ensure better continuity and overlap of relevant space-based and in situ ocean observing systems, and to move experimental observing systems into operational status;
- (5) To assist in the implementation of these activities;
- (6) To seek for further enhancement of cooperation between the MMOP and other WMO Programmes and technical commissions;
- (7) To seek extrabudgetary resources, as necessary, to facilitate the implementation of the programme and the work of the JCOMM;
- (8) To bring this resolution to the attention of all concerned.

Note: This resolution replaces Resolution 16 (Cg-XIV), which is no longer in force.

4.2 DRAFT RESOLUTION. Res. 3.1.6/1 (Cg-XV) – TROPICAL CYCLONE PROGRAMME

THE CONGRESS,

Noting:

- (1) The thirtieth, thirty-first and thirty-second annual status reports on the implementation of the Tropical Cyclone Programme issued in 2004, 2005, and 2006,
- (2) Actions taken particularly in relation to the International Strategy for Disaster Reduction,

Expresses its appreciation for the contributions of Members to the activities conducted under the general and regional components of the Tropical Cyclone Programme and for the invaluable assistance provided to developing countries to support implementation of the regional component through the WMO Voluntary Cooperation Programme, the European Union, donor Members and bilateral arrangements;

Further expresses its appreciation for the progress so far achieved in implementing the Tropical Cyclone Programme, particularly with regard to the improvements to the operational system resulting from the comprehensive regional cooperation programmes of the regional tropical cyclone bodies and to the valuable guidance material published under the general component of the Programme;

Reaffirms its grave concern at the heavy loss of life and severe damage still being caused by tropical cyclones and associated storm surges, floods and landslides in many areas of the world and the human suffering, economic losses, setback to social and economic development and destruction of the environment resulting from them;

Recognizing that, while the measures already taken under the Tropical Cyclone Programme have helped many Members to improve their protective systems, continuing and furthermore vigorous action to address the adverse effects of tropical cyclones is a high priority requirement, and an effective warning system which addresses meteorological forecasts and non-meteorological factors can help to reduce deaths and social-economic impacts,

Further recognizing that the direct contribution to effective warning systems through research into tropical cyclones encourages Members to support further research activities to improve predictions of intensity, movement and landfalling impacts such as storm surge and flooding,

Considering that the Tropical Cyclone Programme has much to contribute to reduction of risks of disasters caused by tropical cyclones and related hazards, and hence to the active involvement in activities of the WMO Natural Disaster Prevention and Mitigation Programme and the International Strategy for Disaster Reduction and to helping Members achieve sustainable development,

Decides:

- (1) That the WMO Tropical Cyclone Programme shall be further strengthened;
- (2) That the activities of the Tropical Cyclone Programme shall comply with the WMO Strategic Plan (2008-2011) adopted under Resolution 6.2/1 (Cg-XV), with its major contributions focused on the following Expected Results:
 - I. Enhanced capabilities of Members to produce better weather forecasts and warnings;
 - III. Enhanced capabilities of Members to provide better hydrological forecasts and assessments;
 - VI. Enhanced capabilities of Members in multi-hazard early warning and disaster prevention and preparedness;

- VIII. Broader use of weather, climate and water outputs for decision-making and implementation by Members and partner organizations;
- IX. Enhanced capabilities of Members in developing countries, particularly Least Developed Countries, to fulfill their mandates;

Urges Members to ensure that their Meteorological, Hydrological and Disaster Risk Reduction Services take whatever steps are within their competence and coordinate with the appropriate authorities:

- (1) To promote awareness of the risks associated with tropical cyclones and related hazards;
- (2) To continue to strengthen their forecasting and warning capabilities and ensure wide dissemination, understanding and utilization of their products, particularly at the community and local level;
- (3) To see that the measures necessary to save human lives and reduce damage are carried out at all levels, including the community level, as a consequence of tropical cyclone forecasts and warnings;
- (4) To continue to work regionally through sharing of knowledge, skills, experience and resources to save human lives and reduce damaging impacts;

Calls for the continuation of the fruitful and close cooperation with other international organizations, especially the United Nations Economic and Social Commission for Asia and the Pacific, the United Nations International Strategy for Disaster Reduction System partners, the International Civil Aviation Organization, and regional disaster mitigation and preparedness agencies, and with other WMO Programmes and Technical Commissions, such as JCOMM, to promote a multidisciplinary approach towards the attainment of the humanitarian goals of the programme;

Appeals to the Voluntary Cooperation Programme donor Members, the United Nations Development Programme, Development Banks and other international organizations and funding agencies concerned with the goals of the WMO Tropical Cyclone Programme to give the maximum possible support to those activities by contributing the resources essential for their expeditious implementation;

Requests the Secretary-General:

- (1) To bring this resolution to the attention of all concerned;
- (2) To keep Members concerned fully informed of progress and of developments in the planning and implementation of the programme;
- (3) To assist Members in their efforts to safeguard life and property from tropical cyclones and related hazards by supporting, to the maximum extent possible within the available budgetary resources, activities related to the programme and especially those directly linked with the provision of accurate and timely warnings and the organization of proper community response.

Note: This resolution replaces Resolution 7 (Cg-XIV), which is no longer in force.

4.3 DRAFT RESOLUTION. Res. 3.9/1 (Cg-XV) — NATURAL DISASTER PREVENTION AND MITIGATION PROGRAMME

THE CONGRESS,

Noting:

- (1) The Abridged Final Report with Resolutions of the Fourteenth World Meteorological Congress (WMO-No. 960), general summary paragraphs 7.4.1 to 7.4.21 and 3.4.1.23, and Resolution 29 (Cg-XIV) Natural Disaster Prevention and Mitigation Programme,
- (2) The Abridged Final Report with Resolutions of the Fifty-sixth Session of the Executive Council (WMO-No. 977), general summary paragraphs 11.1 to 11.13, Resolution 5 (EC-LVI) — Executive Council Advisory Group on Natural Disaster Prevention and Mitigation, and Annex 4 to paragraph 3.9.5 – Revised Implementation Plan 2005 – 2007,
- (3) The Abridged Final Report with Resolutions of the Fifty-seventh Session of the Executive Council (WMO-No. 988), general summary paragraphs 3.9.1 to 3.9.13, and Resolution 9 (EC-LVII) — Natural Disaster Prevention and Mitigation,
- (4) The Abridged Final Report with Resolutions of the Fifty-eighth Session of the Executive Council (WMO-No. 1007), general summary paragraphs 3.9.1 to 3.9.20,
- (5) The Report of the Second Session of the Executive Advisory Group on Disaster Prevention and Mitigation,
- (6) The outcome documents of the World Conference on Disaster Reduction (Kobe, Hyogo, Japan, 18-22 January 2005), including the Hyogo Declaration and the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (HFA),
- (7) The IPCC Fourth Assessment Reports,

Noting further:

- (1) That disasters pose a serious threat to safety, security and sustainable development,
- (2) The increasing concern within the international community on issues relating to disaster risk reduction,
- (3) The significant loss of life and property associated with weather-, water- and climate-related hazards,
- (4) The potential increase in hydrometeorological disasters associated with climate variability and change,
- (5) The critical role of WMO and NMHSs in all components of disaster risk reduction,

Stressing that investment in meteorological, hydrological and climate services is critical to protection of life, livelihood, property and achievement of sustainable development,

Considering:

(1) That the WMO DPM Programme is a crosscutting Programme spanning WMO Programmes, technical commissions, regional associations and the Secretariat,

- (2) That successful implementation of the Programme requires a clear programmatic focus, effective governance and strong cooperation at national to international levels,
- (3) That the name, "WMO Natural Disaster Prevention and Mitigation Programme," may not adequately reflect the complete scope of activities of WMO and NMHSs in disaster risk reduction,

Reaffirming that protection of lives, livelihoods and property are a key strategic thrust of WMO,

Recognizing the strengthened International Strategy for Disaster Risk Reduction (ISDR) System as the primary collaboration mechanism across the United Nations System and other international and regional agencies and networks involved in disaster risk reduction,

Decides that the implementation of the Natural Disaster Prevention and Mitigation Programme should comply with the WMO Strategic Plan 2008-2011, adopted under Resolution 6.2/1 (Cg-XV), with its major contributions focused on the following Expected Results:

- VI: Enhanced capabilities of Members in multi-hazard early warning and disaster prevention and preparedness;
- VII: Enhanced capabilities of Members to provide and use weather, climate, water and environmental applications and services;
- VIII: Broader use of weather, climate and water outputs for decision-making and implementation by Members and partner organizations;
- IX: Enhanced capabilities of Members in developing countries, particularly Least Developed Countries, to fulfil their mandates;

Requests Executive Council:

- (1) With the assistance of technical commissions and regional associations to prioritize and provide further guidance for the implementation of the Programme in line with the WMO Strategic Plan 2008-2011, during the intersessional period;
- (2) To re-establish with updated Terms of Reference, its EC Advisory Group on Disaster Risk Reduction;

Requests presidents of technical commissions to coordinate inter-commission projects and activities to meet WMO Strategic Goals in disaster risk reduction;

Requests presidents of regional associations, to ensure that regional association's strategic plans are aligned with the regional components of Hyogo Framework for Action and with WMO's Strategic Goals in disaster risk reduction;

Requests the Secretary-General, in reference to the DPM Programme vision statement, strategic goals and in response to Members' requirements and priorities:

- (1) To give high priority to the implementation of the Programme within available budgetary resources;
- (2) To ensure that the Programme is implemented with clear roles and responsibilities among WMO Programmes, technical commissions, regional associations, Members and external partners to better leverage their resources, capacities and expertise for enhanced benefits to the Members;
- (3) To further define and implement a set of prioritized national and regional DPM-related projects;

- (4) To assist with strengthening of international cooperation in disaster risk reduction, by facilitating coordination among Members' bi-lateral and multi-lateral capacity development activities and by fostering collaboration with ISDR System Partners and other relevant governmental and non-governmental Organizations;
- (5) To prepare standard methodology for collection of information from NMHSs on meteorological, hydrological and climate-related hazards and their impacts, when possible and available, and coordinate collection of such information from NMHSs to prepare statistical reports to inform specialized agencies of the United Nations;

Invites the ISDR System Partners and ISDR Secretariat to continue strengthening their partnerships with WMO;

Urges Members:

- (1) To implement HFA at the national level;
- (2) To participate proactively in the planning and decision processes in disaster risk reduction, including through support of related national Committees and Platforms;
- (3) To strengthen collaboration of NMHSs with the civil protection agencies and disaster risk management authorities.

4.4 DRAFT RESOLUTION. Res. 3.2.3/1 (Cg-XV) – GLOBAL CLIMATE OBSERVING SYSTEM (GCOS)

THE CONGRESS,

Noting:

- (1) The 1998 Memorandum of Understanding (MoU) between WMO, IOC of UNESCO, UNEP, and ICSU concerning the Global Climate Observing System,
- (2) The Terms of Reference for GCOS National Coordinators (Annex XII of Summary Report of the Eleventh Session of the WMO-IOC-UNEP-ICSU Steering Committee for GCOS, GCOS-87, WMO/TD-No. 1189),
- (3) Resolution 9 (Cg-XIV) GCOS Climate Monitoring Principles,
- (4) Resolution 10 (Cg-XIV) Global Climate Observing System,
- (5) Decisions 11/CP.9 Global observing systems for climate, and 5/CP.10 Implementation of the global observing system for climate, of the Ninth and Tenth Sessions, respectively, of the Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC),
- (6) The Implementation Plan for the Global Observing System for Climate in Support of the UNFCCC (GCOS-92, WMO/TD-No. 1219),
- (7) Systematic Observation Requirements for Satellite-based Products for Climate (GCOS-107, WMO/TD-No. 1338),
- (8) Climate Information for Development Needs: An Action Plan for Africa Report and Implementation Strategy ('ClimDev Africa', GCOS-108, WMO/TD-No. 1358),
- (9) Decision on 'Climate Change and Development in Africa', African Union Assembly/AU/Dec.134 (VIII), January 2007,

Considering:

(1) The increasing needs of Members and international organizations for comprehensive, continuous, reliable climate and climate-related data and information in support of:

- (a) Climate system monitoring;
- (b) Climate change detection and attribution;
- (c) Research to improve understanding, modelling and prediction of the climate system;
- (d) Operational climate prediction on seasonal-to-interannual timescales;
- (e) Assessment of the impacts of, and vulnerability and adaptation to, natural climate variability and human-induced climate change;
- (f) Applications and services for sustainable economic development;
- (g) Requirements of the UNFCCC and other international conventions and agreements,
- (2) The specific observational needs of the WCRP, the IGBP, the IHDP and Diversitas; the requirements for comprehensive observations in support of the assessment processes of the IPCC,
- (3) The objectives of GCOS as identified in the MoU to support all aspects of the World Climate Programme and relevant aspects of other climate-related global programmes, and its essential role in underpinning the full range of climate applications and services provided by NMHSs and other organizations,,
- (4) The deficiencies, and in many parts of the world the decline, in the number and availability of systematic observations of climate,
- (5) The need to implement and, as necessary, to update the Regional Action Plans developed through the GCOS Regional Workshop Programme,
- (6) The need to incorporate climate information into social and economic decision-making, particularly in support of the Millennium Development Goals in developing countries, with a special focus on Africa,

Recognizing:

- (1) The importance of efficient coordination and interoperability across the various component observing systems of GCOS and effective integration of *in situ* and space-based observations in meeting user needs,
- (2) The unique opportunities for coordinated national and international observation of Essential Climate Variables across the atmospheric, oceanic and terrestrial domains provided through the joint sponsorship of GCOS by WMO, IOC, UNEP and ICSU,
- (3) The new opportunities for increased international support, enhanced interoperability, and improved integration opened up by the prospect of embedding the GCOS system of systems within the emerging operational structure of the Global Earth Observation System of Systems,

Recognizing with appreciation:

- (1) The important contribution of the GCOS Steering Committee and its Panels in providing scientific and technical guidance to WMO and other sponsoring and participating organizations for the planning, implementation and further development of GCOS,
- (2) The critical role of the Executive Council, technical commissions and regional associations in coordinating the implementation of the WMO component systems of GCOS,
- (3) The substantial achievements of Members in implementing their climate observing systems in support of both national needs and the international objectives of GCOS,
- (4) The close collaboration among the co-sponsors of GCOS and with the Steering Committees and Secretariats of their other jointly-sponsored observing systems, GOOS and GTOS,
- (5) The support provided by a range of other national and international organizations for GCOS planning and implementation and, in particular, the support of the African Union, the UN

Economic Commission for Africa, the UK Department for International Development, and the African Development Bank for the ClimDev Africa Programme,

Reaffirms WMO's continuing strong commitment to the objectives of GCOS and support for its implementation in order to meet the full range of user needs;

Decides to maintain GCOS as a priority programme of the Organization, in partnership with IOC, UNEP and ICSU and such other international sponsors as might be agreed by the Executive Council;

Urges Members:

- To strengthen their national atmospheric, hydrological and related oceanic and terrestrial climate observing networks and systems within the framework of GCOS and in support of user needs;
- (2) To assist developing country Members to strengthen their observing networks, to improve their capacity to acquire climate-relevant data, and to enhance their provision of climate services by implementing projects in the ten GCOS Regional Action Plans, and by contributing to the implementation of the ClimDev Africa Programme and to similar initiatives in other regions;
- (3) To submit, if they have not already done so, historical daily data from all GCOS Surface Network (GSN) stations to the GSN archive, in digital form where possible;
- (4) To ensure, to the extent possible, the long-term continuity of the critical space-based components of GCOS, including the generation and dissemination of the satellite-based climate data and products based on the Essential Climate Variables that are required to meet the needs of the UNFCCC;
- (5) To establish GCOS National Committees and to identify GCOS National Coordinators in order to facilitate coordinated national action on observing systems for climate, taking into account the joint international sponsorship of GCOS and the evolving international arrangements for GEOSS;
- (6) To ensure that their delegations to sessions of the UNFCCC/COP and its subsidiary bodies are properly informed of the key role played by NMHSs in implementing and operating observing systems necessary to meet national obligations under the Convention, for example through the inclusion in national delegations of representatives of NMHSs;
- (7) To encourage their NMHSs to provide effective leadership in the preparation of national reports to the UNFCCC on their activities with regard to systematic observation of the global climate system, including the identification of gaps, using revised UNFCCC reporting guidelines on global climate observing systems which reflect the priorities of the 2004 Implementation Plan and which incorporate reporting on the Essential Climate Variables identified therein;
- (8) To enhance their support to the GCOS Secretariat, through secondment of experts and/or contributions to the Climate Observing System Fund or to specific planning and implementation mechanisms, so as to enable the Secretariat to and support the full range of implementation agents in their efforts to establish an effectively-operating GCOS;

Requests the Executive Council:

- (1) To keep the progress of GCOS under regular review and to provide support and guidance on its further development and implementation;
- (2) To advise and assist Members, sponsoring bodies, and other international organizations in the implementation of global observing systems for climate;

Requests the technical commissions:

- (1) To lead the development and implementation of the networks for which they are responsible in the light of advice and guidance from the GCOS Steering Committee;
- (2) To contribute to the UNFCCC 5-year 'Nairobi Work Programme on Impacts, Vulnerability, and Adaptation to climate change', in particular to the elements of the programme related to data and observations;

Requests the regional associations:

- (1) To foster effective, coordinated implementation of GCOS at the regional level, in close consultation with the regional counterparts of the other international sponsors of GCOS;
- (2) To undertake efforts to assist Members in providing effective leadership in the preparation of national reports to the UNFCCC on their activities with regard to systematic observation of the global climate system;

Requests the GCOS Steering Committee to continue to provide broadly-based strategic advice and guidance to all relevant WMO bodies on the implementation and further development of GCOS;

Requests in particular the GCOS Steering Committee and the technical commissions to continue their interaction and cooperation in the further development and implementation of GCOS;

Requests the Secretary-General, as appropriate and within the programme and budget approved by Congress, and using whatever access might be possible to additional external funding mechanisms:

- (1) To support the further planning, development and implementation of GCOS, including the actions in response to the needs of the UNFCCC/COP and the recommendations of the 2004 Implementation Plan;
- (2) To encourage and assist Permanent Representatives of Members to take the lead in the establishment of GCOS National Committees and the designation of GCOS National Coordinators;
- (3) To articulate, at all appropriate fora, the need for broad support by nations of the observational and resource requirements for implementing GCOS;
- (4) To provide all support possible for the work of the GCOS Steering Committee and its Panels and Secretariat.

4.5 DRAFT RESOLUTION. Res. 7.4/1 (Cg-XV) – TOWARDS ENHANCED INTEGRATION BETWEEN WMO OBSERVING SYSTEMS

THE CONGRESS,

Noting:

- (1) Article 2 of the WMO Convention (WMO-No. 15),
- (2) Sixth WMO Long-Term Plan 2004-2011 (WMO-No. 962),
- (3) WMO Strategic Plan 2008-2011 and Beyond,
- (4) Abridged Final Reports with Resolutions of the Fourteenth World Meteorological Congress, and the Fifty-sixth, Fifty-seventh and Fifty-eighth Sessions of the Executive Council (WMO No. 960, WMO-No. 977, WMO-No. 988, and WMO-No. 1007, respectively),
- (5) Report of the EC Task Team on WMO Integrated Observing Systems (Geneva, 31 January 2 February 2007),

Considering:

- (1) That all WMO constituent bodies, international Steering Committees and numerous subsidiary expert-level groups provide a complex framework for coordination and collaboration in which a large number of decision makers and experts from virtually all countries and partner organizations address matters related to the observation systems,
- (2) That an enhanced integration between the WMO observing systems could have the potential to lead to important benefits for Members and their National Meteorological and Hydrological Services and the Organization as a whole.

Appreciating the important contributions international partner organizations and programmes make towards observing the Planet Earth.

Recognizing:

- (1) That working towards enhancing integration between the WMO observing systems will be a major effort of the Organization and should proceed in parallel with the planning and implementation of the WMO Information System (WIS) to allow for an integrated WMO endto-end system of systems designed to improve Members capability to effectively provide the widening range of services and to better serve research program requirements,
- (2) That this endeavor would have an impact on the structure and functions of WMO, including aspects of the WMO Technical Regulations, data policy, roles, terms of reference, and working arrangements of the technical commissions, the WMO Programme structure, the WMO Secretariat,
- (3) That the integration process would be a complex undertaking that would not be free of risks, stretch over several years and require the full support of all Members to be successful,

Decides to embark on enhancing the integration between the WMO observing systems;

Urges Members and **Invites** international partner organizations and programmes to collaborate actively in, and give all possible support to, development and implementation of this initiative;

Requests:

- (1) The Executive Council to:
 - (a) Establish a mechanism to steer and monitor the activity and to achieve the broadest possible collaboration and cooperation;
 - (b) Ensure the active participation and representation of the principal bodies concerned and also the participation, as appropriate, of technical experts and representatives of agencies undertaking co-sponsored observing initiatives;
 - (c) Ensure that this mechanism is be closely coordinated with the institutional arrangements for planning and overseeing WIS;
 - (d) Submit a comprehensive report on the integration between the WMO observing systems to the Sixteenth WMO Congress;
- (2) The regional associations and technical commissions to include this activity in their work programmes in order to fully accommodate the cross-programme nature of the integration initiative;
- (3) The Secretary General to:
 - (a) Strengthen coordination and collaborate closely with relevant international partner organizations and programmes in pursuing this endeavour;
 - (b) Arrange for adequate resources to support the integration initiative;

(c) Adapt the structure of the Secretariat as and when appropriate, so as to ensure optimal management of and support to the initiative.

4.6 GENERAL SUMMARY OF Cg-XV. WORLD CLIMATE RESEARCH PROGRAMME (agenda item 3.2.7)

The representative of the IOC of UNESCO recalled to the Congress that the IOC joined 3.2.7.7 WMO and ICSU as a sponsor of the WCRP in 1993 and that in June 2005, the 23rd IOC Assembly "reaffirmed its continued co-sponsorship and its support of the WCRP" at a level of at least 125,000 US\$ per year through Regular Programme funds. The IOC sees WCRP as a world-wide community of climate scientists, which represents the best collective knowledge about the physical climate system and its predictability. IOC Member States rely on the WCRP for leadership and coordination in climate science, for improved predictions of climate variability and change, and for the strong contributions of WCRP programmes to the Global Ocean Observing System. The inputs of the WCRP CLIVAR and CliC projects continue to be central for this. The IOC believes the WCRP should maintain its focus on coordinating and promoting the highest-guality research on the predictability of the climate system and the human effect on climate, as it has done so very well in the past. The IOC Member States have also expressed an interest in understanding climate science in its policy context and in understanding the impacts of climate variability and change. The IOC appreciates the initiatives WCRP has taken and will be taking in improving climate services, in exploring avenues for collaboration with the IGBP and other international climate research programmes through the ESSP, and in assisting developing countries in understanding regional climate projections in order to develop adaptation strategies. The IOC thanked the WMO for its continued major support of the WCRP secretariat and programme activities, and expressed willingness to continue dialogue on how to best support the activities of the WCRP.

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