

hydrological services should ensure that the uncertainties intrinsic to their data and forecasts are understood and quantified.

4.1.79 The Council noted that water management can play a key role in mitigation strategies for addressing climate change, including reduction in flooding, water storage for droughts, and hydropower production. The Council further noted that water management requires the integration of weather services, climate services, and hydrological services. The Council recommended that proper consideration be given to water management through the Global Framework for Climate Services (GFCS) in addition to the current focus on flood management.

4.1.80 The Council noted that many rivers pass through the territory of multiple Members (transboundary rivers). The Council further noted that efficient water management operations will require rapid sharing of weather services, climate services, and hydrologic services between Members. The Council urged Members to develop agreements for coordinating service delivery on transboundary rivers, such as through water basin commissions or other appropriate mechanisms, and where appropriate, to adopt common technologies for facilitating data and information sharing.

## 4.2 Disaster risk reduction (agenda item 4.2)

### ***Enhanced capabilities of Members to reduce risks and potential impacts of hazards caused by weather, climate, water and related environmental elements (ER 2)***

#### ***Progress with the implementation of the WMO Disaster Risk Reduction activities and plans for post-2015***

4.2.1 The Council noted the fundamental importance of multi-hazard information and services provided by NMHSs in support of risk-informed and impact-based DRR decision-making. The Council noted progress in documenting good practices and guidelines to assist the relevant activities of Members, including: (i) WMO hazard definition, classification and hazard data/metadata and modelling requirements to support loss and damage data collection and risk analysis in collaboration with the Disaster and Civil Protection Agencies (DCPAs); (ii) WMO Guidelines for National Meteorological and Hydrological Services on Institutional Partnerships in Multi-Hazard Early Warning Systems and Supporting Emergency Preparedness, Response, Rescue and Early Recovery Operations; and (iii) WMO Guidelines on Requirements for Meteorological and Climate Services for Disaster Risk Financing and Insurance (completed or forthcoming by 2015). The Council further noted the contribution of the DRR Focal Points of TCs and Technical Programmes (DRR FP TC-TP), WMO DRR User-Interface Expert Advisory Groups (DRR UI-EAGs) and other agencies. The Council encouraged Members to actively participate in the national process for risk analysis, building partnerships and working arrangements with national agencies responsible for collection of loss and damage data.

4.2.2 The Council noted the continued implementation of DRR national capacity development projects with the regional cooperation framework in South-east Europe and Central America. Recalling the recent flooding and other hydrometeorological extreme events in those regions, the Council encouraged the Secretariat and Members to continue efforts to conduct and deliver the outcome of the projects. The Council noted that, through a discussion at the meetings of the DRR FP TC-TP, a suggestion was made to initiate a DRR project in South-East Asia focusing on capacity development in risk analysis and Multi-Hazard Early Warning Systems (MHEWS). This had been discussed during the 2014 Meeting of the Presidents of Technical Commissions (PTC-2014; January 2014). The Council noted the relevant recommendations of the PTC-2014, and requested the Secretary-General, together with the PTC with support from the DRR FP TC-TP, RA II, Members and strategic partners, to facilitate the scoping of the proposal in line with the recommendations of the PTC to complement the existing relevant projects and activities in order to avoid duplication, in collaboration with relevant WMO projects and programmes.

4.2.3 The Council noted the work of the CBS/DPFS-PWS Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies as a direct contribution from CBS to the WMO DRR priority.

4.2.4 The Council stressed the importance of DRR training materials, including in relation to strengthening national institutional arrangements. The Council noted that a significant amount of training modules have been developed by Members, Regional Training Centres (RTCs) and the DRR Programme that could be extended and elaborated through the appropriate introduction of relevant materials from partners such as the World Bank, and other United Nations agencies (e.g. UNISDR, UNDP, UN-OCHA, WFP, CADRI and UNITAR). The Council requested the Secretary-General to:

- (a) Review available DRR training modules and programmes developed by Members, RTCs and partner agencies;
- (b) Facilitate coordinated access to DRR training and guidance materials.

4.2.5 The Council noted that implementation of the DRR activities has directly contributed to the implementation of the GFCS, with concrete deliverables in the 2014–2015 time frame, including guidelines on user requirements for climate services for hazard risk analysis and disaster risk financing and insurance.

4.2.6 The Council was pleased to hear of the planned first pilot of the CBS/DPFS-PWS Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies, in collaboration with the Global Disaster Alert Coordination System (GDACS). However, the Council expressed concern about GDACS' practice of also issuing its own multi-hazard warnings. It recognized that GDACS and other non-NMHS sourced alerts and warnings could challenge and undermine the authoritative meteorological, hydrological and other environmental hazard warnings issued by NMHSs. The Council therefore requested CBS to review the governance procedures relating to the provision and availability of meteorological, hydrological and other environmental hazards, with a view to developing appropriate guidance for consideration by Cg-17.

#### ***Post-2015 Framework for DRR***

4.2.7 Taking into consideration that the term of the Hyogo Framework for Action (HFA) 2005–2015 is drawing to an end, the Council recalled that the third World Conference on Disaster Risk Reduction (WCDRR-III, 14–18 March 2015, Sendai, Japan) would consider for adoption the Post-2015 Framework for DRR. The Council also noted that regional and global consultations are under way in 2014, facilitated by the United Nations International Strategy for Disaster Risk Reduction (UNISDR) and the regional socio-economic groupings for drafting of the Post-2015 Framework for DRR.

4.2.8 The Council welcomed the proposal by Japan to work with the Secretariat and Members to develop and conduct a demonstration on the advantage and responsibilities of WMO and NMHSs, especially introducing development and strengthening Early Warning Systems against natural hazards.

4.2.9 The Council encouraged all Members to actively participate in and provide input to the national and regional consultations on the Post-2015 Framework for DRR, as well as to the WCDRR-III event, to showcase: (i) the importance of meteorological, hydrological and environmental services in support of DRR decision-making, through case studies and “success stories”; and (ii) technical and institutional capacities and challenges faced by Members in implementing early warning systems in support of risk-informed decision-making.

4.2.10 The Council noted the strategic importance for WMO to actively participate in the planning of the WCDRR-III, particularly in the drafting of the Post-2015 Framework for DRR, with clear direction from a WMO-wide DRR strategy. In this context, the Council emphasized that focused effort should be made to clearly identify the role of NMHSs and of other national bodies in the overall Post-2015 Framework for DRR, and to enhance their capabilities to deliver authoritative, and where possible, impact-based forecasts and warnings to inform decision support mechanisms at local, national, regional and global levels. The Council further emphasized that the DRR activities of Members are part of their service delivery mandates to ensure readiness,

response and resilience, and therefore, requested the Secretary-General to ensure alignment of the WMO DRR-related programmes and activities with the WMO Strategy for Service Delivery.

4.2.11 The Council adopted [Resolution 8 \(EC-66\) – WMO disaster risk reduction roadmap](#).

#### **4.3 Data-processing and Forecasting: Weather, Climate and Water** (agenda item 4.3)

***Enhanced capabilities of Members to produce better weather, climate, water and related environmental information, predictions and warnings to support in particular disaster risk reduction and climate impact and adaptation strategies (ER 3)***

##### **Weather Issues**

##### ***Evolution of the Global Data-processing and Forecasting System (GDPFS)***

4.3.1 The Council recalled that Cg-XVI (2011) adopted the outline for a revised Manual on the GDPFS (WMO-No. 485) through Resolution 6 (Cg-XVI), wherein it decided that this Manual is the single source of technical regulations for all operational data-processing and forecasting systems of Members. The Council noted that the revision of the Manual was near completion and a status report will be provided to CBS-Ext.(14). It also noted that the revised Manual will, at its completion, conform to the principles and procedures contained in: *Guidelines on the Preparation and Promulgation of the WMO Technical Regulations* (WMO-No. 1127, 2014).

4.3.2 The Council noted the joint CBS-CCI Workshop on Operational Long-range Forecasting: GPCs and RCCs, in support of NMHSs and RCOFs was held (Brasilia, Brazil, 25–27 November 2013) and requested CBS and CCI to develop a coordinated action plan that incorporates the Workshop's recommendations for enhancing the exchange of data, methods and tools between Global Producing Centres for Long-range Forecasts (GPCs) and Regional Climate Centres (RCCs), and for improving operational practices used by NMHSs and RCOFs in long-range (seasonal) forecasting. The Council noted that examples of successful practice may be drawn from the Cascading Forecasting Process of the SWFDP in short- and medium-range weather forecasting. In this respect, the Council expressed appreciation of the training activities carried out in all regions by some Members.

4.3.3 The Council recalled the request by Cg-XVI (2011) to the Lead Centre for Long-range Forecasts Multi-Model Ensemble (LC-LRFMME) to extend its role to also include the operational exchange of extended-range (beyond 10 days up to 30 days) predictions, and further encouraged GPCs running dynamical sub-seasonal (less than 90 days) prediction systems, to supply data from their respective systems on a voluntary basis for generation and display of multi-model sub-seasonal products by the LC-LRFMME, as has been done for seasonal range products. Noting that standard procedures for verification of extended-range forecasts would be required to support the operations exchange of forecasts, the Council further encouraged CBS and CCI to collaborate with WWRP-THORPEX/WCRP research plans and activities on sub-seasonal to seasonal prediction.

4.3.4 The Council, having considered the implementation of the WMO Strategy for Service Delivery, noted that its success depended on high quality outputs of Members' data processing and forecasting systems (ER 3), and effective linkages between data processing and service delivery functions, including for example in the development of scientifically sound methods for impact-based forecasting and the production of risk-based warnings. The GDPFS and its operational centres should be strengthened and further developed towards a seamless data processing and forecasting to cover all forecasting time scales, and extended to include environmental-related predictions in support of service delivery (ER 1). Consequently, the Council also encouraged the Secretariat and relevant Commissions to develop related guidance materials for Members to take advantage of full GDPFS capabilities.

4.3.5 The Council noted possible needs of some Members that may arise in their anticipation of a major meteorological or meteorology-related hazard threatening the safety and security of

**Resolution 8 (EC-66)****WMO DISASTER RISK REDUCTION ROADMAP**

THE EXECUTIVE COUNCIL,

**Recalling** Resolution 27 (Cg-XV) – WMO Strategic Plan, in which disaster risk reduction (DRR) is a strategic priority area,

**Noting:**

- (1) The significant importance of disaster risk reduction to WMO Members,
- (2) WMO DRR activities are fundamentally based upon, and are in support of, the core work of National Meteorological and Hydrological Services,

**Noting further:**

- (1) The Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters,
- (2) The third World Conference on Disaster Risk Reduction, planned to be held in Sendai, Japan, from 14 to 18 March 2015, which would consider for adoption the Post-2015 Framework for Disaster Risk Reduction,

**Considering** that focused effort should be made by WMO Members to provide expertise in support of authoritative risk-informed decision-making:

- (1) To further develop and implement Multi-hazard Early Warning Systems that support readiness, response and resilience of nations and communities,
- (2) To advance understanding of high-impact meteorological, hydrological and environmental events, and rapid transfer of scientific and technological knowledge to DRR decision-making,
- (3) To support effective communication of warning information to stakeholders,

**Emphasizing** that the WMO Disaster Risk Reduction Programme should facilitate efforts that promote delivery of authoritative forecast and warning information to decision-support mechanisms at the local, national, regional and global levels, through:

- (1) Coherent and consistent implementation of WMO DRR priorities within all relevant programmes and projects of WMO, in the light of the recommendations of the regional associations and, where appropriate, the advice of the technical commissions,
- (2) Primary consideration to enhance the capabilities of National Meteorological and Hydrological Services to conduct their core activities,
- (3) Clear identification of the role of National Meteorological and Hydrological Services to deliver authoritative, and where possible, impact-based forecasts and warnings among WMO partners, United Nations bodies, and external planning processes, such as the Post-2015 Framework for DRR,

**Requests** the Secretary-General:

- (1) In consultation with Members, to urgently develop a WMO Disaster Risk Reduction roadmap of prioritized and realistically achievable activities and deliverables that are consistent with the WMO Strategic and Operating Plans, as well as the workplans for relevant WMO Programmes and projects;

- (2) To present a draft WMO DRR roadmap to the Seventeenth World Meteorological Congress for consideration and to be reflected in the WMO Strategic Plan and Operating Plan for 2016–2019;
- (3) To coordinate WMO-wide participation in the preparation and drafting of the Post-2015 Framework for DRR, in line with the development of the WMO DRR roadmap;
- (4) To provide regular updates to Members on the progress of the WMO DRR Programme, including the WMO-wide engagement in the Post-2015 Framework for DRR and the planning of relevant events at the third World Conference on Disaster Risk Reduction.

### Resolution 9 (EC-66)

#### REVIEW OF THE GLOBAL CLIMATE OBSERVING SYSTEM PROGRAMME

THE EXECUTIVE COUNCIL,

**Recalling** Resolutions 29 (Cg-XVI) – Global Climate Observing System, 48 (Cg-XVI) – Implementation of the Global Framework for Climate Services, 15 (EC-64) – Global Climate Observing System and 6 (EC-65) – Restructuring of the World Climate Programme: inclusion of the Programme of Research on Climate Change Vulnerability, Impacts and Adaptation as an additional component,

**Noting** the *GCOS Programme Review, Synthesis Report, March 2014* (GCOS-181),

**Recognizing:**

- (1) The core contribution of the Global Climate Observing System (GCOS) programme to the Global Framework for Climate Services with respect to the Observations and Monitoring Pillar,
- (2) The new developments, systems and frameworks, such as the Global Earth Observation System of Systems, the WMO Integrated Global Observing System, the findings of the Intergovernmental Panel on Climate Change Fifth Assessment Report and activities of special interest to GCOS sponsors, such as Future Earth, Blue Planet, and the Programme of Research on Climate Change Vulnerability, Impacts and Adaptation,
- (3) The need to implement the recommendations given in the Synthesis Report in coordination with all sponsoring organizations of the GCOS programme,

**Considering** the GCOS Memorandums of Understanding signed with the International Council for Science (ICSU) and the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (IOC/UNESCO) on 26 October 1991 and with ICSU, IOC/UNESCO and the United Nations Environment Programme on 9 April 1992 and the summer of 1998,

**Decides** to endorse the Synthesis Report as a good basis for updating the GCOS Memorandum of Understanding and the GCOS Strategic Plan;

**Requests** the Secretary-General:

- (1) To collaborate with the co-sponsors to implement the recommendations as appropriate;
- (2) To inform the Seventeenth World Meteorological Congress about the outcome of the implementation of the recommendations.