Requirements from special programmes and projects

THORPEX Interactive Grand Global Ensemble

3.5.3.9 The Council recognized that the THORPEX Interactive Grand Global Ensemble (TIGGE) was paving the way towards the next generation operational forecast system and that the data transfers required to utilize TIGGE presented significant challenges for the development and implementation of WIS. It strongly urged that WIS development and implementation take into account the needs of TIGGE, that the participating operational partners commit to sufficient resources to ensure the success of Phase 2 of TIGGE, and that future multi-centre model archiving and dissemination systems (for example, TIGGE-LAM and seasonal prediction) consider adoption, where appropriate, of the format and conventions established by TIGGE, which would simplify their use by forecasters, the research community and applications.

International Polar Year 2007–2008

3.5.3.10 The Council recognized and appreciated the scope of the effort during the International Polar Year 2007–2008 to advance understanding and prediction of the components of the Earth System. It requested that WMO Members made efforts to obtain appropriate IPY data sets and legacy measurements through the GTS and to archive observations, given that many of the special measurement campaigns were of short duration. In that regard, the Council noted with appreciation that the Norwegian Meteorological Institute had recently joined the European VGISC project with a view that its IPY data centre would act as a WIS DCPC.

4. SERVICE DELIVERY (Strategic thrust) *(agenda item 4)*

4.1 ENHANCED CAPABILITIES OF MEMBERS IN MULTI-HAZARD EARLY WARNING AND DISASTER PREVENTION AND PREPAREDNESS ***(Expected result 6)*** *(agenda item 4.1)*

Disaster Risk Reduction Programme strategy and implementation framework

4.1.1 The Executive Council recalled that Fifteenth Congress had approved the strategic goals of WMO in disaster risk reduction, derived from the Hyogo Framework for Action 2005–1015: Building the Resilience of Nations and Communities to Disasters. The Council further noted that Fifteenth Congress had approved the Disaster Risk Reduction (DRR) Programme implementation framework built upon the following major thrusts: (a) modernization of NMHSs and observing networks; (b) implementation of national operational multi-hazard early warning systems; (c) strengthening of hazard data, analysis and hydrometeorological risk assessment tools; (d) strengthening NMHSs' cooperation with civil protection and disaster risk management agencies; and (e) coordinated training and public outreach programmes. That action plan would be implemented through coordinated regional and national projects, leveraging activities of WMO and external partners.

4.1.2 The country-level fact-finding DRR survey conducted in 2006, which provided a benchmark on Members' capacities, requirements and priorities in disaster risk management, had indicated that droughts, flash and river floods, strong winds, severe storms, tropical cyclones, storm surges, forest fires, heatwaves, landslides and aviation hazards were the top 10 hazards of concern to all Members. The survey confirmed that over 90 per cent of NMHSs needed guidance on standard methodologies for monitoring, archiving, analysis and mapping of hazards and early warning systems with a multi-hazard approach.

Strengthening NMHS' role in governance and institutional coordination in disaster risk reduction

4.1.3 With reference to the WMO guidelines on "Opportunities and Contributions of NMHSs to Disaster Risk Management Governance, National Coordination Mechanisms, and Early Warning Systems", the Council urged the completion and publication of that Secretariat initiative and invited

the Members to share the guidelines with relevant national and international stakeholders to facilitate projects through which the NMHSs could improve their roles in and contributions to disaster risk management.

4.1.4 The Council welcomed the progress of the CHy-coordinated Associated Programme on Flood Management and recognized the work being carried out for developing an integrated approach to flood management, which, inter alia, provided guidance on the role of NMHSs in governance and coordination mechanisms at the national to community levels. Particularly, it agreed that the flash flood management guidance produced for Central Eastern European countries and further work being undertaken by the Institute of Meteorology and Water Management of Poland could be shared with other countries. The Council urged other relevant technical commissions to consider similar integrated approaches for the development of guidelines for management of risks associated with other hazards. The Council also acknowledged the guidance document on warning systems for heatwaves and health that was nearing completion by CCl in cooperation with the World Health Organization. The Council advised that guidance materials should also be used in field demonstration projects and training programmes of WMO.

4.1.5 The Council appreciated the increased recognition of the roles and activities of WMO and the NMHSs in DRR planning and management, which resulted from the active participation of WMO in high-level meetings and conferences organized by the International Strategy for Disaster Reduction, the United Nations Development Programme (UNDP), the Inter-Agency Standing Committee (IASC), the World Bank and other relevant partners. The Council acknowledged the WMO Secretariat efforts in the establishment of a partnership with the World Bank and its newly established Global Facility for Disaster Reduction and Recovery for implementation of national and regional projects for strengthening contributions of NMHSs in disaster risk management and linkage to development and poverty reduction strategies. The Council also recognized the importance of WMO contributions in the ISDR system, particularly in the ISDR Management Oversight Board, ISDR Scientific and Technical Committee, as well as WMO initiatives at the international to national levels in multi-hazard early warning systems. The Council encouraged the participation of NMHSs in the Second ISDR Global Platform on Disaster Risk Reduction, to be held in Geneva from 16 to 18 June 2009. The Council underlined that such events and activities would raise awareness of the roles and contributions of the NMHSs in that area and potentially contribute to secure or increase the funding of NMHSs at the national level. It encouraged Members and requested the Secretary-General to continue participating in and contributing to such events and activities.

Provision of hazard information and analysis for risk assessment and planning

4.1.6 Concerning the preparation of statistical reports on hydrometeorological and climate-related hazards and their impacts for use by specialized agencies of the United Nations system (Resolution 25 (Cg-XV) – Natural Disaster and Mitigation Programme), the Council noted the results of the WMO DRR survey and the development of guidelines on drought, floods, and other meteorological hazards risk assessment. It urged the Secretariat to complete those guidelines and to develop a framework for the coordinated collection of hazard information from NMHSs for use in statistical reports.

4.1.7 Concerning the establishment of a Regional Drought Management Centre in Central Asia, the Council noted that WMO had taken part in the November 2007 Technical Seminar in Tashkent, Uzbekistan, on the preparation of the terms of reference for the Centre. The Secretariat of the United Nations Convention to Combat Desertification, in cooperation with the Organization for Security and Cooperation in Europe and WMO, had prepared and sent a preliminary survey questionnaire to the UNCCD National Focal Points, meteorologists and the scientific community in five Central Asian countries, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, in order to assess the need and expectation for a Drought Management Centre in the context of the UNCCD. In that regard, the Council encouraged those countries to continue the active involvement of their NMHSs in that project. Furthermore, the Council acknowledged the need for the establishment of such centres in other regions.

4.1.8 The Council recalled that hazard and disaster impact database development and risk modelling projects were being carried out by the World Bank and the Global Risk Identification Programme. In recognizing the importance of risk assessment for infrastructure and development planning, the Council:

(a) Encouraged Members to ensure that their NMHSs established mechanisms and methodologies for the provision of hazard data and metadata, analyses, value-added information and technical expertise;

(b) Agreed to link WMO projects in hazard assessment to those activities, when appropriate;

(c) Requested the Secretary-General to ensure initiation of, or participation in, risk assessment pilot projects involving the provision of hazard data, analysis and mapping, in which the contribution of NMHSs could be demonstrated.

4.1.9 Many countries had been exploring plans for renewing their nuclear energy. In that connection, the NMHSs had been requested to contribute DRR-related services and hydrometeorological information for improving the safety, selection of location and operations of nuclear facilities. Stressing the need for continuing collaboration with the International Atomic Energy Agency, the Council:

(a) Agreed to review and update relevant WMO technical publications and to arrange training on disaster risk reduction in that area;

(b) Requested relevant technical commissions concerned to address the matter, specifically with respect to reviewing WMO Technical Note No. 170 entitled "Meteorological and Hydrological Aspects of Siting and Operation of Nuclear Power Plants".

Multi-hazard early warning systems and emergency response operations

4.1.10 At its fifty-eighth session in 2006, the Council had agreed to use several demonstration projects to, among other objectives, determine whether economies and synergies could be achieved through a multi-hazard approach to Early Warning Systems (EWS). The Council realized that those projects were extending over a relatively long period and were connected with substantive financial requirements to be covered by the WMO budget, by participating Members and resources mobilized through donor agencies. In order to keep track of those demonstration projects and to ensure that the objectives were being kept in focus, the Executive Council requested:

(a) The Secretary-General to present a preliminary report to the Council at its sixty-first session in June 2009 on the status and results that would have been achieved by that time through the demonstration projects;

(b) The Secretary-General to proceed, as a matter of urgency, with the documentation and publication of lessons learned and good practices identified in the Multi-Hazard Early Warning Demonstration projects such as those in France and China (Shanghai), other good practices identified by the First Expert's Symposium, as well as the first phase of the Severe Weather Forecasting Demonstration Project;

(c) The Secretary-General to take necessary actions to ensure that issues pertaining to transboundary operational cooperation and exchange of forecasts, warnings and other information on a real-time basis through the GTS and other mechanisms be addressed in relevant Multi-Hazard Early Warning demonstration projects. That should build on experiences gained in some WMO Regions, in particular Region VI, from the projects on cross-border exchange of warnings and information implemented under Public Weather Services activities;

(d) The Secretary-General to develop a consistent framework, with key indicators, and a mechanism for the evaluation of the Multi-Hazard Early Warning Demonstration and pilot projects, including their successes, benefits and impacts as the basis for the expansion to other countries and regions;

(e) Its Executive Council Working Group on Disaster Risk Reduction and Service Delivery to assess the emerging results and conclusions as regards their viability for other countries and to make recommendations to the Council as regards to possible impacts on the strategic direction of the Disaster Risk Reduction Programme.

In view of the importance of those demonstration projects for the future direction of the WMO DRR strategy, the Council agreed to address the budgetary support requirements for those activities in the provisions available from the budget surplus.

4.1.11 The Council endorsed a new initiative for development of a multi-hazard EWS project in Central America for meteorological, hydrological and climate-related hazards. That project included governance, institutional and operational components of EWS and linked the NMHSs to disaster risk management and civil protection authorities and agencies at the national to local levels. The Council also requested that the possibility for the development of similar pilot projects in other WMO Regions be explored.

4.1.12 With reference to its pertinent decisions under agenda items 3.1 and 4.2, the Council:

(a) Re-emphasized the continuing need to improve technical capacities and methodologies for the generation of warnings and their linkage to operational disaster risk management and emergency preparedness processes with priority on severe weather, flash flood, heat-health, sandstorms and duststorms, and marine meteorological and environmental hazards;

(b) Requested that the achieved results be published;

(c) Agreed to provide technical advice and assistance for implementation, in particular in NMHSs of developing countries;

(d) Agreed that those technical capacities must be linked to operational disaster risk management and emergency preparedness processes, through well-defined projects based on user requirements;

(e) Noted the progress made towards the development of a Sand and Dust Storm Warning, Advisory and Assessment System (SDS-WAS), welcomed the initiatives in that area, called for CAS and CBS collaboration to establish SDS-WAS centres, with the appropriate operational and research capabilities, and to clarify the future of the SDS-WAS centres in the context of the GDPFS and RSMC structures;

(f) Recognized the potential benefits of collaboration between DRR and activities taking place under CAS, for more rapid transfer of the tools currently under development by the research community for improved disaster risk management and preparedness. The Council stressed that operationalization of those capacities could provide unique, new and effective solutions, particularly for the developing nations. The Council highlighted the WWRP TIGGE programme, which would provide critical information for risk quantification, and urged the involvement of TIGGE in DDR demonstration projects;

(g) Emphasized the growing application by NMHSs of probabilistic forecasts to assist forecasters to improve, in particular, the warnings of severe weather. It urged the preparation of guidelines on communicating probabilistic forecasts to users to help the effective understanding and use of that information;

(h) Agreed to address the budgetary support requirements for those activities in the provisions available from the budget surplus.

4.1.13 The Council recalled the potential increase in hydrometeorological disasters associated with climate variability and change. The Council stressed the importance of climate information from monthly to decadal timescales for climate adaptation and disaster risk management decision-making. In that regard, the Council stressed the importance of the WMO/World Bank project, funded through the Global Facility for Disaster Reduction and Recovery, to undertake “climate observations and regional modelling in support of climate risk management and sustainable development” in Africa and the need to expand that initiative to other regions. The Council urged utilization of climate information in multi-hazard EWS pilot projects.

4.1.14 The Council recalled the success of WMO after the 2004 Indian Ocean Tsunami in raising funds for upgrading the WMO GTS in eight countries in that region. It stressed the importance for WMO to develop a framework for responding promptly after a disaster event with the aim to mobilize resources for disaster preparedness and early warning systems, stressing that after a disaster, both national and international donors were especially receptive to supporting capacity-building activities in the field of disaster risk reduction. Furthermore, the Council noted that analyses, forecasts, warnings and other information available through the RSMCs and NMHSs could contribute significantly to the international humanitarian agencies' contingency planning to improve relief and response operations. In that regard, the Council also urged that, as part of that framework, opportunities for linking the humanitarian agencies to official sources of information be explored and a plan of action be developed jointly with those agencies.

4.1.15 The Council noted that specifically, EWS and services related to coastal risk management, including observations, telecommunications, detection, forecasting and warning systems related to tropical cyclones, storm surges, waves and extreme waves, sea level, tsunami and coastal flooding, depended on the cross-cutting cooperation of several scientific disciplines and programmes with specific attention being given to the needs and capabilities of least developed countries and small island developing States. The Council:

(a) Requested the regional Tropical Cyclone Programme bodies, the regional associations and the technical commissions concerned, foremost JCOMM, CHy, CAS and CBS, to set up or strengthen existing collaboration mechanisms for developing and improving the service delivery in coastal risk management;

(b) Invited UNESCO/IOC to participate in the emerging cross-cutting coordination mechanisms;

(c) Requested the Secretary-General to coordinate that approach with the IOC Secretariat with a view to advancing coastal risk management activities;

(d) Agreed to address the budgetary support requirements for those activities in the provisions available from the budget surplus.

4.1.16 The Council recalled the environmental catastrophes during 2007–2008 resulting from tropical cyclones and their associated coastal marine hazards (mainly storm surges), including tropical cyclone *Nargis* that had caused major devastation and loss of life in the most populous and low-lying areas of Myanmar in May 2008.

4.1.17 The Council recognized that storm surge warnings were a national responsibility. The Council noted that some tropical cyclone RSMC advisories did not include storm surge information. It agreed that a storm surge watch scheme would help to increase advisory lead-time and thus contribute to saving lives and properties, and would be the first step towards a comprehensive and integrated marine multi-hazard forecasting and warning system for improved coastal risk management.

4.1.18 The Council therefore:

(a) Requested the Secretary-General, in consultation with UNESCO/IOC, to facilitate development of such schemes for regions subject to tropical cyclones;

(b) Urged the regional associations concerned to incorporate a storm surge watch scheme in the tropical cyclone advisory arrangements and in the Tropical Cyclone Programme Regional Operating Plans and/or Manuals;

(c) Noting that some RSMCs with activity specialization in tropical cyclones were not equipped to function as storm surge forecast producing centres, requested the Secretary-General, based on the technical advice of JCOMM, to examine the capabilities and willingness of such tropical cyclone RSMCs and other storm surge forecast producing centres to participate in regional storm surge watch schemes, and to develop proposals for consideration by the concerned regional Tropical Cyclone Programme bodies and regional associations;

4.1.19 The Council noted that the budgetary support requirement for those activities was referenced under paragraph 4.1.15 and included under agenda item 7.2.

4.1.20 The Council recognized that sea-level observations were critical for enhancing storm surge forecasting and invited the Members to continue efforts to collect routinely and share such observations.

4.1.21 The Council recognized that storm surges were not only caused by tropical cyclones but might also originate from extratropical systems and other causes. Furthermore, the severity of impacts could be amplified owing to river flooding. In that regard, the Council requested JCOMM, CAS and CHy, in close cooperation with other relevant UNESCO/IOC subsidiary bodies, to implement the scientific/technical recommendations from the First JCOMM Scientific and Technical Symposium on Storm Surges (Seoul, Republic of Korea, October 2007), including coastal inundation and linkages to storm surge forecast and warning operations in all relevant regions.

4.1.22 The Council noted that the Fifth TCP/JCOMM Regional Workshop on Storm Surge and Wave Forecasting would be convened in Melbourne, Australia, from 1 to 5 December 2008, and that RMSC New Delhi could be considered for conducting training workshops for South Asian countries. With reference to the JCOMM Guide to Storm Surge Forecasting, the Council urged the completion and publication of the Guide, and the expansion of training workshops on storm surge and wave forecasting for the benefit of all Members exposed to those risks.

4.1.23 The Council:

(a) Recognized strengthened collaboration between WMO and UNESCO/IOC following the 2004 Indian Ocean Tsunami, for the development of tsunami warning systems. It acknowledged that WMO initiatives in Multi-Hazard EWS demonstration projects, for strengthening the operational cooperation of NMHSs with disaster risk management agencies, would be instrumental in strengthening tsunami early warning system capacities in those countries, where NMHSs were designated as the tsunami warning focal point;

(b) Was informed of a project proposal developed by the International Ocean Institute together with the Institute of Technology of Zurich, for the promotion of local community preparedness, mitigation and response in the Mekong River and South-East Asia (China, Myanmar, Cambodia, Lao People's Democratic Republic, Viet Nam, Thailand, Indonesia, Sri Lanka and India). The Council suggested that opportunities for collaboration between WMO and the International Ocean Institute be explored in that regard.

Catastrophe insurance and weather risk management within financial risk transfer markets

4.1.24 The risks of economic damage associated with hydrometeorological and climate-related hazards could be hedged through catastrophe insurance services and financial risk transfer markets. The Council stressed the importance of those new opportunities for NMHSs and particularly appreciated the WMO expert meeting held in December 2007, on Requirements of Catastrophe Insurance and Weather Risk Management Markets, involving NMHSs with experience in that area, the World Bank, the World Food Programme, the reinsurance sector and Weather Risk Management Association, to identify potential contributions of NMHSs to those markets. Those activities would, among others, require from NMHSs the provision of reliable historical and near-real-time observations of hydrometeorological parameters, related metadata and other relevant information and services. The Council considered that that would lead to new challenges as well as opportunities for strengthening the observing networks, data rescue and management systems for NMHSs, as demonstrated in Malawi and Ethiopia, and possibly to new sources for NMHSs to generate revenues through the delivery of services to those markets. The Council requested:

(a) Continued collaboration and development of an action plan with relevant partners including facilitating relevant forums and mechanisms for NMHSs to share their

experiences and transfer their knowledge, as well as to ensure the timely development of useful guidance for the NMHSs on identification of requirements and how best to meet them for those markets;

(b) The Executive Council Working Group on Disaster Risk Reduction and Service Delivery to keep that development under review and make pertinent recommendations to the Council as regards the future course of action of WMO and the NMHSs;

(c) The Secretary-General to report on the status of developments in that specific area to the Executive Council at its sixty-first session in June 2009.

The Council urged NMHSs to monitor those developments and related emerging requirements in their countries and provide relevant information to the Secretariat, as appropriate, to assist in determining further activities of WMO in that field.

Cooperation and partnership in disaster risk reduction

4.1.25 The Council reaffirmed the importance and the benefits WMO had gleaned from its institutional collaboration and partnerships with the ISDR system, UNDP, the Inter-Agency Standing Committee, the World Bank and other development and humanitarian programmes and agencies, which had been manifested through several international projects and programmes, such as the South Eastern Europe Disaster Risk Management Initiative and the project for "Climate Observations and Regional Modelling in Support of Climate Risk Management and Sustainable Development". The Council agreed that the participation in, contributions to, and joint planning with newly emerging partner projects, should be continued through the coordinated provision of technical advice and services, including from the NMHSs, and efforts should be enforced towards roll-out of such projects in other regions.

4.2 ENHANCED CAPABILITIES OF MEMBERS TO PROVIDE AND USE WEATHER AND CLIMATE, WATER AND ENVIRONMENTAL APPLICATIONS AND SERVICES *(Expected result 7)* *(agenda item* 4.2*)*

Executive Council Working Group on Disaster Risk Reduction and Service Delivery

4.2.1 The Executive Council recalled that at its fifty-ninth session in May 2007, it had established a working group to address issues specifically related to disaster risk reduction and service delivery. However, the Council had not reached final agreement on the final terms of reference of the working group or its title and had requested the chairperson of the working group, in consultation with members of the group, the presidents of the technical commissions, and the Secretary-General, to refine the terms of reference of the group, and to take the revised terms of reference into account when confirming the title of the working group. The Council considered and approved the revised terms of reference that had resulted from the consultation process and requested the working group at its first meeting to prioritize them and agree on specific and realistic deliverables to be achieved over the remaining period until Sixteenth Congress.

4.2.2 The Council adopted Resolution 5 (EC-LX) – Executive Council Working Group on Disaster Risk Reduction and Service Delivery.

User focus

4.2.3 With respect to the provision and delivery of meteorological and related services by NMHSs to the public, the Council agreed to enhance the user focus in the public education and awareness building initiatives to be taken by NMHSs and WMO. Those initiatives should include enhanced user interactions for user requirement assessments and creation of feedback mechanisms to gauge user satisfaction. That should enable NMHSs to better focus on end-user needs.

4.2.4 The Council noted that the nature of operational forecasting had been changing in many NMHSs. Numerical forecasting techniques and systems had been implemented in

operational environments with forecast systems run on workstations and local networks. The Council endorsed the World Weather Research Programme proposal for a technical workshop focused on issues associated with the changing environment, for example, the scope of forecasting systems, end-to-end user requirements, visualization, the role of human forecasters and the potential for automation. It requested the involvement of other relevant WMO Programmes in that activity and that its outcomes be published.

4.2.5 With respect to the provision of user-focused marine meteorological and oceanographic services as documented in the International Convention for the Safety of Life at Sea, the Council requested to enhance collaboration with international organizations and other entities representing users' interests, such as the International Maritime Organization (IMO), International Hydrographic Organization, International Association of Oil and Gas Producers, International Chamber of Shipping, and national and international high seas search and rescue and hazardous materials (Hazmat) response operations. Those efforts should improve the collection and assessment of requirements for products and services identified by marine users and improve service delivery to meet those requirements including the development of guidelines for promulgation of maritime safety information.

4.2.6 The Council acknowledged the draft guidance document on Heat–Health Warning Systems, which had been presented to Members at Fifteenth Congress, and its potential benefits for NMHSs in developing heat–health warning services. The Council urged the CCl Expert Team on Climate and Health to complete the review process with WHO and publish the guidance document as a matter of priority.

Improved products and services

4.2.7 Nowcasting was seen as an essential tool in the generation of warnings of severe weather phenomena, especially in the tropics owing to the isolated nature of heavy precipitation. The Council stressed that it was critical that nowcasting capabilities be refined and extended to developing countries and least developed countries. The Council requested WMO to advance the development of nowcasting capabilities and their implementation in NMHSs through initiatives of the PWS/WWRP Joint Nowcasting Applications and Services (JONAS) Steering Committee, the Shanghai Integrated Multi-hazard Early Warning System Demonstration Project and the forecasting services that had been developed for the 2008 Olympics in Beijing.

4.2.8 Probabilistic forecasts were being utilized by only a few NMHSs, and their communication to and application by users were complex undertakings. The Council urged Members to make maximum use of the recently published WMO *Guidelines on Communicating Forecast Uncertainty* (WMO/TD-No. 1422) and requested that capacity-building activities aimed at promoting and facilitating the use of probabilistic forecasts be continued in order to improve NMHSs' service products.

4.2.9 The Council recognized the potential service improvement aspects of the Shanghai Multi-hazard Early Warning System Demonstration Project and the Severe Weather Forecasting Demonstration Project. The Council requested that experiences and lessons learned be extracted and documented, with a view to assist other Member countries in developing EWS solutions for mega-city risk management, related emergency warning and response systems and for improving the service delivery functions of NMHSs. The Council emphasized the need to give full attention to the end-user focus in those projects by strengthening the delivery components, including the dissemination and understanding by the public and specialized user sectors of the products generated. The Council agreed to address the budgetary support requirements for those activities in the provisions available from the budget surplus.

4.2.10 The Commission for Agricultural Meteorology had stressed the importance of increasing the density of agrometeorological station networks to improve the spatial resolution and quality of agrometeorological products. The Council supported the recommendation from the meeting of the Implementation Coordination Team on Agrometeorological Services (Hanoi, Viet Nam, 12–14 December 2007) that the NMHSs should assist, support and collaborate with other national,

regional and international institutions that established and maintained agrometeorological stations. The Council adopted Resolution 6 (EC-LX) – Establishment of a National Agrometeorological Station Network.

4.2.11 The Council requested the Commission for Agricultural Meteorology to address the issues of biofuels and food security and noted that those issues would be dealt with by the Commission's Implementation Coordination Team on Support Systems for Agrometeorological Services and that a report would be made to the Executive Council at its sixty-first session in June 2009.

4.2.12 The Council endorsed the initiative of WWRP and GDPFS to assist Members to gain better access to services related to sandstorm and duststorm prediction and warnings through capacity-building and improved operational arrangements. The Council welcomed the establishment of the two SDS-WAS regional centres and requested CBS to collaborate with the Commission for Atmospheric Sciences to develop and establish operational procedures to determine the future role of those centres, and the process for designating SDS-WAS centres. The Council encouraged Members to access the prediction and reanalysis products provided by those centres, and to periodically verify the accuracy of information on the services they provided bearing in mind that those products were experimental.

4.2.13 The Council invited Members to advance the development of regional downscaling techniques and regional climate modelling, and requested that the Secretariat distribute to Members outcomes of Regional Climate Modelling workshops. The Council recognized that the effectiveness of the services provided by NMHSs greatly depended on the availability and usage of well-tested decision support tools including tools for the forecast of impacts. The Council noted the need to develop and systemize such tools and requested the Executive Council Working Group on Disaster Risk Reduction and Service Delivery to study the issue.

4.2.14 The Council endorsed the recommendation of the IPY Inter-Commission Task Group that the CLIPS concept be extended to polar regions, with the aim to improve NMHS products and services for people living and working at high latitudes, as a WMO contribution to the IPY legacy. It urged Members with polar interests to contribute to scoping the feasibility of the establishment of a polar climate outlook forum.

4.2.15 The Council recommended that Members develop air quality forecasting and dissemination skills as part of expanding and improving their service products. It encouraged WMO to continue the GAW Urban Research Meteorology and Environment (GURME) project and to assist Members in developing capability in air quality forecasting and delivering related services to users including public information activities.

4.2.16 The Council endorsed the establishment of a trust fund to support the quadrennial WMO Scientific Conference on Weather Modification and the Expert Team on Weather Modification and requested Members, especially those engaged in operational weather modification activities, to contribute to the fund. It also requested the Secretariat to notify Members, and to report on the contributions and the supported activities to the Council at its sixty-first session in June 2009.

4.2.17 The Council deemed it necessary to develop a system for the international exchange of information on extreme environmental events related to the long-range transport of the pollutants resulting from wildfires.

Service delivery

4.2.18 The Council endorsed the recommendations of the International Symposium on Public Weather Services: A Key to Service Delivery (Geneva, 3–5 December 2007) as guidance for the future evolution of the public weather services and the corresponding WMO Programmes. The Council reiterated that the public weather services should work towards increasing the availability,

dependability, usability and credibility of weather, climate and water information and contribute to food security, water availability and public health.

4.2.19 The Council acknowledged that much had been done through training and guidance materials to assist Members with their endeavours to improve their delivery of services. However, some Members in developing and least developed countries still needed much more and intensified assistance in dealing with challenges in public service delivery in order to keep pace with and contribute to the national sustainable development. The Council endorsed the new approach to building capacity of NMHSs using the "Learning Through Doing" concept, developed by the Commission for Basic Systems, in selected target sectors such as health, agriculture, energy and transport. It requested promoting the implementation of projects based on that concept and agreed to address the budgetary support for the project in the provisions available from the budget surplus 2008–2009.

4.2.20 As regards the very effective and highly frequented WMO websites for the Severe Weather Information Centre (SWIC) (http://severe.worldweather.wmo.int/) and the World Weather Information Service (WWIS) (http://worldweather.wmo.int/), the Council urged Members to increase their contribution of information to the websites and requested the Secretary-General to continue operation of those websites.

4.2.21 The Council suggested to provide a link between the above-mentioned websites and PreventionWeb (www.Preventionweb.net), which was a comprehensive disaster risk reduction website developed by ISDR so that Members and disaster managers could share information easily for mutual benefits to reduce disaster risk at the country level.

4.2.22 As regards the project on the provision of site-specific forecasts in the medium-range, developed in RA II by Japan, the Republic of Korea and Hong Kong, China, the Council agreed to explore repeating that project also in other WMO Regions to strengthen the capabilities of NMHSs of developing countries in that specific forecasting service.

4.2.23 Recognizing the increased use in the Arctic region by the marine community (including commercial, military and scientific), and noting the coordinated initiative by WMO, IMO and the International Hydrographic Organization to expand the Global Maritime Distress and Safety System (GMDSS) and the World-Wide Navigational Warning Service into the Arctic waters, the Council approved the establishment of five new METAREAs for the Arctic region with the same boundary limits as the corresponding NAVAREAs, that had been approved at the 83rd session of the IMO Maritime Safety Committee (Copenhagen, Denmark, October 2007). The Council welcomed and endorsed the commitments by the following NMHSs to serve as a METAREA Issuing Service as follows:

- Environment Canada for METAREAs XVII and XVIII;
- Norwegian Meteorological Institute for METAREA XIX;
- ROSHYDROMET for METAREAs XX and XXI.

4.2.24 The Council noted with appreciation the expansion of the GMDSS-weather website to include navigational warnings in the various NAVAREAs (http://weather.gmdss.org/navareas.html). The Council therefore thanked all the contributors, particularly Météo-France, which was managing and hosting the website.

4.2.25 In the context of maritime safety services, the Council emphasized the continuing importance to mariners of receiving graphical products via radio transmissions. The Council noted the gradual demise of high-frequency radiofax as a means of disseminating those products and the considerable resources required for software development and distribution in developing alternative methods of transmission, as well as for the ongoing communication costs. It therefore requested JCOMM to continue researching methods for transmitting graphical products to marine users, and requested the Secretary-General to promote resource mobilization to further develop those activities and partnerships through national and international support.

4.2.26 With a view to the continuing requirement for close collaboration between the NMHSs and the various users of aeronautical meteorological services in order to strengthen the NMHSs in their service delivery capabilities and to sustain cost recovery from those services, the Council urged Members, the regional associations and the Commission for Aeronautical Meteorology to develop and improve the working relationships with all relevant partners and user groups, and to cooperate closely in the development of future service provision on a more regionalized basis.

4.2.27 With reference to ICAO Amendment 74 to Annex 3 – *Meteorological Service for International Air Navigation*, Standards and Recommended Practices, which had been adopted by ICAO on 16 July 2007, the Council consequently decided to align the WMO *Technical Regulations* (WMO-No. 49), Volume II, [C.3.1] and [C.3.3], accordingly and adopted Resolution 7 (EC-LX) – Amendments to the WMO *Technical Regulations* (WMO-No. 49), Volume II – Meteorological Service for International Air Navigation.

Development of the WMO Quality Management Framework

4.2.28 The Council appreciated that the acceptance process of a formal agreement between the Organization for Standardization and WMO with the aim to grant WMO the status of a standardizing organization in the field of meteorology and related activities would be concluded at the end of June 2008 and be available for distribution to Members. Such a status would enable Members to use the WMO technical publications in the same way as ISO documents in their quest for ISO 9000 certification, which would greatly facilitate and simplify that process for them and reduce costs. In that connection, the Council re-emphasized the requirements for developing suitable technical publications to provide the necessary advice to technical commissions in reviewing the existing documents and adjusting them to Quality Management System (QMS) requirements and preparing and publishing the necessary updates. It therefore agreed to address the budgetary support for those activities in the provisions available from the budget surplus. With regard to the ability to trace the instrument record, the Council suggested to study the potential benefit of certification not only for ISO 9000 but also for ISO/IEC 17025:2005.

Quality management system for aviation weather forecasting

4.2.29 The Council recognized that developing countries in particular would be facing a very serious situation because of the planned elevation by ICAO of the implementation of an ISO recognized Quality Management System to a standard in ICAO Annex 3 by 2010. Although the cost for the implementation of such systems could likely be recovered from aviation, the tight deadline and the necessary up-front investments for documentation and adaptation of operational processes would pose a significant challenge to many Members. The Council also recognized the need to mobilize resources in order to enable developing and least developed countries to meet the QMS standards before the deadline. Noting the request of Fifteenth Congress to implement a QMS pilot project in at least one developing country, the Council endorsed the plan to implement such a pilot project in the Tanzania Meteorological Agency and requested that the documentation developed during that process be shared with other developing countries with a view to facilitating and expediting QMS implementation. The president of CAeM reminded the Council that WMO documentation and guidance was available to Members for QMS implementation.

4.2.30 With respect to the WMO Quality Management Framework, the Council pointed out that:

(a) ICAO Annex 3 – *Meteorological Service for International Air Navigation*, 2007 edition, contained recommendations concerning the presentation, quality control and use of meteorological information to ensure regulated activities between parties supplying and using meteorological information in respect of matters having an impact on the provision of meteorological service to international air navigation;

(b) The transformation of the Quality Management System based on ISO 9001 into a standard, scheduled by ICAO for November 2010 for the provision of meteorological services to aviation, was a cause of concern to many WMO Members, particularly the least developed countries. That meant that WMO would have to pool all existing

technical resources and the efforts of WMO technical commissions and the Inter-commission Task Team on Quality Management Framework in order to simplify the transformation into an ICAO-recognized, ISO-based Quality Management System;

(c) As an overall strategy, the WMO Quality Management Framework determined WMO policy on quality, quality management principles, role of WMO constituent bodies, approaches to quality management issues between technical commissions and capacity-building for NMHSs. The establishment of corresponding WMO standards/regulations would speed up the certification of aviation meteorological service providers and would increase user confidence in the quality of the services provided;

(d) Well-founded, timely guidance would be an enormous help to the NMHSs of WMO Members in reducing the risk of losing their position in the provision of meteorological services to aviation should the transformation into an ICAO-recognized, ISO-based QMS, scheduled for 2010, prove unsuccessful. Corresponding WMO technical publications containing recommendations on adaptation to the expected changes in services would also help Members to reduce gaps in capabilities;

(e) The training of staff with skills in the new QMS in accordance with ISO standards should become a high priority with the exchange of positive experience and knowledge between Members in the field of ISO-9001 certification and the revised WMO technical publications, particularly those concerning observations and data processing, in order to align WMO technical regulatory documents with the standard ISO 9001.

4.2.31 The Council recognized that the WMO Quality Management Framework would be more complete and clear if WMO standards/regulations were established for all WMO Members in respect of quality control and assurance requirements for the provision of meteorological service to international air navigation. To ensure timely implementation, scheduled for 2010, of the ICAO-recognized, ISO-based Quality Management System for service provision, the WMO Secretariat needed to adopt it as a high priority in processing WMO standard/regulation data and give that process all available resources within the WMO technical commissions and the Inter-Commission Task Team on Quality Management Framework.

4.2.32 The Council decided that the process would be considerably speeded up by the official agreement between ISO and WMO recognizing WMO as the organization for standardization in the field of meteorology and related areas.

4.2.33 The Council stressed that the overall coordination of work on establishing a WMO standard/regulation on meteorological service to international air navigation for inclusion in the WMO Quality Management Framework should be carried out by the Secretary-General.

4.2.34 With reference to the agreement between WMO and the International Organization for Standardization, the Council decided to align WMO regulations with relevant ISO standards and adopted Resolution 8 (EC-LX) – Establishment of a WMO standard/regulation on meteorological service for international air navigation for inclusion in the WMO Quality Management Framework.

Socio-economic issues related to weather, climate and environmental applications

4.2.35 The Council recognized the value of the mechanism set up by the Secretary-General in the form of the WMO Forum: Social and Economic Applications and Benefits of Weather, Climate, and Water Services to address socio-economic-related issues. It requested that optimum use be made of that mechanism when addressing the follow-up actions arising from the WMO International Conference on Secure and Sustainable Living: Social and Economic Benefits of Weather, Climate and Water Services (Madrid, Spain, 19–22 March 2007) in the framework of the Madrid Action Plan.

4.2.36 The Council endorsed the recommendations arising from the first meeting of its Working Group on WMO Strategic and Operating Planning (Geneva, 27–29 February 2008), on how to advance delivery of the Madrid Action Plan. Those included the need to:

(a) Undertake work on the estimation of socio-economic benefits, for example, a need for improved methodologies and economic models that were transferable among countries. Such models should deal with various sectors, address the needs of users, and allow for regional analyses in the estimation of socio-economic benefits;

(b) Involve regional associations in the advancement of the process, especially with a view to obtaining a better understanding of the situations across regions, and if possible at the country level;

(c) Integrate relevant Madrid Action Plan activities and projects into the Secretariat Operating Plan in order to feature the Plan in the overall planning of WMO;

(d) Incorporate relevant Madrid Conference issues into the World Climate Conference-3 to be held in 2009;

(e) Liaise with partner organizations to develop user-friendly methodologies and economic models for estimating benefits of weather, climate and water services to different social and economic sectors, and to develop courses and training materials for that need;

(f) Develop methods for measuring progress in implementation of the Madrid Action Plan. That should be done by monitoring the progress made in delivery of relevant activities.

4.2.37 The Council recognized that with respect to assessing, quantifying and demonstrating the benefits of weather, climate and water services to user sectors such as health, energy, tourism, transport and urban environment, many NMHSs would require assistance and guidance. It urged Members to make optimum use of the decision-support tools provided on the WMO website (http://www.wmo.int/pages/prog/amp/pwsp/socioeconomictools.htm) and requested the Secretary-General to give priority to the following supporting activities:

(a) Pilot projects to assist NMHSs with techniques to enhance services to users, such as those already initiated in Peru and Chile;

(b) Adaptation, application and publication of existing and development of new methodologies for the evaluation and demonstration of the socio-economic benefits;

(c) Production of guidance materials on user–provider dialogue.

Human resource capacity-building in service delivery

4.2.38 The Council recognized that in addition to building technical capabilities, NMHSs were required to strengthen their abilities in communicating information and knowledge to their user communities including government officials and decision makers. It further recognized the need for the meteorological community to take advantage of the application of social sciences to address weather- and climate-related social problems and requested the Secretary-General to give priority to assisting Members to:

(a) Educate NMHS managers in effective communication with government officials, politicians and decision makers in different user communities;

(b) Educate NMHS staff on better communication skills with end-users;

(c) Educate users and intermediaries on understanding products, services and information provided by NMHSs and their application to decision-making;

(d) Bring the importance of the role of social sciences in applications of meteorology and related disciplines to the attention of Members in various WMO forums;

(e) Develop a course to be offered at the WMO Regional Training Centres on effective communication to users of meteorological products.

4.2.39 The Council noted good examples of the activities above, including the NMHS–user forums and the training workshops on economic and social benefits assessment tools that had been organized as kick-off activities in the framework of the two pilot projects in Peru and Chile, the CLIBER project, which had provided a framework for NMHS contacts with government officials, politicians and users in 11 Latin America countries and a communication training workshop in the Dominican Republic.

4.2.40 The Council further considered it necessary to give more room to subjects related to public service delivery in the training programmes conducted at WMO Regional Training Centres and to include such topics in the WMO training curricula.

4.2.41 The Council acknowledged the benefits to the general public in rural communities of the Radio Internet (RANET) communication initiative and agreed to continue supporting the initiative.

4.2.42 The Council endorsed the recommendation of the First JCOMM Scientific and Technical Symposium on Storm Surges (Seoul, Republic of Korea, October 2007) that WMO should assist Members to enhance public awareness of the risks of coastal inundation and its associated hazards by using materials available from UNESCO/IOC and by developing outreach materials and training activities.

4.2.43 Owing to the demands on NMHSs to improve the air quality-related services to decision makers and the general public, it would be important to accelerate the provision of the human resource development activities organized within GURME. The Council agreed that training workshops should be organized in the WMO Regions or subregions to make possible the expansion of air quality forecasting to countries that required the service but lacked expertise.

4.2.44 The Council supported the continuing activities aimed at improving the knowledge, skills and experience of WMO-RTC and NMHS trainers in the area of education and training as well as the application of distance learning methods with a view to improving service provision and delivery by Members.

4.2.45 The Council noted that the Executive Council Panel of Experts on Education and Training at its twenty-third session had commenced planning for the eleventh WMO Education and Training Symposium to be held in the first quarter of 2010. The Council welcomed the offer of New Zealand to host the Symposium in RA V, the first time that the Symposium would be held in the southern hemisphere, and requested the Secretary-General to finalize the location of the Symposium following further consultation with Members that offered to host the event. The suggested theme for the Symposium was "New Approaches to the Education and Training for Meteorological and Hydrological Forecasters". The Council requested the Secretary-General to include the output of the Executive Council Panel of Experts on Education and Training key performance targets and activities into the WMO Operating Plan.

4.2.46 The Council strongly supported the work of the Executive Council Panel of Experts on Education and Training to assist Members in ensuring that their personnel providing meteorological services for air navigation met the requirements of the *Guidelines for the Education and Training of Personnel in Meteorology and Operational Hydrology* (WMO-No. 258), Supplement No. 1: Training and Qualification Requirements for Aeronautical Meteorological Personnel. The timelines suggested by the Panel were consistent with ICAO plans, but were likely to cause significant difficulties for some Members. The Council therefore requested the Secretary-General to support the Panel to work through two task teams to:

(a) Review the implementation timelines suggested by the Executive Council Panel;

(b) Provide clarification of the meaning of relevant items of text contained in WMO-No. 258 and Supplement No. 1, including the term “or equivalent” and its application in Supplement No. 1, and recommend revisions as necessary;

(c) Investigate means of enhancing the availability of university-level education opportunities for meteorological personnel.

The Council requested that the status of Supplement No. 1 to WMO-No. 258 should be reviewed by appropriate WMO bodies, and the implementation plan and any revision recommendations should be presented to its sixty-first session in June 2009 for consideration of adoption. The Council therefore proposed that when a final decision on the recommendations would be reached by ICAO and WMO, the Members were to be informed through a joint letter from the Secretaries-General of both Organizations addressed to the relevant Ministers in order to ensure national action and compliance. The Council welcomed the offer by the Japan Meteorological Agency to contribute to the work of the Executive Council Panel of Experts on Education and Training Task Team.

Future role and structure of the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology

4.2.47 With respect to JCOMM, the Council recognized that:

(a) The results-based WMO Strategic Plan (Geneva, May 2007) made it necessary that all technical commissions adjusted their work programme with a view to aligning their deliverables and programme implementation plans to the appropriate expected results, and that JCOMM had already begun that process;

(b) The work programme of JCOMM, within its current mandate as defined by its terms of reference, was expanding, with substantial effort required in emerging areas such as operational ocean services, physical components of coastal Global Ocean Observing System implementation, multi-hazard marine warning systems, and climate change and climate change adaptation in coastal areas;

(c) There were naturally resource issues for JCOMM associated with adequately addressing those new activities, compounded by the limited regular budget resources which both WMO and UNESCO/IOC were able to allocate to support the work of the Commission, together with an unavoidable reduction in staff support to the Commission in the UNESCO/IOC Secretariat;

(d) Despite those resource issues, JCOMM was still on track to achieving a substantial proportion of the expected results and desired outcomes by its third session to be held in 2009;

(e) At its second session, JCOMM, in the JCOMM Strategy approved by that session, had proposed a review of the Commission during the current intersessional period, to provide advice on how well JCOMM was addressing its mandate, and, as necessary, to suggest what internal changes might be made to allow it to undertake new priority tasks effectively, as well as maintain key ongoing programme activities such as maritime safety services, given the likely available resource base. The sixth session of the JCOMM Management Committee (Paris, December 2007) had requested the Secretariats to bring that to the attention of the Executive Councils of both parent Organizations, with a view to obtaining their endorsement.

4.2.48 With respect to the above issues the Council noted that a similar decision was being considered by the UNESCO/IOC Executive Council (Paris, June 2008), and requested the Secretary-General to arrange that study in close coordination and collaboration with UNESCO/IOC.

4.2.49 The Council noted that an increasing number of NMHSs and global weather prediction centres were running real-time coupled atmosphere–ocean models, and in some northern countries, with inclusion of sea ice. The Council further noted that many challenging scientific issues, such as coupling methodologies, coupled atmosphere–ocean data assimilation, heat, salt and water vapour surface fluxes exchange, internal dynamics and thermodynamics of both systems, and biogeochemical feedbacks, needed to be further explored, in full collaboration between the two communities: meteorological and oceanographic. The Council therefore stressed that the review of JCOMM be viewed as an important strategic issue, and that proper input, including from science, be included in the review process.

4.2.50 The Council recognized that regular budget resources were not available to support the study and therefore appealed to Members to contribute extrabudgetary resources necessary to carry out the study.

Update of the WMO Weather Modification Statement and Guidelines – CAS

4.2.51 Acting upon the request of Fifteenth Congress (*Abridged Final Report with Resolutions of the Fifteenth World Meteorological Congress* (WMO-No. 1026), general summary, paragraph 3.3.1.6) that the Commission for Atmospheric Sciences present to the sixtieth session of the Executive Council in 2008 its decision on updates to the WMO Statement on Weather Modification, including an Executive Summary and the WMO Guidelines for the Planning of Weather Modification Activities, the Council approved the process leading to the revised text given in Annex IV to the present report as proposed by the Commission. Considering the rapid advances being made in cloud/precipitation research and observational technology instrumentation, it recommended that CAS implement a regular review of those documents through the Expert Team on Weather Modification Research. It also requested that the most up-to-date documents be presented to the Commission at the fifteenth session in 2009. Furthermore, the Council requested that in the next regular review by the Expert Team on Weather Modification Research, environment compatibility on various weather modification activities, for example, fog-dispersal, precipitation enhancement, hail suppression and other phenomena, be reflected.

5. PARTNERSHIP (Strategic thrust) *(agenda item 5)*

5.1 COOPERATION WITH THE UNITED NATIONS SYSTEM *(Expected result 8)* *(agenda item 5.1)*

5.1.1 The Executive Council noted the actions taken by the Secretary-General to strengthen the cooperation between the Organization and the United Nations system through active support and participation in relevant United Nations events, including the regular sessions of the United Nations General Assembly, the United Nations Chief Executives Board for Coordination and the United Nations inter-agency groups, the Conferences of the Parties to the United Nations Framework Convention on Climate Change, the United Nations Convention to Combat Desertification and other conventions, as well as high-level debates, consultations and other events concerned, and the continued efforts to promote the role of the Organization and NMHSs in the implementation of the internationally-agreed development goals.

5.1.2 The Council took note of the United Nations General Assembly resolutions adopted at the sixty-second session addressed to the specialized agencies and relevant to WMO:

> 8, 28, 86, 91, 92, 94, 98, 100, 101, 111, 112, 137, 180, 182, 189–197, 199–201, 203, 206–209, 211, 213–215, 217, 226–228, and 234.

The Council requested Members and the Secretary-General to ensure appropriate follow-up to those resolutions.

5.1.3 The Council noted with satisfaction the high quality of support provided by WMO and NMHSs to the implementation of United Nations conventions and invited the Secretary-General to continue provision and raise awareness on WMO comprehensive reports and assessments to the parties of conventions, and to widen and strengthen partnerships, specifically with United Nations agencies, non-governmental organizations, scientific organizations and the private sector. The Council addressed the WMO role in the United Nations coordinated action on climate change, and its role in disaster risk reduction and in implementing the Hyogo Framework for Action.

5.1.4 With respect to cooperation with the United Nations Framework Convention on Climate Change, the Council invited Members to actively participate in the relevant follow-up to the Bali Action Plan as adopted by the Conference of the Parties at its thirteenth session in 2007, in particular in the area of enhanced action on adaptation. The Council noted the Bali Action Plan,

following e-mail communication or teleconferences, and that the budget is set up accordingly, in order to have work assigned appropriately;

- That evaluation of each subsidiary body and involved experts be conducted by the appropriate chairpersons according to the rules of results-based management, in particular to decide on the continuation of an entity or the membership of an expert, taking into consideration the need for a balance between continuity and new activities and experts. This evaluation is also important for the experts involved, especially for the recognition of their work by their Permanent Representatives;

- That should an expert not contribute at the expected level, or in case of a totally silent expert, there should be a mechanism, for example led by management groups or relevant open programme area groups, known to all appointed experts, allowing for their replacement, for example after one year of insufficient contribution;

- That peer-reviewed reports produced should be published as soon as possible, at least on subsidiary body websites, preferably in appropriate publication series with the names of contributors, for monitoring purposes and in order to recognize the work of the authors.

Recognition:

- That Permanent Representatives should give recognition to their staff of work conducted for WMO activities. As in most National Meteorological and Hydrological Services an individual evaluation procedure is in place for rating staff members, the contribution to WMO work should be included in the list of criteria used;

- That other incentives are needed, such as issuing certificates or addressing letters of appreciation to the experts concerned, with copy to their Permanent Representatives. This should be made generally at technical commission or regional association president level, following proposals by chairpersons of open programme area groups or working groups. Applicable rules should be established by WMO and templates should be designed.

Resolution 5 (EC-LX)

EXECUTIVE COUNCIL WORKING GROUP ON DISASTER RISK REDUCTION AND SERVICE DELIVERY

THE EXECUTIVE COUNCIL,

Noting:

(1) The WMO Strategic Plan (WMO-No. 1028),

(2) Resolution 5 (EC-LIX) – Executive Council Working Group on Disaster Risk Reduction [and Service Delivery],

(3) Resolution 25 (Cg-XV) – Natural Disaster Prevention and Mitigation Programme,

(4) Resolution 16 (Cg-XV) – Public Weather Services Programme,

(5) Resolution 6 (Cg-XV) – Tropical Cyclone Programme,

(6) Resolution 18 (Cg-XV) – Aeronautical Meteorology Programme,

(7) Resolution 19 (Cg-XV) – Marine Meteorology and Oceanography Programme,

(8) Resolution 29 (Cg-XV) – Evolution of National Meteorological and Hydrological Services and WMO,

Noting further that weather, climate and water information and risk assessment are important factors in decision-making in many socio-economic sectors,

Recognizing that disaster risk reduction and service delivery are cross-cutting issues requiring the expertise of weather, climate and water professionals and also the expertise of social and economic specialists and sector-based experts,

Decides to establish an Executive Council Working Group on Disaster Risk Reduction and Service Delivery with the following terms of reference:

(1) To provide guidance on strengthening cooperation among the technical commissions and the regional associations in the delivery of weather-, climate- and water-related services to users, and to ensure effective coordination with relevant Executive Council subsidiary bodies;

(2) To develop an effective WMO Policy Framework for Service Delivery;

(3) To ensure that WMO addresses societal issues as expressed in the United Nations Millennium Development Goals, especially including sustainable development and poverty alleviation in its service delivery;

(4) To provide guidance on strengthening partnerships at the national to international levels between providers of weather-, climate- and water-related products and services and, inter alia, users (customers) in the public and private sectors, the media, academia, social and economic sciences, international and intergovernmental agencies, and non-governmental organizations;

(5) To advise on the need for capacity-building for information and outreach relevant to improving service delivery;

(6) To recommend strategies and priorities for research and development as well as infrastructure (operational capability and reliable dissemination channels) relevant to and enabling effective service delivery;

(7) To assess the effectiveness of programmes in improving services down to the end-user level, and advise on corrective steps where necessary;

(8) To provide guidance on development and implementation of the WMO Disaster Risk Reduction Programme, in particular with respect to:

   (a) A coordination framework for the Disaster Risk Reduction Programme involving technical commissions and regional associations, Members and external partners, such as United Nations bodies, other international organizations and donor institutions, particularly related to the role and responsibilities of National Meteorological and Hydrological Services in:

      (i) Coordination mechanisms for disaster risk reduction;

      (ii) Hazard analysis and risk assessment on all timescales;

      (iii) Multi-hazard early warning systems;

      (iv) Cooperating with financial risk transfer markets related to natural disaster risk (catastrophe insurance);

      (v) Cooperation with civil protection agencies, disaster risk management authorities and other stakeholders involved in disaster risk reduction;

(vi) Service delivery to disaster risk reduction communities under a multi-hazard framework;

(vii) Capacity-building and public education;

(b) Aligning the Disaster Risk Reduction Programme with the Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters, and the strengthened International Strategy for Disaster Reduction system;

(c) Assessing the effectiveness of projects related to disaster risk reduction and ensuring corrective steps when necessary;

(9) To invite, as appropriate, relevant ISDR-system agencies, and partners in service delivery, to participate in the work of this Executive Council working group;

(10) To address other matters relating to disaster risk reduction and service delivery as requested by the Executive Council;

Authorizes the Working Group to establish sub-groups and task teams as and when required;

Requests the Secretary-General to support the work of the Working Group.

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Note: This resolution replaces Resolution 5 (EC-LIX), which is no longer in force.

Resolution 6 (EC-LX)

ESTABLISHMENT OF A NATIONAL AGROMETEOROLOGICAL STATION NETWORK

THE EXECUTIVE COUNCIL,

Noting:

(1) That the Commission for Agricultural Meteorology at its fourteenth session, held in New Delhi, India, from 28 October to 3 November 2006, stressed the importance of increasing the density of agrometeorological station networks to improve the spatial resolution and quality of agrometeorological products,

(2) That the Implementation Coordination Team on Agrometeorological Services of the Commission for Agricultural Meteorology met in Hanoi, Viet Nam, from 12 to 14 December 2007,

(3) That the Implementation Coordination Team discussed the issue of density of agrometeorological station networks at the national level,

(4) That the network of agrometeorological stations around the world, especially in the developing countries, is currently on the decline and given the pressing need for improved agrometeorological services and applications, it is crucial that this issue be addressed with some degree of urgency,

(5) That weather and climate risks to agriculture are growing rapidly, especially in the regions where rain-fed agriculture is the norm, and that climate change, especially in the arid and semi-arid regions in the tropics, is adding an additional dimension of increasing frequency of extreme events such as droughts and floods,