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OPAG on Data Processing and Forecasting Systems

(Submitted by the Secretariat and Chair of OPAG on DPFS)

Summary and Purpose of Document

This document contains a summary of outcome of the Fourteenth WMO Congress conclusions and decisions on DPFS programme

ACTION PROPOSED

The CBS Management Group is invited to note the relevant Cg-XIV decisions and conclusions on DPFS programme and activities and to take them into account in developing its future work programme.

Cg-XIV - DPFS - Summary of outcome of Congress conclusions and decisions on DPFS programme

Congress encouraged Members to invest in NWP activities that were an indispensable tool for weather forecasting so as to contribute effectively to social economic development.

1. *EPS forecasting methodology and progress*

As the amount of EPS grid fields would increase, the need for additional bandwidth in telecommunication and for software to extract information would also increase.

Congress urged Members to give priority to implementation and related technological co-operation activities to enhance facilities and human resources for data processing and forecasting systems and related communication services.

2. *Severe weather forecasting*

Congress agreed that improvements of severe weather forecasting would be facilitated through the use of EPS information, other NWP products and products based on remote sensing and nowcasting tools and invited CBS to further enhance its co-ordination activities in the severe weather area.

To detect the outbreak of fine scale severe weather events such as tornadoes, and to anticipate their development, it was important to stress the importance of mesoscale prediction systems and nowcasting techniques.

Congress urged operational implementation of research results on nowcasting. Significant research was still required to improve forecasts (location and timing) of fine scale severe weather such as severe thunderstorms, tornadoes, hailstorms, downbursts.

Congress urged implementation and/or enhanced collaboration between the NMHSs to optimize the use of meteorological forecasts and warnings of intense precipitation in assessments of severe hydrological events such as floods, as well as rain induced landslide. It urged Members as a matter of highest priority to develop and/or enhance linkages with disaster management agencies to assure effective community response to severe weather forecasts and warnings.

3. *Emergency response Activities*

Congress urged all Members to actively engage in the implementation of operational Internet and Web facilities in relevant NMHS facilities and services. The importance of backup operational redundancy in the implementation of such facilities was emphasized. Future priority issues included exploring use of EPS and definition of a standard set of general meteorological products to be generated for use in the interpretation of transport model products and the provision of backward trajectories to identify the origin of observed pollutants.

Congress supported the view that RSMCs able to do so should explore development and application of transport models to non-nuclear emergencies with a view to providing such services and contributing to capacity building of such facilities and tools in NMHSs for response to local and national scale events. Congress agreed that CBS should include those aspects as part of its future Emergency Response Activities programme.

4. *Role of NMHSs in ERA*

Congress agreed that RSMCs with the operational capability to do so, should consider the development and application of such models with a view to responding to volcanic gas and other aspects of eruptions with impact on public health.

5. *Co-operation with CTBTO*

In the context of the verification of the Comprehensive Nuclear Test-Ban Treaty by means of Atmospheric Transport Modelling, Congress noted with satisfaction that co-operation between the WMO RSMCs and the CTBTO International Data Centre (IDC) and other areas of mutual collaboration had been agreed upon. Congress considered and adopted the Agreement between the Preparatory Commission for CTBTO and WMO.

6. *Seasonal to interannual forecasts*

Based on conclusions of WMO working and constituent bodies, Congress noted that a reliable operational global long-range forecast (LRF) system should include three different types of centres: The Global Producing Centres (GPCs); The Regional Climate Centres (RCCs); The National Meteorological Centres (NMCs) and /or Climate Centres.

Congress urged that extensive and organized research efforts should be supported by the research communities for establishing the scientific basis and the enhancement of necessary infrastructure and skill for long-range forecasting. Congress urged all Members to actively participate in co-ordinated sharing of products as either users or producers of LRF information and to provide feedback from users to production centres to improve long-range forecasting skills and contribute to the social economic development of all Members.

Congress noted with regard to the responsibilities for verification that CBS was to develop and implement verification schemes for Seasonal to Interannual (SI) forecasts in collaboration with CAS, while CCI would provide leadership in the development and implementation of post-processed products, including their verification, to end users.

Congress urged all Members to actively participate in verification activities as either users or producers of LRF verification information to assure the use of the best available products.

7. *Regional user requirements*

Congress noted that there was a growing interest by all regions in the utilization of NWP products, and that many Members required an opportunity for workshops or training seminars on nowcasting, EPS, and modelling. Several Members in all regions were interested in the development of a NWP system on workstations or PCs. Congress supported the development of regional approaches and strategies to address gaps in WWW infrastructure and to enhance the application of warnings, forecasts and related community response.

8. *Training*

Congress agreed that emphasis on training should be given to severe weather forecasting and enhanced use of EPS products and definition and response to related regional requirements. It emphasized the need to promote development and use of CAL modules on EPS and organize EPS roving seminars and workshops.

Capacity building activities should also include implementation of NWP models on workstations or PCs and development of packages (Web based) for specialists involved in

environmental emergency response and considered to be of benefit to all active in the provision of service and interpretation of products.

9. *Change of GDPS programme name*

Congress considered and approved the recommendation of CBS-Ext. (02) on the need to include the word "forecasting" in the definition of the GDPS so that the GDPS programme would be named the "Global Data-processing and Forecasting Systems (GDPFS)".

10. *WMO standards for weather forecasts*

"Congress was of the view that the establishment of a WMO standard and/or recommended practice for weather forecasting techniques would assist in producing more reliable forecasts, using optimally the current levels of meteorological science and technology. A standard and/or recommended practice for weather forecasting might include a series (or chain) of mandatory and desirable elements representing the stages of weather forecast preparation. While care would be needed to avoid giving the impression that weather forecasting was a purely mechanical linear process; each element of that practice could be described by a set of standard and/or recommended procedures. At the same time, it was important to recognize the need to take into account the varying situations among countries and the possible diversity in the need for, and appreciation of, such standards. CBS had been requested to study the matter with a view to taking appropriate steps to develop recommendations"
