

AGENDA ITEM 4: MODES OF OPERATION OF THE WGHS

TERMS OF REFERENCE AND WORK PROGRAMME

WMO RA-II WORKING GROUP ON HYDROLOGICAL SERVICES

INTRODUCTION

1. At the 15th session of WMO RA-II in Doha, State of Qatar, from 13 to 19 December 2012, and the subsequent 7th Session of the RA-II Management Group in Geneva, 12 May 2013, the following subsidiary bodies were established:

- Management Group (MG);
- Working Group on Weather Services (WGWS) Chair, Mr Boon-leung Choy (China);
- Working Group on Climate Services (WGCS), Chair, Mr Ryuji Yamada (Japan);
- Working Group on Hydrological Services (WGHS), Chair, Dr sung Kim (Republic of Korea) and Vice-Chair, Mr Muhammad Riaz (Pakistan);
- Working Group on WMO Integrated Global Observing System (WIGOS) and WMO Information System (WIS) (WG-WIGOS/WIS), Chair, Mr Yongqing Chen (China);
- Implementation Coordination Team on Service Delivery (IC-SD), Mr Jianjun Xue (China);
- Implementation Coordination Team on Disaster Risk Reduction (ICT-DRR), Dr K.J. Ramesh (India).

2. The structure of the RA II Working Groups is provided in Appendix I.

3. The RA II Strategic Operating Plan aims at providing a clear path forward for the Region to address critical societal needs. It takes into account the framework of the WMO Strategic Plan 2012-2015 which was approved in the Sixteenth World Meteorological Congress (Geneva, May/June 2011), with eight Expected Results grouped within five Strategic Thrusts under three Global Societal Needs. Within the five Strategic Thrusts and eight Expected Results, WMO as a whole has identified the following five priority areas that have significant contribution to the achievement of the expected results:

- Global Framework for Climate Services (GFCS);
- Aviation meteorological services;
- Capacity building for the developing and least developed countries;
- Implementation of the WMO Integrated Global Observing System (WIGOS) and WMO Information System (WIS); and
- Disaster Risk Reduction (DRR).

4. Considering the circumstances in the Region, RA II identified the following highest priority areas:

- Implementation of the WIS/WIGOS and necessary improvement of the GTS;
- Sustainable capacity development including human resources development;
- Implementation of the GFCS in support of agriculture and food security; water; health; and disaster risk reduction, as well as energy and other sectors, through, but not limited to enhancement and operation of the RA II RCC network and RCOFs;

- Climate services to address the slow-onset impacts of climate variability and climate change;
- Establishment of a region-wide multi-hazard early warning system for disaster risk reduction;
- Implementation of aeronautical meteorological services enhancements in coordination with CAeM and upgrading of service delivery capability in other application areas including marine meteorological services;
- Implementation of the WMO Flood Forecasting Initiative, water resources assessment and regional exchange of hydrological data and information; and
- Reduction of risks and impacts of Region specific hazards caused by sand and dust storms, thunderstorms and associated extreme weather events.

WORKING GROUP ON HYDROLOGICAL SERVICES

4. The Terms of Reference of the WGHS is provided in Resolution 10 (RA II-15), which is reproduced in Appendix II. The objective of the WGHS is to contribute to the implementation of the WMO Strategic Plan and the RA-II Strategic Operating Plan 2012-2015. The focus will be on Expected Results 2, 3, 4 and 6 which are related to the Strategic Thrust of 'improving service quality and service delivery, Advancing Scientific Research and Application as well as Development and Implementation of Technology and strengthening capacity building', namely:

ER2: Enhanced capabilities of members to reduce risks and potential impacts of hazards caused by weather, climate and water and related environmental elements.

ER3: Enhanced capabilities of Members to produce better weather, climate, water and related environmental information, prediction and warnings to support in particular climate impact and adaptation strategies.

ER4: Enhanced capabilities of Members to access, develop, implement and use integrated and interoperable surface-based and space-based systems for weather, climate and hydrological observations, as well as related environmental observations, based on world standards set by WMO.

ER6: Enhanced capabilities of NHMSs, in particular in developing and least developed countries, to fulfil their mandates.

4. As per the Terms of Reference of the WGHS as established by Resolution 10 (RA II-15), the WGHS will develop its implementation plan in consultation with the president and the Management Group of the Association, with reference to the key performance indicators/targets and action plans under the respective expected results of the RA II Strategic Operating Plan. The WGHS will undertake work on the various theme areas under the charge of the Working Group.

5. The focus of the WGHS, as outlined in Resolution 10 (RA II-15), is to contribute to theme areas:

- a) Strengthening the capability of Members to assess their water resources: water resources assessment, its variability and use (surface water including reservoirs and groundwater);
- b) Improve accuracy and timeliness of forecasting floods of different cause and origin through enhanced cooperation between National Meteorological Services and National Hydrological Services, within the context of the WMO Flood Forecasting Initiative;
- c) Hydrological aspects of drought, including drought monitoring, and

assessment of water scarcity and deficits;

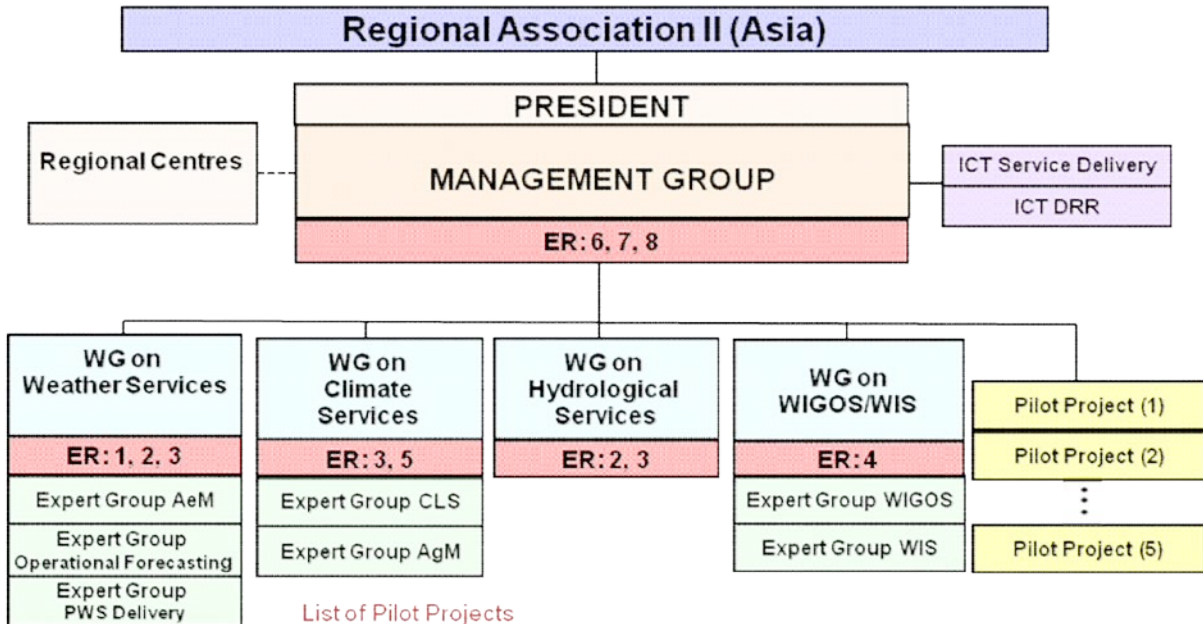
d) Hydrological responses to climate variability and change and promotion of the use of climate information by water managers;

e) Improved accuracy of hydrometric and sediment observations including space-based technologies; and

f) Sediment disasters and mass movements (flood and rainfall induced)

6. The membership of the WGHS is given in Appendix III. An example by way of a work plan template is provided in Appendix IV for a hypothetical Task Team on Flood Forecasting.

RA II Working Structure (2012-2015)



List of Pilot Projects

- Pilot Project to Develop Support for NMHSs in Numerical Weather Prediction
- Pilot Project for Information Sharing on Climate Services
- Pilot Project to Develop Support for National Meteorological and Hydrological Services in the Collection and Application of Aircraft Meteorological Data Relay (AMDAR) Data
- Pilot Project to Sustain and Enhance the Capacity of National Meteorological and Hydrological Services in the Provision of Official Weather Forecasts for the Medium Range
- Pilot Project to Enhance the Seamless Provision of Regional Severe Weather Warnings and Advisories

APPENDIX II

Resolution 10 (RA II-15)

REGIONAL ASSOCIATION II WORKING GROUP ON HYDROLOGICAL SERVICES

REGIONAL ASSOCIATION II (ASIA),

Noting:

- (1) Resolution 17 (Cg-XIV) – Hydrology and Water Resources Programme,
- (2) Resolution 25 (Cg-XIII) – Exchange of hydrological data and products,
- (3) Resolution 10 (XIV-RA II) – RA II Working Group on Hydrological Forecasts and Assessments,
- (4) The report of the meeting of the Working Group on Hydrological Forecasts and Assessments, Seoul, Republic of Korea, 23–26 November 2010,
- (5) The Strategic Operating Plan for the Enhancement of National Meteorological and Hydrological Services (NMHSs) in Regional Association II (Asia) 2012–2015,

Considering that Regional Association II should continue to play an important and active role in the implementation of WMO regional activities in the field of hydrology and water resources,

Decides:

- (1) To establish the Regional Association II Working Group on Hydrological Services (WGHS) with the following terms of reference:
 - (a) To provide assistance and advice to the president of the Association on all questions pertaining to the regional aspects of the Hydrology and Water Resources Programme;
 - (b) To engage in and monitor the implementation of water-related activities documented in the RA II Strategic Operating Plan;
 - (c) To undertake activities relating to the Hydrology and Water Resources Programme as listed in (2) below;
 - (d) To cooperate with the Commission for Hydrology and other WMO bodies on activities and projects related to hydrology and water resources;
 - (e) To seek cooperation with other regional bodies and organizations on issues related to the Hydrology and Water Resources Programme;
 - (f) To actively contribute to the Global Framework for Climate Services through dedicated components in the identified theme areas of work during the next intersessional period 2013–2016;
 - (g) To undertake activities related to the transfer of technology through the Hydrological Operational Multipurpose System and capacity-building in a cross-cutting manner;

- (2) To invite all Members of the Region to designate hydrological experts to serve on the Working Group and attend its meetings in the following theme areas identified for the work of the Group:
 - (a) Strengthening the capability of Members to assess their water resources: water resources assessment, its variability and use (surface water including reservoirs and groundwater);
 - (b) Improve accuracy and timeliness of forecasting floods of different cause and origin through enhanced cooperation between National Meteorological Services and National Hydrological Services, within the context of the WMO Flood Forecasting Initiative;
 - (c) Hydrological aspects of drought, including drought monitoring, and assessment of water scarcity and deficits;
 - (d) Hydrological responses to climate variability and change and promotion of the use of climate information by water managers;
 - (e) Improved accuracy of hydrometric and sediment observations including space-based technologies;
 - (f) Sediment disasters and mass movements (flood and rainfall induced);
- (3) To designate, in accordance with Regulations 33 and 168 of the WMO General Regulations, Dr Sung Kim (Republic of Korea) as the Hydrological Adviser to the president of RA II and as chair of the Working Group;
- (4) To designate Mr Muhammad Riaz (Pakistan) as vice-chair of the Working Group;

Requests the chair of the Working Group:

- (1) In his capacity as Hydrological Adviser, to assist the president of RA II in accordance with the duties stipulated in Regulation 168 (b) of the WMO General Regulations;
- (2) To develop a Working Group implementation plan in consultation with the president and the Management Group of the Association, with reference to the key performance indicators/targets and action plans under the respective expected results of the RA II Strategic Operating Plan, to undertake work on the various theme areas under the charge of the Working Group;
- (3) To participate in Executive Council sessions, when invited, representing the regional interests in relation to hydrology and water resources and to coordinate the WGHS activities with the Commission for Hydrology and other regional Working Groups on Hydrology;
- (4) To submit to the president of the Association an annual report by 31 December every year and a final report in time for presentation to the sixteenth session of the Association, both copied to the WMO Secretariat, with inputs from theme leaders under the Working Group;

Requests theme leaders to submit annual reports to the chair;

Urges the Members concerned to provide full support to the WGHS in order to ensure that the Working Group is able to fulfil the tasks assigned to it;

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

Membership -- Working Group on Hydrological Services (WGHS)

WGHS		
Chairperson WGHS	Dr Sung Kim	Republic of Korea
Vice-chairperson WGHS	Mr Muhammad Riaz	Pakistan
Theme Leader in Water Resources Assessment	Ms GAO Ge	China
	Ms Hwirin Kim	ROK
Theme Leader in Flood Forecasting	Dr Sergey Borshch	Russia
Theme Leader in Hydrological Aspects of Drought	Ms Irina Dergacheva	Uzbekistan
Theme Leader in Hydrological Responses to Climate Variability and Change and Promotion of the Use of Climate Information by Water Managers	Mr WANG Guoqing	China
	Dr Thuc Tran	Viet Nam
Theme Leader in Improved Accuracy of Hydrometric and Sediment Observations including Space-based Technologies	TBD	TBD
Theme Leader in Sediment Disasters and Mass Movements	TBD	TBD

APPENDIX IV

TASK TEAM ON FLOOD FORECASTING (TT-FF)	
Objective	Assist with the implementation on hydrological forecasting in RA-II which meets the standards and recommendations of WMO.
Benefits	Identifying available tools or methodologies including Geographic Information System (GIS), satellite information and hazard mappings for flood and flash flood forecasting.
Terms of Reference	<p>The Terms of Reference of the Task Team are:</p> <ul style="list-style-type: none"> • Coordinate activities on flood forecasting in Region II; • Take the lead in identifying available tools or methodologies including Geographic Information System (GIS), satellite information and hazard mappings for flood and flash flood forecast; • Provide advice to the WGHS on the above issues.
Meetings	<ul style="list-style-type: none"> • The Task Team will operate as a virtual team and conduct regular meetings, via telephone or Skype; • The meeting will be chaired by the nominated Theme Leader and Secretariat duties provided on a rotating basis among the Task Team members; • Minutes and action items arising from the meeting will be provided to all members of the Task Team & WGHS via email within 10 working days of each meeting.
Work Program	<p>The work to be addressed by the Task Team includes:</p> <ul style="list-style-type: none"> • Improve Flood Early Warning Systems (FEWS); • Consider Flash Flood issues and promote the development of Flash Flood Guidance System (FFGS) in the region; • Introduce and promote Integrated Flood Management (IFM) concept; • Raising awareness about social and economic benefits and value of flood forecasting systems; • Provide 3 monthly status reports to the WGHS.
Reference	