

# **REGIONAL ASSOCIATION II (ASIA)**

**FOURTH SESSION OF THE RA II MANAGEMENT GROUP**

**DOHA, QATAR**

**29 February – 2 March 2012**

**FINAL REPORT**



**WORLD METEOROLOGICAL ORGANIZATION**



*Participants in the Fourth Session of RA II Management Group (Doha, Qatar, 29 February 2012)*

## FOURTH SESSION OF THE RA II MANAGEMENT GROUP

*(Doha, Qatar, 29 February – 2 March 2012)*

### 1. ORGANIZATION OF THE SESSION *(agenda item 1)*

1.1 At the kind invitation of the Government of the State of Qatar, the fourth session of the RA II Management Group (MG-4) was held at Rotana Hotel in Doha, Qatar from 29 February to 2 March 2012. The list of participants is attached as **Annex I** to this report.

1.2 Mr Ahmed Abdulla Mohammed, Permanent Representative of Qatar with WMO and Director, Meteorological Department, Civil Aviation Authority (CAA), on behalf of the Government of the State of Qatar, welcomed the participants to Qatar wishing them a pleasant stay and a successful and fruitful meeting. He expressed his appreciation to Prof. Victor Chub, President of RA II, for his leadership and contribution to the Association, and stressed that holding this Management Group (MG) session and the forthcoming fifteenth session of the Regional Association scheduled for December 2012 in Qatar is a clear demonstration of the interest and commitment of RA II to the development of meteorological services in the Region. Mr A.A. Mohammed pledged Qatar's support to the WMO priority activities, in particular, the WMO Information System (WIS), Global Framework for Climate Services (GFCS), Aeronautical Meteorology Programme and Capacity Development. He also informed the Group that a formal letter has been submitted to the Secretary-General of WMO for Qatar to be designated as a Data Collection or Production Centre (DCPC) under the WIS.

1.3 Dr Qamar-uz-Zaman Chaudhry, Vice-president of RA II, on behalf of the president of RA II and the Management Group members, expressed his sincere gratitude for the Government of the State of Qatar and Mr Mohammed and his staff for hosting the MG-4 session and for the excellent arrangements and hospitality felt by all participants. Dr Chaudhry extended apologies of Prof. Chub for not being able to attend the session due to previous engagements. He reviewed the topics to be discussed and stressed the importance of this meeting in preparation for the upcoming fifteenth session of RA II. He highlighted the various challenges facing RA II with its wide area, complex terrain and various climate patterns and associated environment man-made and natural disasters. Dr Chaudhry noted the disparities in capabilities of Members in RA II and thanked developed Members for helping out other Members and urged them to continue providing much needed support to those Members.

1.4 Mr Robert O. Masters, Director, Development and Regional Activities Department, on behalf of Mr Michel Jarraud, Secretary-General of WMO, also welcomed participants, and expressed his appreciation to Mr A.A. Mohammed for hosting the session in Doha. He emphasized the important role of the Management Group in focusing on priority regional issues for the next four years, including addressing the way to better organize the GFCS in the Region. In highlighting the importance of international cooperation, Mr Masters expressed his confidence that the outcomes of this MG session would be of significant input for more efficient and cost-effective organization of the fifteenth session of RA II.

1.5 Special appreciation was expressed by the delegates of China; Hong Kong, China; Islamic Republic of Iran; Japan; Pakistan; Republic of Korea; and Saudi Arabia to the Government of the State of Qatar and Mr A.A. Mohammed and his staff for their invaluable hospitality and arrangements for the session.

1.6 The MG adopted the agenda of the session, which is given in **Annex II**.

1.7 The MG agreed on its work programme and other practical arrangements for the session. It also agreed that all documents submitted for the session and presentations delivered at the meeting be posted on the Google Documents, RA II MG-4 Docs, to be shared by the participants at the meeting venue.

## **2. MATTERS ARISING FROM THE THIRD SESSION (*agenda item 2*)**

2.1 The MG-4 recalled that the third session of the RA II Management Group (MG-3: Geneva, May 2011) focused mainly on: the implementation of the Strategic Plan for the Enhancement of National Meteorological and Hydrological Services (NMHSs) in Regional Association II (Asia) (2009-2011) and development of the Strategic Action Plan; the review of the work of RA II subsidiary bodies including three pilot projects established during the fourteenth session of RA II (XIV-RA II) (Tashkent, Uzbekistan, December 2008); and the preparation for the fifteenth session of Regional Association II (XV-RA II). The Group agreed that the follow-up to XIV-RA II, including the review of the implementation of the RA II Strategic Plan (2009-2011) and the further development of the Strategic Operating Plan 2012-2015; and the progress on the work of RA II subsidiary bodies including pilot projects; and the preparation for the fifteenth session of RA II are the main issues for the MG-4 session, which should be discussed under relevant agenda items 3-4 and 6-7.

### Regional Events

2.2 The Group reviewed the regional events of RA II held during the fifteenth financial period (2008-2011). It was pleased to note that the session of Working Group (WG) on WMO Integrated Observing System and WMO Information System (WG-IOS/WIS) was held in Seoul, Republic of Korea from 30 November to 7 December 2011 with the regular budget allocation. The Group recalled that the Working Group on Hydrological Forecasts and Assessments (WGH) was held in Seoul, Republic of Korea in November 2010, and that sessions of the Sub-group on Climate Applications and Services of the Working Group on Climate Services, Adaptation and Agrometeorology (WGCAA-CAS) and the Working Group on Disaster Risk Reduction and Service Delivery (WGDRS) were held in Daegu as parallel sessions during the Fifth Technical Conference (Daegu, Republic of Korea, 29 November - 3 December 2010). The MG-4 expressed its appreciation to the host countries and Members financially contributed (Japan, Republic of Korea, Saudi Arabia and Uzbekistan) for their invaluable support, which enabled the successful organization of RA II regional events.

2.3 With reference to the regular budget allocation approved by Cg-XVI (Geneva, May/June 2011), the MG-4 considered the way to effectively organize the RA II regional events. In view of the limited funds allocated under the Regional Programme regular budget for Working Group sessions, the Group agreed that WG sessions should be organized efficiently and make use of the occasions of the Technical Conference and other regional events. It also suggested to best utilize new technology, e.g., Google Documents and videoconference capability, to allow cost-effective meetings. The regular budget allocation could be considered as partial assistance to the work and activities of Regional Associations.

2.4 The Group further recognized that a Regional Workshop for Least Developed Countries (LDCs) in Asia is planned to be held in 2012, which will be a coordination and capacity building workshop similar to the one organized for LDCs in Africa in November 2011, with a focus on mainstreaming the Istanbul Programme of Action for LDCs into NMHSs' and WMO's work programmes, with participation of Directors of NMHSs and National Focal Points of LDCs in other Ministries (i.e., two participants per country). Since the allocated budget is not sufficient, potential donor Members were kindly invited to provide financial support to this initiative for LDCs in Asia.

2.5 The agreed tentative plan for the regional events during the Sixteenth Financial Period (2012-2015) is shown in **Annex III**.

2.6 The MG-4 was pleased to note that, further to the MG-3's agreement on declaration of the Pilot Project on the Provision of City-specific Numerical Weather Prediction (NWP) Products to Developing Countries via the Internet as operational, an official launching ceremony was held on 7 July 2011 in Hong Kong, China, on the occasion of the Training Workshop of the Severe Weather Forecasting Demonstration Project (SWFDP) - Southeast Asia.

2.7 In this connection, the Group noted that the JMA/WMO Workshop on Quality Management in Surface, Climate and Upper-air Observations in RA II (Asia) was held in Tokyo, Japan, in July 2010, within the framework of the RA II Pilot Project to Enhance the Availability and Quality Management Support for NMHSs in Surface, Climate and Upper-air Observations; and the Meeting of the Coordination Group of the RA II Pilot Project to Develop Support for NMHSs in Satellite Data, Product and Training was also held in Tokyo, Japan, in February 2011.

#### Sixteenth World Meteorological Congress (Cg-XVI)

2.8 The Group noted with appreciation that the president of RA II, at Cg-XVI, made an extensive report on the issues related to RA II including: the successful implementation of the RA II Strategic Plan for the Enhancement of NMHSs in RA II (Asia) (2009-2011); implementation of the new working mechanism for effective implementation of the RA II Strategic Plan; establishment and implementation of three new Pilot Projects on observations, NWP and satellites in addition to the two existing Projects on city-specific NWP products and the Aeronautical Meteorology Programme; the progress in the establishment of the Regional Climate Centre (RCC) network with the two designated RCCs in Beijing and Tokyo and four candidate RCCs in India, Islamic Republic of Iran, Russian Federation and Saudi Arabia; and conducting Regional and Sub-regional Climate Outlook Forums (RCOFs); regional collaborative assistance to the disaster-affected Member NMHSs, in particular to Bangladesh following Cyclone *Sidr* in 2007, Myanmar following Cyclone *Nargis* in 2008 and Pakistan following the 2010 floods; and further enhancement of partnerships with UN and regional organizations/bodies.

2.9 The MG-4 considered the necessary RA II actions requested by Cg-XVI as given in **Annex IV** and urged the chairpersons and members of the subsidiary bodies of RA II (Management Group, Working Groups and Task Team) to take appropriate actions before the XV-RA II session in December 2012.

### **3. REVIEW OF THE ACTIVITIES OF THE RA II SUBSIDIARY BODIES INCLUDING THREE PILOT PROJECTS ESTABLISHED DURING THE FOURTEENTH SESSION OF RA II (TASHKENT, UZBEKISTAN, DECEMBER 2008) AND TWO PILOT PROJECTS ESTABLISHED DURING THE THIRTEENTH SESSION OF RA II (HONG KONG, CHINA, DECEMBER 2004) (agenda item 3)**

#### **3.1 Working Group on WMO Integrated Observing System and WMO Information System (WG-IOS/WIS)**

3.1.1 The RA II MG-4 noted that the first session of the Working Group on WMO Integrated Observing System and WMO Information System (WG-IOS/WIS) was held from 30 November to 7 December 2011 in Seoul, at the kind invitation of the Republic of Korea. Mr Arif Mahmood, Chairperson of the Working Group chaired the session.

3.1.2 The Group noted that the Regional Basic Synoptic Network (RBSN) and the Regional Basic Climate Network (RBCN) in RA II consisted of the following: 1366 RBSN stations, 274 radiosonde stations, 30 radiowind stations and 666 RBCN stations (263 GCOS Surface Network (GSN) stations and 32 GCOS Upper-air Network (GUAN) stations). It further noted that RA II has 2 GCOS Reference Upper-air Network (GRUAN) stations in China and Japan.

3.1.3 The Group took note of the existence of the following gaps in RA II Network: seven Members have no radiosonde stations; only 11 Members contribute to GUAN; 48 RBSN and 60 RBCN stations were silent between July 2010 and April 2011. The Group recommended that Members should ensure that all planned RBSN and RBCN are implemented and that the issue of silent stations in RA II should be addressed.

3.1.4 For the measurements of sea surface temperature and salinity, the MG-4 noted that RA II operates 529 of the global 3,472 marine stations. It further noted that as of November 2011, 30 mooring sites out of 46 planned locations are functioning. The Group was pleased to learn that a Regional Marine Instrument Centre (RMIC) has been established in Tianjin, China. The Group noted that the number of Voluntary Observing Ships (VOS) has declined.

3.1.5 The Group noted that the Aircraft Meteorological Data Relay (AMDAR) was operated by four Members only. A few other Members are in their initial stages for establishing AMDAR programme.

3.1.6 The Group also noted with satisfaction that Members of RA II have made significant contribution to the space-based component of the Global Observing System (GOS), both geostationary and polar-orbiting satellites. Other observational platforms such as radars, ground-based lightning detection networks, ground-based GPS measurements for total water vapour, and wind profilers have been set up by some Members in RA II. The Group emphasized that capacity building for Members of RA II regarding interpretation and analysis of satellite products is very much needed.

3.1.7 The MG-4 further noted that RA II operates two Regional Instruments Centres (RICs), two Regional Radiation Centres (RRCs) and one RMIC. However, the Group stressed the need for enabling field comparison and calibration of instruments. It identified existing problems in the following areas: sustainability of observing systems; regular maintenance and calibration of basic meteorological instruments; availability of expertise in instrumentation; and lack of technical documentation as guidance material related to instruments. The Group noted that WMO Technical Regulations are not understood by many users due to language barriers.

3.1.8 The Group noted that the status of the Global Telecommunication System (GTS) in RA II still remained at the 2010 level with Afghanistan, Bhutan and Iraq to be connected. The situation demands Digital Video Broadcasting (DVB) satellite connectivity as a high priority. The Group also noted that several Members have successfully utilized mobile telecommunication network service like the Short Message Service (SMS) and the General Packet Radio Service (GPRS) for data collection and visualization.

3.1.9 The Group further noted that a few WIS Centres have been designated by Congress and there are six candidates for GISCs and 18 candidates for DCPCs in RA II. It further noted that GISCs Beijing and Tokyo are operational; GISC Seoul is effectively operating on a trial basis and OpenWIS is in the process of implementation; DCPC for World Weather Information Service (WWIS) operated by Hong Kong, China is in trial operation; and all Regional Meteorological Telecommunication Network (RMTN) circuits are running and the Transmission Control Protocol/Internet Protocol (TCP/IP) migration strategy is almost achieved. The Group also noted that a few Members issue Binary Universal Form for the Representation of meteorological data (BUFR) message of both surface and upper-air reports and a few Members provide their SYNOP message in BUFR converted by another centre. It further noted that Climate Reports in BUFR format are created by six Members in RA II.

3.1.10 The MG-4 noted that a survey questionnaire was sent to 34 Members in RA II to evaluate regional WIS requirements for data exchange, management and access of WMO

Programmes. Since only 10 Members sent their replies to this questionnaire, the survey results have not necessarily reflected the regional WIS requirements for RA II.

3.1.11 The Group emphasized that the WIS would play an important role in the interoperable layer of the WIGOS. Within the WIGOS framework, the WIS provides data and metadata exchange and data Discovery, Access and Retrieval (DAR) service as well as management of related metadata that is essential to meet significant traceability requirement of special users.

### **3.2 Working Group on Hydrological Forecasts and Assessments (WGH)**

3.2.1 The RA II MG-4 was informed of the progress of activities of the Working Group on Hydrological Forecasts and Assessments (WGH). The Group was pleased to learn the following:

- (1) At the kind invitation of the Sustainable Water Resources Research Centre (SWRRC), Republic of Korea, the WGH session was held in Seoul, Republic of Korea, from 23 to 26 November 2010;
- (2) Reflecting on its work in previous years, the WGH concluded that it has a key role in promoting regional issues related to hydrology and water resources and has an increasingly critical role in light of emerging challenges related to hydrological forecasting, water resources assessment and adaptation of water management systems under climate change;
- (3) The WGH considered a hydrological response to climate variability and change and promotion of the use of climate information by water managers to study and evaluate the impacts of climate change and water resources, hazardous hydrometeorological phenomena such as drought and flooding, especially flash flood;
- (4) The WGH recommended perspective theme areas for the next intersessional period 2012-2016 including:
  - Water resources assessment, its variability and use;
  - Improve accuracy and timeliness of forecasting floods of different cause and origin within context of WMO Flood Forecasting Initiative;
  - Hydrological aspects of drought, including drought monitoring, assessment of water scarcity and deficits;
  - Hydrological responses to climate variability and change and promotion of the use of climate information by water managers;
  - Improved accuracy of hydrometric and sediment observations including space-based technologies;
  - Sediment disasters and mass movements (flood and rainfall induced);

#### Crosscutting themes:

- Improving institutional capacity;
  - Regional exchange of hydrological data and information.
- (5) The WGH noted with appreciation the progress made in several regional World Hydrological Observing System (WHYCOS) projects, notably the Mekong-HYCOS and the Hindu Kush Himalayan (HKH) HYCOS projects that are currently implemented. The WGH regretted that after many years of effort and the expressed wish of NMHSs of Central Asia, the ARAL-HYCOS has not received funding to implement the project and urged WMO to help with that.

3.2.2 The MG-4 noted that the WGH identified first three highest priorities of each deliverable given in the RA II Strategic Plan 2009-2011 under Expected Result 3; and proposed a key activity for each deliverable given in the draft RA II Strategic Operating Plan 2012-2015.

3.2.3 In view of the importance of regional cooperation, the MG-4 encouraged the WGH to further close collaboration with the hydrological components of the ESCAP/WMO Typhoon Committee and the WMO/ESCAP Panel on Tropical Cyclones in several themes of common interest and potential for cooperation.

3.2.4 The Group was informed that, for the implementation of the WMO Flood Forecasting initiative, the Islamic Republic of Iran Meteorological Organization (IRIMO) has suggested a concept on an Integrated Flood Early Warning System (IFEWS). This method is implemented jointly by using NWP models with hydrological models.

### **3.3 Sub-group on Climate Applications and Services of the Working Group on Climate Services, Adaptation and Agrometeorology (WGCAA-CAS)**

3.3.1 The MG-4 recalled that the RA II Sub-Group on Climate Application and Services (WGCAA-CAS) held its meeting in Daegu, Republic of Korea from 30 November to 2 December 2010. In this meeting, the Sub-Group adopted its Action Plan. In accordance with the Action Plan, the following were reported to the MG-4 as major activities:

- (1) The North Eur-Asia Climate Centre (NEACC) submitted a letter of intent to establish an RCC to the president of RA II, and it formally started the one-year pilot phase on 1 December 2010. After examining whether its functions and activities meet the criteria for RCC mandatory functions, the Sub-Group will prepare a document on the result of the examination of the eligibility, to be submitted to the president of RA II;
- (2) The Joint Meeting for the Seasonal Prediction of the East Asian Winter Monsoon regularly being held in November every year is expected to be formally recognized as an RCOF in the future based on a consensus among the participating four countries (China, Japan, Mongolia and Republic of Korea) in the Twelfth Joint Meeting held in Tokyo, Japan from 10 to 11 November 2011;
- (3) As a cooperation mechanism between operational climate service providers and research sectors, the eighth session of the Forum on Regional Climate Monitoring, Assessment and Prediction for RA II (FOCRAll) was jointly held with the WCRP Climate Variability and Predictability (CLIVAR) Project's Asian-Australian Monsoon Panel (AAMP) from 6 to 10 April 2011. After the session, Dr Takano drafted a document entitled "Consensus on WCRP/CLIVAR AAMP and WGCAA-CAS cooperation to strengthen Research and Operations Linkages for Enhancing the use of the Climate Information in Asian Region" and asked persons concerned for comments.

### **3.4 Working Group on Disaster Risk Reduction and Service Delivery (WGDRS)**

3.4.1 The MG-4 recalled that the WGDRS was established in XIV-RA II for the purpose of coordinating with the Executive Council Working Group on Disaster Risk Reduction and Service Delivery and with WMO Technical Commissions in the development of capacity for RA II Members to deliver weather-, climate- and water-related services. Led by Mr Edwin S.T. Lai (Hong Kong, China), the work of WGDRS was developed and coordinated under the three sub-groups of Disaster Risk Reduction (WGDRS-DRR), Service Delivery (WGDRS-SD) and Aeronautical Meteorological Services (WGDRS-AeM), each with its own team of theme leaders and supporting experts.

3.4.2 The Group noted the progress of WGDRS activities, in particular:



- (1) A small WGDRS planning meeting was held at Daegu, Republic of Korea on 1-3 December 2010. An abridged implementation plan was drafted for short-term follow-up actions with target completion dates leading up to mid 2012. Progress review of the plan is yet to be finalized;
- (2) At the Daegu meeting, it was also agreed that the work of WGDRS would be more effective if effort was focused on a few selected DRR aspects, and subsequent consultation was undertaken with WMO DRR Programme to discuss the way forward;
- (3) Some known capacity-building and DRR-related initiatives in RA II that may be relevant to the work of WGDRS are highlighted as examples for future reference.

3.4.3 The Group further noted some relevant initiatives in RA II that:

- (1) Aviation-weather Disaster Risk Reduction (ADRR) website, a pilot project under WGDRS-AeM, was officially launched on 18 Apr 2011;
- (2) Two WMO/CBS SWFDP under the Global Data-Processing and Forecasting System (GDPFS) and Public Weather Services (PWS) Programmes are currently being planned in RA II: Southeast Asia (Cambodia, Lao People's Democratic Republic, Thailand and Viet Nam); and Bay of Bengal region (Bangladesh, India, Maldives, Myanmar, Sri Lanka and Thailand);
- (3) RA II Project on the Provision of City-Specific NWP Products to Developing Countries via the Internet was declared operational on 7 July 2011;
- (4) Launch of the "Asian Consortium for NWP Forecasts" (ACNF) website for registered access by RA II Members would be made in mid 2012. A training workshop on the use of community models and NWP products on the ACNF website will be organized in Hong Kong, China near the end of 2012.

3.4.4 The MG-4 recognized the communication issues among sub-group coordinators and theme leaders and agreed with the view of the Chair of the WGDRS that a practical way forward appears to be for WGDRS Chair to engage and establish working contacts with active project leaders (i.e., for projects identified as priority/focus under the WGDRS implementation plan) through a virtual forum that helps to consolidate and synergize development and capacity-building effort within the Region.

### **3.5 Pilot projects set up at XIII-RA II and XIV-RA II**

3.5.1 The Group further noted with satisfaction the progress in the work of the three pilot projects established at XIV-RA II (Tashkent, Uzbekistan, December 2008) as well as the two pilot projects established at XIII-RA II (Hong Kong, China, December 2004). A summary of progress reports on pilot projects are given in [Annex V](#).

3.5.2 In connection with the pilot project to develop support for NMHSs in NWP, the Group noted the activities of India on NWP as follows:

- (1) The India Meteorological Department (IMD) has an operational NWP centre running a suite of global, regional and mesoscale models for the region. The products are available freely on the Internet. A total of 100 city forecasts for Indian stations are routinely issued. The same can be extended to other cities of the region through bilateral cooperation;
- (2) Assimilation of radar data in mesoscale models has facilitated setting up of regular nowcast service in India. The pilot phase for Delhi has been covered and extension

is being made to include major cities of the country and all major airports. Nowcasting is provided in two time scales of 0-1 hour and 1-6 hours using different models. User-related issues are currently under consideration deploying SMS and FM radio methodologies;

- (3) A Forecast Demonstration Project (FDP) on severe weather phenomena is underway involving countries of South Asia for the last two years. A more elaborate programme is being instated for phenomena like tropical storms and fog;
- (4) Regional cooperation in sharing mesoscale observational data for 1-2 days of severe weather warnings is of prime importance to the success of NWP-based early warning of hydrometeorological disasters.

3.5.3 The Group was also informed of the recent activities of IRIMO, including the seasonal forecast; launch of IRIMO NWP city forecast project; and flood forecasting.

#### **4. REVIEW OF THE IMPLEMENTATION OF THE STRATEGIC PLAN FOR THE ENHANCEMENT OF NATIONAL METEOROLOGICAL AND HYDROLOGICAL SERVICES (NMHSs) IN REGIONAL ASSOCIATION II (ASIA) (2009-2011), INCLUDING REGIONAL NEEDS AND PRIORITIES (agenda item 4)**

##### **Monitoring of the Basic Capability of NMHSs in RA II**

4.1 The MG-4 noted that a new RA II Survey Questionnaire (2010-2011) for monitoring the progress in the implementation of RA II Strategic Plan 2009-2011 was developed by the Task Team on Strategic Planning. The survey questionnaire covers 12 main topics including management, observing systems, telecommunications, forecasting system, natural disaster prevention and mitigation, climate services, aeronautical meteorological services, hydrological services and partnership. The survey was carried out during January to November 2011.

4.2 The Group reviewed the analysis of the results of the 2010-2011 survey on the basic capability of NMHSs in RA II, as given in **Annex VI**, received from 30 out of 35 Members. The Group expressed its satisfaction of the overall improvement of weather, climate and water services by Members of RA II, including service delivery capability, infrastructure for observation, telecommunication and forecast products, but it also noted the gaps among the Members in the Region.

4.3 The Group expressed a concern that observational infrastructure of some Members in the Region, particularly for the operation of radar and lightning observation networks for the efficient detection of severe weather phenomena, are far from sufficient to produce and provide reliable and timely forecast and warning services. It further noted that many LDCs cannot afford to have qualified maintenance technicians for observation instruments and communication infrastructure for real-time delivery of observations.

4.4 Taking note of the fact that many Members use and interpret NWP products from major centres in the forecasting process, the Group agreed that capacity development for the interpretation and application of NWP products should be more enhanced urgently with the highest priority, while the capacity to NWP operation could be further developed within a longer-term framework.

4.5 The Group agreed that more enhanced support should be provided for Members, in particular LDCs in the Region, to enable them to implement Quality Management Systems (QMSs) and cost-recovery of services.

4.6 The MG-4, in recognizing the high response rate (30/35 = 86%) of the 2010-2011 survey, considered possible reasons for the Members not responding to the survey, e.g., ambiguous questions; communication problem; and different ministries handling weather, climate, water and environment services. In light of language problem for Members in Central Asia, the Group welcomed the offer of the Russian Federation to assist in translating the questionnaire and transmitting to the Members concerned.

4.7 The Group urged focal points of NMHSs to take a more proactive approach in responding to the diverse areas of questions of the survey and make consultations with relevant national authorities when responding to the survey to guarantee collection of appropriate information.

4.8 The MG-4 agreed that the Secretariat should provide feedback on the final analysis of the survey to Members since this should provide regional guidelines to the needs and priorities towards the development of Regional Strategic Operating Plan for 2012-2015.

4.9 The Group agreed that the survey questionnaire could be further improved through streamlining the questions, introducing two-step answer questions and multiple-choice questions, and providing examples of answers.

4.10 The Group agreed on the need for a system for country information to be updated periodically, e.g., WMO Country Profile Database (CPDB).

**5. RA II CONTRIBUTION TO AND PARTICIPATION IN WMO PRIORITY ACTIVITIES FOR 2012-2015: GLOBAL FRAMEWORK FOR CLIMATE SERVICES (GFCS); AVIATION METEOROLOGICAL SERVICES; CAPACITY DEVELOPMENT; WMO INTEGRATED GLOBAL OBSERVING SYSTEM (WIGOS) AND WMO INFORMATION SYSTEM (WIS); AND DISASTER RISK REDUCTION (DRR) (agenda item 5)**

**5.1 Implementation of the WMO Integrated Global Observing System (WIGOS) in RA II**

**WIGOS Implementation**

5.1.1 The RA II MG-4 noted the relevant guidance and recommendations adopted by Cg-XVI, EC-LXIII, and the first session of the Inter-Commission Coordination Group on the WIGOS (ICG-WIGOS-1) to be followed by WMO constituent bodies for planning and implementing the WIGOS.

5.1.2 The MG-4 agreed with the key recommendations by ICG-WIGOS-1 as follows:

- (1) The implementation should be considered from the service delivery perspective, how to satisfy the multifaceted requirements of end-users:
  - (a) Requirements of the GFCS and other WMO priorities needed to be reflected;
  - (b) Present and emerging requirements of all WMO and WMO co-sponsored Programmes should be satisfied;
  - (c) Regional/subregional/national requirements needed to be reflected in the relevant implementation plans;
- (2) Observation activities undertaken by WMO Programmes, Regional Associations (RAs) and Technical Commissions (TCs) should be core components of the WIGOS implementation; in this regard, all RAs, TCs and relevant WMO Programmes should provide an annual status report on how the WIGOS was embedded in their work plans and what were their WIGOS achievements for the subsequent reporting of ICG-

WIGOS to EC. Furthermore, the MG-4 expressed the view that the Members of RA II may also take care of challenges and opportunities by the WIGOS;

- (3) Sessions of all WMO constituent bodies (Cg, EC, RAs, TCs) should be used to present and document the progress in the WIGOS implementation as well as for the purpose of their engagement, and close and active involvement;
- (4) The Regional WIGOS Communications and Outreach Strategy as well as the Capacity Development Strategy must be the essential components of the Regional WIGOS Implementation Plan (R-WIP). The R-WIP should identify needs and requirements for capacity development/building activities for the WIGOS implementation, including technical assistance and technological transfer;
- (5) Seminars, workshops and meetings should be organized at regional/subregional and national levels to:
  - (a) Promote understanding of the WIGOS concept, implementation and challenges;
  - (b) Communicate benefits the WIGOS will bring to the Regions and Subregions;
  - (c) Provide assistance to Members to start the WIGOS implementation;
  - (d) Indicate the best working approach for each Region/Subregion taking advantage of on-going/planned initiatives, activities, projects (synergy of them) to address challenges, when respecting specifics of each Subregion;
- (6) WMO Regional Training Centres (RTCs), Regional Instrument Centres (RICs) and WMO Regional Offices should be closely and actively involved in the WIGOS implementation. The MG-4 recommended that Regional Telecommunication Hub (RTH) be also strengthened so that all Members may benefit completely from the WIGOS;
- (7) Further development of the WIGOS Functional Architecture (WIGOS-FA) and the WIGOS Implementation Plan (WIP); revision of the WMO Technical Regulations<sup>1</sup>, including development of the Manual on WIGOS; and development of WIGOS metadata tree (needed for the WIGOS Core Metadata Standard) must be considered as the high-priority activities of ICG-WIGOS with early and active engagement of the Management Groups of all RAs and TCs, respectively; such engagement, and their contributions to the WIGOS implementation is essential in this regard;
- (8) R-WIP should specify clearly the role and contributions of RAs and TCs, their Management Groups and working bodies ensuring their ownership and direct engagement in implementation activities; also, collaboration activities between RAs and TCs to ensure the provision of technical guidance of TCs to the Region should be specified.

5.1.3 In this regard, the MG-4 expressed its gratitude to Ms Meiyang Jiao, representing RA II for her contributions to ICG-WIGOS-1.

5.1.4 The MG-4 noted that the implementation of the WIGOS would not fix all problems of current national observing systems such as gaps, shortcomings, deficiencies, lack of QMS, compliance, etc. However, it would lay down the framework and processes through which Members and Regions would be able to develop plans to start addressing these problems in

---

<sup>1</sup> WMO Technical Regulations (WMO-No. 49), Volume I, General Meteorological Standards and Recommended Practices and other relevant regulatory material must be reviewed; the proposal for updates vis-à-vis WIGOS Manual must be developed.

a systematic way as the WIGOS becomes operational, as well as delivering all the other benefits of the WIGOS.

5.1.5 Compliance with the three WIGOS areas of standardization (Instruments and methods of observation, WIS information exchange and discovery, and QMF) must necessarily be done at the Member level; however, an RA subsidiary body and relevant TCs should provide support and assistance to Members to achieve the compliance.

5.1.6 The MG-4 discussed challenges of the WIGOS implementation in RA II. The Group noted that some Members have already conducted projects to implement the WIGOS requirements for the design of an integrated national observing system. China, Republic of Korea and Russian Federation are the examples of the RA II Members who have advanced such implementation. Therefore, it was recommended to invite these Members to share with the Region their experiences and lessons learned from a national integration process.

5.1.7 The MG-4 welcomed with appreciation the outcomes and achievements of the first session of RA II WG on IOS and WIS (Seoul, Republic of Korea, 30 November - 7 December 2011). From a WIGOS perspective, the MG-4 agreed specifically to the following:

- (1) The implementation of the WIGOS in RA II must address the high demand for the sustainable capacity building, including human resources development; and it must be reflected as an inherent part of all implementation tasks specified in R-WIP;
- (2) The implementation tasks/projects should focus on:
  - (a) Improvement of a regional/subregional observing capabilities, especially of LDCs;
  - (b) Drafting a design of the Regional and Subregional Integrated/Composite Observing Network with a specific emphasis to the integration of the current observing networks/systems, including surface-based and space-based observations;
  - (c) Improvement of Quality Management (quality assurance, quality control, quality and data management, including relevant technical documentation and guideline);
  - (d) Standardization and compliance with WMO regulations, needed for integration and better utilization of observation into NWP, including development of a database of regional and national best practices;
  - (e) Collaboration between Members in RA II, establishing mechanisms and procedures for bilateral cooperation;
  - (f) Collaboration with RA V, especially for the southeastern part of the Region in the area of multi-hazard early warning system (MHEWS), nowcasting, very short-range forecasting, DRR; however, this task should take into account all relevant Subregions of RA II.

#### **Development of the RA II WIGOS Regional Implementation Plan (RAII-WIP)**

5.1.8 The MG-4 endorsed the proposal by the first session of RA II WG-IOS/WIS for the establishment of the Task Team on R-WIP (TT/R-WIP) with the membership as follows:

- Chair of TT/R-WIP: Mr A. Mahmood (Pakistan) (Chairperson of the Working Group);
- Members: Task Leaders and Focal Points as agreed by the first session of RA II WG-IOS/WIS in Seoul.

5.1.9 The Group agreed on the following Terms of the Reference of TT/R-WIP to ensure

that further development of R-WIP for RA II (RAII-WIP) be submitted to the XV-RA II session:

- (1) Chair of TT/R-WIP:
  - (a) To coordinate the development of the RAII-WIP;
  - (b) To provide his advice to all TT/R-WIP members, as needed and requested;
  - (c) To finalize the draft RAII-WIP for the XV-RA II session;
- (2) Task Leaders:
  - (a) To collaborate closely with, and provide advice to the Focal Points under their responsibility for further elaboration of the Implementation Projects design and corresponding parts of RAII-WIP, as requested by Chair;
  - (b) To liaise with all TT/R-WIP Members;
  - (c) To communicate closely with the Chair of TT/R-WIP, to follow his instructions and seek for his advice;
- (3) Focal Points:
  - (a) To finalize the draft design for the Implementation Project under their responsibilities in close collaboration and cooperation with the relevant Task Leader;
  - (b) To communicate closely with the Chair of TT/R-WIP, to follow his instructions and seek for his advice.

5.1.10 The MG-4 discussed the structure and content of R-WIP with reference to the “Draft Regional WIGOS Implementation Plan (R-WIP)”, prepared by the WMO Secretariat (WIGOS-PO) for this purpose. The MG-4 considered also an alternative draft Table of Contents prepared by WIGOS-PO taking into account the “Zero Order Draft GFCS Implementation Plan” recently distributed by the GFCS Project Office for consideration and comments.

5.1.11 In this regard, the MG-4 expressed the views that the currently proposed nine implementation projects should be streamlined to six or seven to avoid overlaps among the proposed WIGOS projects and other existing RA II pilot projects; and adequate coordination on Key Players of each project is particularly important to ensure the effectiveness of the projects, and requested the Secretariat to: (a) polish the proposed projects to make some premature projects more concrete and explicit, or merged into other similar or overlapping projects; (b) consult with participating Members, particularly proposed Key Regional Players, whether or not they commit the implementation of the polished projects; and (c) provide improved drafts of the projects again to the MG-5.

5.1.12 The MG-4 agreed that:

- (1) RAII-WIP should propose bilateral or multilateral subregional projects as well as inter-regional projects (specifically between RA II and RA V for the southeastern part of the Region; and potentially between RA II and RA I for the southwestern/western part as well as RA II and RA VI for the western part of the Region);
- (2) RAII-WIP should contain projects for the assistance and support given by some Members, including China; Hong Kong, China; India; Japan; and Republic of Korea, to Least Developed Countries of the Region;
- (3) RAII-WIP should take into account and build on relevant on-going national/bilateral and subregional projects that should be incorporated as the RAII-WIP implementation projects, specifically:

- (a) “The RA II Pilot Project to Enhance the Availability and Quality Management Support for NMHSs in Surface, Climate and Upper-air Observations”; and
  - (b) “The RA II Pilot Project for the development of support for National Meteorological and Hydrological Services (NMHSs) in the areas of satellite data, products and training”;
- (4) Also, the DRR project “Strengthening Regional Cooperation for Development and Sustainability of Meteorological, Hydrological and Climate Services to support Disaster Risk Reduction and Adaptation in Southeast Asia” should be taken into account because of benefits it can bring Members of this Subregion of RA II.

## **5.2 WMO Information System (WIS)**

5.2.1 The MG-4 was pleased to note the progress on the WIS implementation in RA II; revision of regional aspect of the Manual on the GTS; and development of Regional WIS Implementation Plan in RA II, and supported the recommendations of the first session of WG-IOIS/WIS concerning the above areas, as given in the Final Report of the WG-IOIS/WIS.

### **Progress on GTS/WIS Implementation**

5.2.2 The Group recognized that in RA II there is substantial improvement in upgrading GTS links for using speeds higher than 9600 bps for dedicated links (total GTS links in RA II are currently 91 and out of which 80 are operational). However, data gaps still exist in Afghanistan, Bhutan and Iraq. The RTH New Delhi is making efforts to restore Afghanistan and Bhutan connectivity and efforts for Iraq will also be made.

5.2.3 The MG-4 noted that the China Meteorological Administration (CMA)'s integrated data broadcasting system (CMACast), based on DVB-2S technology and commercial telecommunication satellite service, started trial operation in the middle of 2011. The Japan Meteorological Agency (JMA) upgraded the Internet dissemination system to secure a smooth transition to JMA's next generation satellite series. The Republic of Korea launched its first meteorological satellite named Communication, Ocean and Meteorological Satellite (COMS) in June 2010. The RA II Pilot Project to develop support for NMHSs in satellite data, products and training, was established. A significant progress was made both in the Integrated Global Data Dissemination System (IGDDS) and Regional ATOVS Retransmission Services (RARS) in RA II. The digital broadcast of IMD (DMDD) should be included in IGDDS.

5.2.4 The Group recalled that Cg-XVI designated GISCs Beijing and Tokyo, and conditionally designated four other GISCs in RA II, namely Seoul, New Delhi, Tehran, and Jeddah. It further noted that GISCs Beijing and Tokyo have been operational since August 2011. The GISC Seoul is expected to be ready for operation in early June 2012 and GISC New Delhi will complete its implementation by the end of 2012. The area of responsibility of each GISC in RA II should be officially agreed upon at the next session of RA II. Most of Members just started their WIS implementation.

5.2.5 In this regard, the MG-4 was informed of the progress in the implementation of GISC at IRIMO as follows:

- At the moment there is a link between IRIMO GISC and some other centres such as DWD, JMA;
- Metadata of Afghanistan, Iraq, Oman are available through IRIMO GISC;
- Tajikistan is interested in cooperating with IRIMO in data transition via IRIMO GISC and WIS training;
- A short training course was held by Iranian experts with the support of a WMO expert for Iranian and Iraqi experts;

- In terms of regional cooperation, IRIMO is ready to provide training courses on WIS issues to the neighbouring countries and provide the GISC-related services to neighbours after a WMO final approval and establish training courses on WIS issues.

### **Revision of Regional Aspect of the Manual on the GTS**

5.2.6 In view of the importance of the revision of the Regional GTS Manual that would benefit all the Members of the Region, the MG-4 agreed on the new designation of Mr Kenji Tsunoda (Japan) as the Theme Leader in Regional GTS Manual. The Group was pleased to note that he has already started his work on the review of the Volume II of Manual on the GTS and will submit the draft amendment to the fifteenth session of RA II.

### **Development of Regional WIS Implementation Plan in RA II**

5.2.7 The MG-4 noted that the Sub-group on WIS of the WG-IOS/WIS discussed the approach for developing a regional WIS implementation plan for RA II (R2-WIS-IP). The objectives of the R2-WIS-IP are: (a) Harmonized and synchronous implementation by all RA II Members; (b) Guidelines to achievable implementation to seek maximum benefits and minimum overhead investment; and (c) Strategic approaches to effective and efficient capacity building.

5.2.8 The Group endorsed the timeline and working mechanism for the development of R2-WIS-IP as proposed by the WG-IOS/WIS. In particular, the Group agreed that Local Secondment would make great contribution to the development of RA II WIS Implementation Plan. The Group noted that CMA and the Korea Meteorological Administration (KMA) agreed to provide the Local Secondment.

### **5.3 Role of Regional Associations for Capacity Development**

5.3.1 The MG-4 recalled that Cg-XVI noted that a coordinated and cohesive approach for capacity development is needed to enhance capabilities of NMHSs in developing countries to meet growing societal needs at different levels and that Capacity Development (CD) is a crosscutting activity and contributes to all Expected Results (ERs), especially ER 6 (Enhanced capabilities of NMHSs, in particular developing and least developed countries, to fulfil their mandates) and Strategic Thrust 3 (Strengthening Capacity Building) of the WMO Strategic Plan 2012-2015. It also recalled that Cg-XVI requested the Executive Council to establish a WMO Capacity Development Strategy (CDS) to ensure, in a holistic approach, all actors in meteorological/hydrological/climate work towards the same overall objective - Facilitating sustainable development of NMHSs.

5.3.2 The Group further recalled that Cg-XVI was of the view that the preparation and implementation of a CDS would greatly assist WMO in the coordination and priority setting of capacity development activities, based on the Members' needs, arising from the global high priority areas as well as requirements of the Regional Associations and the Technical Commissions.

5.3.3 The MG-4 noted that the areas to be considered by WMO CDS are: (a) assess Members' capabilities; (b) improve compliance to WMO standards; (c) ensure national ownership (e.g., through national development plans); (d) tailor NMHSs products and services; (e) evaluate sustainability and impact of projects; (f) ensure capacity development activities are scalable; (g) include GFCS, aviation, WIGOS/WIS and DRR activities; (h) integrate regional requirements as key element for coordination and advocacy; and (i) provide and encourage volunteerism and bilateral cooperation.

5.3.4 The MG-4 further noted that the first session of the Executive Council (EC) Working Group on Capacity Development (Geneva, December 2011) agreed on the basic outline of



CDS and its implementation plan for 2012-2015. The CDS will be composed of: Executive Summary; Purpose; Introduction; CDS Elements with Key Activities to accomplish; Roles of National Government and Constituent Bodies; Governance; and Annexes. A 6-10 pages draft CDS will be prepared by the end of April 2012 for approval by the sixty-fourth session of the Executive Council (EC-64).

5.3.5 The Group recognized the basic process of WMO Capacity Development which includes the eight essential steps, starting from: (Step 1) Definition of requirements; followed by (Step 2) Baseline Establishment; (Step 3) Gap Analysis; (Step 4) Elaboration of Strategic Plan; (Step 5) National Ownership and Commitment; (Step 6) Resource Mobilization; (Step 7) Implementation of a Capacity Development Response; and (Step 8) Monitoring and Evaluation. The evaluation defines new requirements and baseline, and the monitoring would be a continuous iterative process throughout the cycle.

5.3.6 The Group was informed of the progress on the development of new Guidelines on the Role, Operation and Management of NMSs. In addition to providing useful information to Permanent representatives (PRs), senior and mid-level managers of NMSs, the Guidelines will allow development of baseline functions of the NMSs, assessment of NMSs against these functions, and tracking of deficiencies to be used in preparation of national development plans and related advocacy.

5.3.7 The MG-4 considered the role of Regional Associations in WMO Capacity Development and agreed on the following:

- (1) No NMHS can operate in isolation;
- (2) WMO's six Regional Associations are at the hub of the following activities:
  - (a) Recommending/monitoring the regional centres;
  - (b) Organizing regional working groups;
  - (c) Pilot and demonstration activities, seminars and workshops to implement these priorities at regional and sub-regional level;
  - (d) Defining regional requirements and gaps;
  - (e) Identifying special responsibility concerning provision of basic regional services in areas such as aviation, tropical cyclones, climate services, and training;
  - (f) "Help thy neighbour" activities, including:
    - Emergency assistance;
    - Regional training;
  - (g) Bringing focus to within a region to urgent issues, including:
    - ICAO requirements for aeronautical forecasting, widespread flooding, food security or health issues stemming from climate variability or change;
    - Regional or sub-region-wide mitigation such as participation in the Severe Weather Forecast Demonstration Project or projects using the application of information derived from satellite observations and other tools for disaster risk reduction.

5.3.8 The MG-4 welcomed the recent progress on the development of the WMO Country Profile Database (CPDB), through the approach to build a modular system upon the already existing and operational databases. The web-based CPDB currently provides the country information on: (a) the contacts of Permanent Representatives of Members with WMO (WMO Publication No. 5); (b) CBS/CIMO-related contacts; (c) observing station information (Vol. A); (d) radar station; (e) awarded fellowships; (f) Voluntary Cooperation Programme (VCP) requests, and so on. The Group expressed the view that the CPDB, to be regularly updated by Members themselves, would also be useful and beneficial to Members.

5.3.9 The Group was informed that the League of Arab States is organizing the First Ministerial Meeting for the Capacity Development of Meteorological and Climate Services in the Arab Countries in Jeddah, Saudi Arabia from 24 to 29 March 2012.

#### **5.4 Global Framework for Climate Services (GFCS)**

5.4.1 The Management Group recalled that the Third World Climate Conference (WCC-3: Geneva, 31 August - 4 September 2009) unanimously agreed to develop the Global Framework for Climate Services (GFCS) to strengthen the production, availability, delivery and application of science-based climate prediction and services, and requested that a High-level Taskforce (HLT) of independent advisors be appointed to prepare a report, including recommendations on the proposed elements of the Framework and the next steps for its implementation.

5.4.2 The Group also recalled that Cg-XVI endorsed the main findings and recommendations of the HLT report (*Climate knowledge for Action: a Global Framework for Climate Services*), and that EC-LXIII (Geneva, 6-8 June 2011) established an EC Task Team on the GFCS (ECTT-GFCS), chaired by Dr D. Grimes, President of WMO, (members from RA II are: Mr S.-J. Cho, Republic of Korea; Dr M. Hatori, Japan; and Dr A. Tyagi, India) which shall lead the process for the development of the Implementation Plan involving appropriate consultations with governments, UN and international agencies, key institutions and stakeholders.

5.4.3 The Group was pleased to note that a GFCS Office was established within the WMO Secretariat in July 2011 to facilitate the range of activities to support the development of the GFCS draft Implementation Plan. The GFCS Office is working for the preparation of the Extraordinary Session of the World Meteorological Congress planned from 29 to 31 October 2012.

5.4.4 The MG-4 noted that the first meeting of the ECTT-GFCS (Geneva, 13-15 October 2011) agreed on the process, including timeline and deliverables, leading up to the EC-64 in June 2012 and subsequently to the Extraordinary Session of Congress in October 2012. This process involves consultations under the main components of the GFCS (user interface platform; climate services information system; observation and monitoring; research, modelling and prediction; and capacity development), to facilitate discussion of key issues related to the production, availability delivery and application of climate services in the four priority sectors identified by HLT (agriculture, water, health and disaster risk reduction).

5.4.5 The Group further noted the timeline and deliverables for the process agreed by the ECTT-GFCS, including the completion of the final document of the draft Implementation Plan by the end of August 2012 for consideration by the Extraordinary Session of Congress in October 2012.

5.4.6 The MG-4 was informed that several Members have pledged financial support to GFCS, including Hong Kong, China; and India from RA II. The Management Group encouraged other potential donor Members of RA II to consider financial and in-kind support to the GFCS.

5.4.7 The Group noted that the key to the success of the development process of the GFCS and its subsequent implementation is the level of engagement of all the stakeholders from the end users of climate services to the producers and intermediaries. In this regard, a transparent and inclusive consultation as well as communication strategies intended to involve as many stakeholders as possible will be considered by the second meeting of the ECTT-GFCS at the end of February 2012.

5.4.8 The MG-4 considered that the integral contributions of RA II to support the work of the GFCS are through the enhancement of the RA II RCC network and the organization of regional and subregional climate outlook forums.

5.4.9 In this regard, the MG-4 noted with pleasure the progress on the establishment and enhancement of RCCs in RA II, including the activities of four candidate RCCs in India, Islamic Republic of Iran, Russian Federation and Saudi Arabia as well as of the already designated RCCs in Beijing and Tokyo (ref. Report of RA II WGCAA-CAS), as given below:

Beijing Climate Centre (BCC)

- (1) The Beijing Climate Centre (BCC) of CMA was established in 2003 and designated as a WMO RCC in 2009. BCC undertakes three roles: the Global Producing Centre (GPC) for long-range forecast, the Centre for Extreme Events Monitoring in Asia (CEEMA), and the East Asian Monsoon Activity Centre (EAMAC);
- (2) The Group noted with pleasure that the Forum on Regional Climate Monitoring, Assessment and Prediction for Asia (FOCRAll) and International Seminars on Climate System and Climate Change (ISCS) was annually held by BCC since 2005 and 2004, respectively;
- (3) From its operational experiences, BCC identified some of key lessons: climate service providers and users are required to work together; some services cannot be provided with current level of modelling capability; various advices are required on multiple scales, from strategic advice to refined and localized climate information;

Tokyo Climate Centre (TCC)

- (1) The Tokyo Climate Centre (TCC) of JMA is also one of designated RCCs in RA II together with BCC of CMA. TCC issues probabilistic prediction products for some 3-month-averaged variables and also provides a tool for overviewing and downloading monthly world climate data;
- (2) TCC holds annual training seminars on the application of its climate monitoring and prediction products. It also hosted the Twelfth Joint Meeting for the Seasonal Prediction of the East Asian Winter Monsoon in November 2011;
- (3) TCC provided reports on Extreme Climate Events in the Region through the TCC Webpage and published quarterly newsletters which contain articles on the latest climate information, introduction of TCC's new products and relevant activity;

India

- (1) GFCS preparations combine the activities of the proposed Regional Climate Centre for South Asia (RCC-SA) and climate services of NMHS. The RCC SA focuses on areas falling under monsoon climates. The monsoon region is relatively homogenous within the larger domain of Asia and Asia Pacific and is characterized by very high inter-annual variability. The countries of this subregion were under one single meteorological organization during the last two centuries and therefore share a common data resource. Restoring historical data gaps for climate change detection and other data services assumes great significance under the GFCS;
- (2) The precursory activity of RCC-SA have continued for the last three years including holding the South Asian Climate Outlook Forum (SASCOF) for capacity building and arriving at consensus seasonal forecast of the summer monsoon. Dynamical, statistical and hybrid empirico-dynamic prediction techniques are in vogue using all GPC and RCC products, which are also being validated for the subregion.

Indigenous efforts in establishing a seasonal dynamical forecast system using AOGCMs with Atmospheric and Oceanic (AO) data assimilation are underway as a group activity of the various organizations of the Ministry of Earth Sciences of which IMD is a part of the initiative. Two centres of excellence in capacity building, focusing respectively on climate system studies and operational services, are also operating since the last two years;

- (3) Dedicated programmes in the scientific understanding of monsoon and provision of climate services have recently been approved for implementation by the Government of India. The former programme is named as "Monsoon Mission" which is an international programme sponsored by India. The latter programme includes: climate data and monitoring; climate watch; climate prediction; climate data applications; and training and capacity building;

#### Islamic Republic of Iran

The Group noted with pleasure the activities of the Mashhad Climate Centre of Islamic Republic of Iran, including the use of GPC and RCCs products at national and regional levels for providing seasonal forecasts over West Asian countries, drought monitoring, training and workshops, and publication of two-page newsletters containing a short discussion on the mean precipitation and temperature of the region;

#### Russian Federation

The Group was also pleased to note the Russian activities, in context of RA II's contribution to the GFCS, including progress of North Eur-Asia Climate Centre (NEACC) as a potential multi-functional RCC in RA II;

#### Saudi Arabia

- (1) RCC (Jeddah) has collected climate database from all Arab countries in West Asia and North Africa. Seasonal forecast programme was established based on cooperation with climate prediction centres using tools and methodology of external forces on climate over the region based on study conducted of such effects;
- (2) RCC (Jeddah) established cooperation with a research institute in Saudi Arabia for development of the seasonal forecast model and downscaling the dynamic model. Combination of successful programme between the Regional Drought and Monitoring Early Warning Centre (RDMEC) and RCC (Jeddah) for monitoring effect of climate on vegetation cover, water, underground water, agriculture and livestock and their effects on the environment;
- (3) RCC (Jeddah) has developed a foundation to use remote sensing for the surface variation such as vegetation index and dust/sand storms effect. There is an ongoing programme with NOAA-NCAR to add a scheme to the high-resolution model for dust/sand storms prediction and drought monitoring, such information will serve the nearby countries in the future;
- (4) RCC (Jeddah) is conducting short- and long-term regional cooperation through the meeting which will be held in Jeddah from 24 to 29 March 2012 in two levels: Ministers and Permanent Representatives with WMO, where GFCS, WIS/WIGOS, drought policies and strategies and capacity development will be discussed. In addition, a session on adaptation to climate variability in the Arab region, and a workshop on early warning of floods, extreme climate events and its risk reduction will be held (ref. paragraph 5.3.9). RCC (Jeddah) and RDMEC established a

website to distribute products to users with a unit to assess the users feedback (<http://www.jrcc.sa>).

5.4.10 In view of the above progress, the Group requested the Working Group on Climate Services and Agrometeorology (WGCAA) to assist the candidate RCCs in accelerating the process of formal RCC designation.

5.4.11 The Group affirmed the importance of capacity development activities in the GFCS, and, in this context, it was informed that the Republic of Korea is conducting several training courses and playing a significant role in the climate services such as the Lead Centre for Long-Range Forecast Multi-Model Ensemble (LC-LRFMME), Asia-Pacific Economic Cooperation (APEC) Climate Centre (APCC) and WMO GPC (Global Production Centre). It is also planning to set up a Regional Training Centre (RTC) specialized in GFCS activities.

5.4.12 The Group noted that, in order to assist Members in enhancing their climate forecast services, capacity building and sharing of experiences and best practices are important, particularly in respect of statistical and dynamical techniques to downscale global climate model output, developing 10- to 30-day forecast and extreme climate event prediction a couple of months ahead.

5.4.13 The MG-4 agreed to the proposal of Japan that a pilot project be developed and implemented to collect and share information on climate services provided by NMHSs as well as good practices in RA II in the application of climate information to various fields, such as agriculture and water management. Noting that Japan has been advocating for the exchange of good practices as an important component of international and regional activities of the GFCS, the Group recognized with appreciation that RCC Tokyo is ready and very much willing to contribute to such a project.

## **5.5 Aviation Meteorological Services: Capacity Development**

### **Qualification and competencies for personnel in aeronautical meteorology**

5.5.1 The Management Group noted that the adoption of the top-level competencies by the sixty-second session of the Executive Council (EC-LXII) and subsequent endorsement by Cg-XVI and the replacement by a new chapter in WMO Publication No. 49, Vol. 1 for the implementation deadline in December 2013 require strong implementation support, oversight and leadership. The Commission for Aeronautical Meteorology (CAeM) Task Team on Competency Assessment Toolkit has managed together with the Expert Team on Education and Training to run a regional workshop on implementation of the Toolkit which took place in New Delhi in October 2011.

5.5.2 In this regard, the Group noted that Qatar RTC is organizing a regional Workshop on Aviation Meteorology for Forecasters in Doha from 15 to 19 April 2012. IRIMO has a plan to provide training for 56 aeronautical observers and forecasters. The Group requested the Secretariat to make a consolidated list of training events on aeronautical meteorological services available to Members of RA II.

### **Implementation of QMS in the provision of aeronautical meteorological services**

5.5.3 The Group appreciated that WMO had organized several workshops on the Quality Management System (QMS) in the Region, with a final one planned in Colombo, Sri Lanka from 19 to 22 March 2012. Some Members do not charge for services to aviation, and provide these services from public funds. In many developing countries, the available financial resources remain insufficient to fulfil these requirements. With the introduction of QMS, its implementation, auditor fees for the initial certification and its maintenance will also increase a financial burden. The Group noted with pleasure that the Qatar Meteorological Department has just obtained the Quality Management System Certificate in compliance with

requirements of standard ISO 9001: 2008. The Group further noted that the Islamic Republic of Iran is in the process of obtaining ISO 9001: 2008 certificate for 23 of its meteorological airport stations.

5.5.4 In this regard, the Group agreed that the experiences and lessons learned concerning QMS be shared with other Members of RA II and that focal points for QMS be appointed from the Islamic Republic of Iran, Oman and Qatar to assist other Members in the process of implementation of QMS in collaboration with the Secretariat.

5.5.5 The MG-4 urged Members of the Region to make best use of the available WMO materials, including the new, user-friendly website specifically developed to help implementation of QMS. Their Quality Managers were encouraged to request access to the WMO QMS web page and forum. Access to this website is password controlled, but they will be given access by e-mailing to: QualityManagement@bom.gov.au and by providing their name, position and organization. The username and password will be forwarded to them via return e-mail normally in less than 24 hours. This method facilitates that Members and the Secretariat create a network of QMS practitioners for the exchange of best practices, using a dedicated web forum.

5.5.6 As a way forward, the MG-4 considered that there is a need for a process similar to the Conference of Ministers Responsible for Meteorology in Africa (Nairobi, Kenya 12-16 April 2010) to convey to national governments the urgency of not only charging aviation for aeronautical meteorological services, but to also use the funds recovered in this way, so as to enable the service providers to meet ICAO requirements.

#### **Issues of service delivery and compliance with ICAO requirements**

5.5.7 The Group recognized that, in many cases, in particular LDCs and Small Islands Development States (SIDS), compliance with ICAO requirements may be difficult to achieve without a well-coordinated regional cooperation agreement to benefit from economies of scale, pooling in expertise and human resources, and the possibility to draw aid funds from regional development banks or any other development partners.

5.5.8 Members of RA II are urged to consider the compliance with ICAO requirements especially for the issuance of Significant Meteorological Information (SIGMET: weather warnings for aircraft en route). The lack of compliance with existing ICAO SIGMET regulations by many meteorological service providers, which have a high priority and safety relevance, have triggered a wider debate on re-organizing service delivery in aviation. The Group noted that the example of regional advisory centres for tropical cyclones and volcanic ash (TCAC and VAAC) are being used to test a regionalization of such services, which would have a serious impact on the national aviation meteorological service delivery. A first ICAO/WMO trial of issuing regional SIGMET advisories for a test period in 2011 by China showed very promising results for RA II.

### **5.6 Disaster Risk Reduction (DRR)**

#### **Disaster Risk Reduction Framework**

5.6.1 The RA II Management Group noted the two-tier approach of the implementation plan of the WMO DRR Programme, including: (a) development of knowledge products, standards, guidelines and training programmes on the DRR thematic topics based on documentation and synthesis of good practices, that are linked to; (b) DRR national/regional capacity development projects with a strong focus on strengthening cooperation of NMHSs, Regional Specialized Meteorological Centres (RSMCs) and RCCs with DRR users at various levels.

5.6.2 The Group further noted that one of the DRR priorities that was approved by Cg-XVI was the development of guidelines and training modules consistent with the principles of

QMS, spanning technical and operational aspects of meteorological, hydrological and climate services to support the implementation and scaling up of the national/regional DRR projects.

### **Development of thematic guidelines and user requirements interfaces**

5.6.3 The Group considered the thematic topics of the WMO DRR Programme which include the provision of meteorological, hydrological and climate services for: (a) Hazard/Risk analysis; (b) Multi-Hazard Early Warning Systems (MHEWSs); (c) Sectoral risk reduction through improved planning in sectors such as land zoning, infrastructure and urban planning, agriculture, health, transport, water resource management and energy; and (d) Disaster risk financing, which includes insurance and other CAT and weather indexed financial risk transfer mechanisms.

5.6.4 The Group highlighted the recommendations of the GFCS HLT particularly noting the need for applied research and development of seamless operational forecasting and analysis of the changing characteristics of hydrometeorological hazards at different climate timeframes (i.e., seasonal, inter-annual, decadal, and longer climate change timelines) as fundamental input for DRR decision-making. In this regard, the Group stressed the importance of linking the implementation framework of the DRR Programme with the development of the GFCS, in particular, potential contributions of the DRR Programme to the User Interface Programme of the GFCS. The Group further noted that WMO Secretariat would utilize national/regional DRR projects for engaging various WMO sponsored and co-sponsored climate programmes, technical commissions, and other research initiatives for development of climate services and capacities to support DRR and climate adaptation.

5.6.5 The Group also noted that effective disaster risk management decision-making must be founded on risk analysis. It noted that analysis of hazard patterns from historical data is necessary but not sufficient for risk analysis and must be augmented with the outcomes of climate prediction and forecasting tools for a forward-looking analysis of hazard characteristics. To this end, it was advised that over 90% of WMO Members indicated the need for guidelines for standardization of historical records of hazard data, metadata, hazard analysis tools (statistical and forward-looking) and related capacity building and training (Source: WMO DRR Survey 2006) and that EC-LXI requested “best possible practices” approach to the development of such standards and guidelines.

5.6.6 The Group was informed that a number of thematic “user-interface mechanisms” have been established (or will be established in 2012) to develop requirements for meteorological, hydrological and climate services to support various aspects of DRR decision-making. It further noted that WMO Technical Programmes and Commissions are being engaged systematically and as relevant to support delivery of guidelines and standards through these mechanisms. Specifically, these user-interface mechanisms include:

- (1) The Expert Advisory Group on Hazard/Risk Analysis, being established in 2012 to guide WMO activities in support of risk analysis;
- (2) The Expert Advisory Group on Multi-Hazard Early Warning Systems (MHEWSs). Seven examples of good practice in national MHEWSs (Bangladesh, Cuba, France, Germany, Japan, Shanghai/China and USA) were published. Resulting guidelines on “Governance and Institutional Partnerships in Disaster Risk Reduction and MHEWSs” are being developed and will serve as a basis for effective knowledge sharing. As a next step, this group will focus on operational aspects of MHEWSs building on the principles of Quality Management Framework;
- (3) The Inter-Commission Ad hoc Task Team on Meteorological, Hydrological and Climate Services for Humanitarian Preparedness and Planning. This task team is preparing a detailed document on the requirements of the humanitarian community for meteorological and climate services with the participation of eight UN and

international humanitarian agencies. This will provide the foundation for development to operational pilots that would engage NMHSs, RSMCs and RCCs; and

- (4) The Expert Advisory Group on Disaster Risk Financing – including insurance and other financial risk transfer mechanisms. The 2012-2015 work plan of this group includes the publication of a book on good practices in climate services for disaster risk financing, the development of guidelines on “requirements for climate services of various user segments in the disaster risk financing community” as well as their implementation through DRR national/regional capacity development projects.

### **DRR national/regional capacity development projects**

5.6.7 The Management Group noted that Cg-XVI encouraged further development of DRR capacity development projects with a strong focus on enhancing NMHSs, RSMCs and RCCs institutional capacities and their stronger linkages to the NMHSs at the national level. It was informed that regional DRR capacity development projects in three regions (Southeast Europe, Caribbean and Southeast Asia) will serve as a model and will be based on the implementation of the comprehensive framework on the role of NMHSs in DRR and MHEWSs.

5.6.8 Specifically, the Group was informed that a project proposal entitled “Strengthening Regional Cooperation for Development and Sustainability of Meteorological, Hydrological and Climate Services to support Disaster Risk Reduction and Adaptation in Southeast Asia” has been developed and is under consideration for funding by bi-lateral donors. It involves Cambodia, Indonesia, Lao People’s Democratic Republic, Philippines, Thailand and Viet Nam, as well as RSMCs and RCCs in the region and partners such as the Association of Southeast Asian Nations (ASEAN) and the Mekong River Commission.

5.6.9 The Group noted that a successful implementation of this cooperation project would require: (a) a coordinated and integrated planning, and implementation, leveraging WMO Technical Programmes, Regional Associations and Technical Commissions, Members, operational regional centres, NMHSs and external partners for increased benefits to the Members; and (b) the establishment of strategic partnerships of WMO with international and regional agencies that influence Disaster Risk Management (DRM) policies, planning, funding, and institutional development, particularly noting the World Bank, the United Nations Development Programme (UNDP), the UN-International Strategy for Disaster Reduction (UN-ISDR), regional inter-governmental DRM agencies and economic groupings as well as development banks taking into account national policies, strategies, priorities and local conditions.

5.6.10 The Group considered the possibility of establishment of two RA II sub-regional working groups on Disaster Risk Reduction: (i) one for Central and West Asia; and (ii) one for South and Southeast Asia, as regional characteristics in DRR, nature of hazards and institutional mechanisms vary across Asia. These sub-working groups will provide input into project technical development and support the implementation of the DRR Programme at the sub-regional level.

5.6.11 The Management Group examined the issues highlighted above, and in recognizing the need for effective coordination with WMO Programmes and Technical Commissions, requested the WMO Secretariat (the DRR Division or the Regional Office for Asia and the South-West Pacific as focal points) to maintain close contact with WGDRS Chair and to keep him informed and involved in discussion or activities, especially those relating to capacity-building and DRR effort, that may bring potential benefits for the enhancement of NMHSs within the Region.



## **6. DEVELOPMENT OF RA II STRATEGIC OPERATING PLAN FOR 2012-2015 (agenda item 6)**

### **WMO Strategic Plan 2012-2015**

6.1 The Management Group recalled that Cg-XVI approved the WMO Strategic Plan 2012-2015 (WMO-No. 1069), that reflects its decisions and directions that will guide decision-making by the Organization and its constituent bodies during the period 2012-2015 to ensure focused and coordinated approaches across the Organization. Within the five Strategic Thrusts and eight Expected Results, WMO as a whole has identified the following five priority areas:

- 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).

6.2 The Group recognized that the WMO-wide Operating Plan (OP) for 2012-2015 will be composed of the following four parts: (Part 1) Introduction; (Part 2) WMO Programme Activities planned and funded for Implementation in 2012-2015 (formerly considered as the Secretariat Operating Plan 2012-2015); (Part 3) the Operating Plans of eight Technical Commissions; and (Part 4) the Operating Plans of six Regional Associations.

### **Development of RA II Strategic Operating Plan (SOP) for 2012-2015**

6.3 The MG-4 recalled that XIV-RA II adopted the RA II Strategic Plan (2009-2011) and identified the highest priority areas for Region II, as follows:

- (a) Further improvement of the GTS and implementation of the WIS/WIGOS;
- (b) Sustainable capacity building including human resources development;
- (c) Better climate services through the enhancement and operation of the RA II RCC network;
- (d) Establishment of a Region-wide multi-hazard early warning system;
- (e) Upgrading of service delivery capability, in particular for aeronautical and marine meteorological services; and
- (f) Implementation of WMO Flood Forecasting Initiative, water resources assessment and regional exchange of hydrological data and information.

The MG-4 considered that “the further improvement of the GTS and implementation of the WIS/WIGOS” is still the top priority in the Region for 2012-2015.

6.4 Taking due note of the overall improvement of weather, climate and hydrological services by Members of RA II during the period 2009-2011 as identified from the analysis of the results of the 2010-2011 survey on the basic capability of NMHSs in RA II (ref. Agenda item 4), and the gaps and needs of Members of RA II, the Group considered that the above priority areas for Region II, identified by XIV-RA II, are still valid and to be addressed with the highest priority in the Region for 2012-2015.

6.5 In addition, the Group considered that some other region- or subregion-specific priorities are:

- (a) Sand and dust storms; and
- (b) Thunderstorms and associated extreme weather events.

6.6 The Management Group was pleased to note the progress on the development of RA II Strategic Operating Plan (SOP) 2012-2015 by the Task Team composed of Mr X. Xu

(China); Dr B.Y. Lee (Hong Kong, China); Mr L.S. Lee (Hong Kong, China); Ms M. Jabbari (Islamic Republic of Iran); Mr N. Hasegawa (Japan); Dr W.-T. Yun (Republic of Korea); and Ms M. Nazarova (Uzbekistan). The Group further noted that the president of RA II requested the Management Group, Working Groups and the Task Team members as well as the Secretariat to further work on the formulation of Regional Key Outcomes (RKO) and finalize the RA II SOP 2012-2015 before the MG-4 session. It also noted that a preliminary draft RA II Operating Plan (WIGOS/WIS part – Expected Result 4) was proposed to the WG-IOS/WIS by the Secretariat, with using a Template for Operating Plans of the Technical Commissions and Regional Associations prepared by the Strategic Planning Office of WMO.

6.7 The Group reviewed the draft RA II Operating Plan (WIGOS/WIS part - Expected Result 4). Recognizing the need for identifying RKO, concrete activities, responsibility and timeline for the Operating Plan, the Group noted that the already identified RA II's deliverables were incorporated into the table under the proposed RKO. Some new RKO (e.g., RKO 4.24 - Migration to Table Driven Code Forms (TDCF)), Deliverables and Activities were proposed in line with Cg-XVI decisions and taking into account the work plans of sub-groups on IOS and WIS agreed at the first session of WG-IOS/WIS.

6.8 The Group welcomed the progress on the development of the Expected Result 4 part of the RA II OP (2012-2015) and agreed on the approach taken for identifying RKO, concrete activities, responsibility and timeline for the RA II Operating Plan. The Group further agreed that the same approach should be extended to the development of other Expected Results 1-3 and 5-8 to complete the RA II Operating Plan. It suggested that the further streamlining by prioritizing the deliverables be considered to focus on realistic and feasible deliverables to be implemented in 2012-2015.

6.9 To undertake the above task, the MG-4 decided the new composition of the Task Team on Strategic Planning as follows: Mr L.S. Lee (Hong Kong, China: Chair); Mr X. Xu (China); Ms M. Jabbari (Islamic Republic of Iran); Mr N. Hasegawa (Japan); Dr M.-H. Ahn (Republic of Korea); and Ms M. Nazarova (Uzbekistan), and requested the Task Team to work on the further development of RA II (Strategic) Operating Plan. The MG-4 agreed that the Chairpersons of Working Groups be involved in the task team's work and requested the Secretariat to facilitate and assist the work of the Task Team.

6.10 The MG-4 further agreed on the key milestones for completion of the RA II Operating Plan, as given below:

- Finalization of draft OP (ER 4 part) by the Task Team on Strategic Planning by 31-Mar-2012;
- Development and finalization of RA II Operating Plan (ERs 1-8) (by 15-Jun-2012);
- Adoption of RA II OP 2012-2015 (at the MG-5 session in June/July 2012);
- Refining of RA II OP and development and adoption of RA II SOP 2013-2015 (at XV-RA II, Dec-2012).

## **7. ORGANIZATION OF THE FIFTEENTH SESSION OF REGIONAL ASSOCIATION II (XV-RA II) AND THE RA II REGIONAL SEMINAR** (*agenda item 7*)

### **7.1 XV-RA II session concept** (*agenda item 7.1*)

#### *Improvement in WMO processes and practices*

7.1.1 The concept of the XV-RA II session was presented by the WMO Secretariat. The MG-4 noted the on-going WMO initiative on the continuous improvement in WMO processes and practices, and recognized the need for greater efficiencies and cost-effectiveness in the organization of the session, with particular attention to regional challenges, requirements and

implementation plans. The Group agreed that XV-RA II would focus on the development of an efficient work programme, simple but effective and carbon neutral documentation and enhancement of active discussions for decision-making.

7.1.2 Detailed outcomes of the discussion on specific issues are given below.

## **7.2 Preparation for XV-RA II session (agenda item 7.2)**

### Date and place of XV-RA II session

7.2.1 The MG-4 recalled that further to the initial agreement at the MG-3 session and following consultations among RA II Management Group members and the recommendation of the president of RA II on the place of XV-RA II session, the President of WMO concurred with the proposal of the Secretary-General that the fifteenth session of Regional Association II (Asia) be held in Doha, Qatar in December 2012. The Group expressed its appreciation to the Government of the State of Qatar for its kind offer to host the session.

7.2.2 The Group recalled that the duration of XIV-RA II (Uzbekistan in 2008) was reduced from nine days (for XII-RA II in Republic of Korea in 2000 and XIII-RA II in Hong Kong, China in 2004) to seven days. It considered that a total of seven days would be necessary and sufficient for the effective organization of the XV-RA II session (Qatar in 2012).

7.2.3 In view of the fact that the 2012 United Nations Climate Change Conference (UNFCCC COP18) is planned to be held in Doha, Qatar from 26 November to 7 December 2012 and that the inauguration of the new Doha International Airport is planned for 12 December 2012, the Group considered that XV-RA II would be held from Thursday, 13 December to Wednesday, 19 December 2012 (seven days including one-day holiday on Saturday, 15 December 2012), preceded by a two-day Regional Seminar on Tuesday, 11 and Wednesday, 12 December 2012. It agreed that the final date of the session would be confirmed at the next MG session (MG-5) planned during EC-64 in June/July 2012.

### Agenda

7.2.4 The Group considered the possible agenda and documentation plan, with reference to the XIV-RA II agenda and that for the forthcoming EC-64, in accordance with the WMO General Regulations. The Group agreed that selected emerging issues and specific regional challenges be discussed during the session under agenda item 6, as well as in conjunction with scientific lectures and/or the Regional Seminar. It also agreed that the session should concentrate more on decision-making.

7.2.5 The MG-4 agreed to the draft Provisional Agenda, as given in **Annex VII**, for further review and decision at the MG-5 session.

### Work Plan

7.2.6 The MG-4 agreed on the proposed draft basic Work Plan for the XV-RA II given in **Annex VII**. The first day should deal with the organization of the session (agenda item 1) and Reports by the president of RA II and the Secretary-General as well as WG Chairs and Pilot Project Coordinators (agenda items 2-3). The second day would be allocated for discussions on controversial issues in the Region. After a one-day break on Saturday, the session would resume the discussions and decisions, moving on to agenda items 4-12.

7.2.7 The Group further agreed that all items should be discussed in Plenary meetings, as in the past, with *General Plenary* to be chaired by the president and the vice-president; and *Programme Plenary* to be chaired by Co-Chairs (see paragraph 7.2.13). *Programme Plenary A* items would be: Observation and Information Systems; Weather and DRR Services; and Research, and *Programme Plenary B* items would be: Climate and Water;

Capacity Development; and Partnerships. Chairs, Co-Chairs and Secretaries of the Plenaries should facilitate the effective discussions and decisions through the pre-session coordination meeting(s).

7.2.8 Working hours could be 09:00 to 12:00 and 14:00 to 17:00 (six hours per day). Side meetings and ad hoc group meetings can be organized outside the above working hours in English without interpretation.

#### Document preparation

7.2.9 The RA II MG-4 agreed on the need for more informative but condensed documents to facilitate discussions and decisions, focusing on regional aspects and priorities, and the need for more consultation and collaboration with the president, WG Chairs and Pilot Project Coordinators for preparation of documents. To facilitate the effective preparation of reports of WGs and pilot projects, the Group requested the Secretariat to prepare a template for the report document that should be sent to the Chairs and Coordinators early in advance.

7.2.10 The Group also agreed that, similar to the documents for EC-64, the pre-session documents should consist of DOCs (including draft texts, draft Resolutions and short Progress/Activity Reports), and some INFs (English only). The draft texts for inclusion in the general summary with draft Resolutions should be prepared early in advance and distributed to Members for prior consultation. DOCs should also be prepared in line with five Strategic Thrusts and eight Expected Results similar to those proposed for EC-64. For RA II, DOCs should be prepared in Arabic, Chinese, English and Russian. INFs and DOCs should be distributed through a WMO website, as soon as they are available.

#### In-session documents and interpretation

7.2.11 The Group considered it appropriate that the in-session documents would be prepared in Arabic, Chinese, English and Russian for early drafts; and for final drafts in English (and other languages, if requested). For the session Abridged Final Report, English approved final drafts would be translated into Arabic, Chinese and Russian in due course after the session.

7.2.12 The Group agreed that during the session, interpretation would be provided in Arabic, Chinese, English and Russian. It noted that the Secretariat would facilitate Russian interpretation for Members' easier communication with the president during the session.

#### Chair/Co-chairs

7.2.13 The Group requested the president and the vice-president to work on the nomination of possible Co-Chairs with the assistance of the Secretariat for further consideration and decision by the MG-5.

#### Establishment of Committees

7.2.14 The Group agreed that Credential Committee and Drafting Committee will not be established. The composition of the Nomination Committee (three-four Members) and Rapporteur on Review of the previous resolutions and recommendations should also be considered at the MG-5 session. The Group noted that the Coordination Committee would consist of the president and vice-president; Co-Chairs; Secretaries of the Plenaries and some Secretariat representatives.

#### Proposal for new Working Mechanism of RA II for 2013-2016

7.2.15 The Group reviewed the strengths and weaknesses of the current working structure of the RA II subsidiary bodies. It expressed its concern about the very limited communication

within the Working Group and a low level of response from theme leaders (ref. paragraph 3.4.4). It also noted the concern expressed by the WIS sub-group coordinator of WG-IOS/WIS that (a) expert members of Working Group and Sub-groups are generally less active compared to typical CBS expert team members; (b) some of the members failed to attend the meeting due to national restrictions on travel abroad; and (c) Members of RA II are not necessarily cooperative and responsive to inquiries by theme leaders, which set limitations to the activities of theme leaders whose main responsibility is collecting information about status of operations/services and requirements in each field. In order to address these issues systematically at RA level, the Group agreed on the need to learn the experience of CBS in nomination procedure, where PRs are reminded of their commitment on core member working days per year, which helped raise the activeness of experts nominated. The Group also agreed on the need for briefing to Members on the nomination procedures and work of Regional Association with the concrete guidelines on the work.

7.2.16 Concerning the communication issues among sub-group coordinators and theme leaders raised by WGDRS Chair, the MG-4 agreed that WGDRS Chair should engage and establish working contacts with active project leaders through a virtual forum. With regard to (b) of paragraph 7.2.15, the Group considered that a special invitation letter to the Ministry of Foreign Affairs or Permanent Mission in Geneva would be useful to obtain the government approval.

7.2.17 In this connection, the vice-president underlined the volunteerism in the work of the subsidiary bodies of the Regional Association. He reiterated the need for giving recognition to the work and for MG's decision to replace silent experts (e.g., after one-year of insufficient contribution). Reducing the number of experts in WGs could also be considered.

7.2.18 The MG-4, with reference to the work structures of other Regions, agreed that the functions of the Management Group should be strengthened. The Group agreed that the MG-5 session review the membership and Terms of Reference (ToR) of the Management Group for this purpose to prepare a draft Resolution concerning the Management Group to be adopted at the XV-RA II session.

7.2.19 The MG-4, in view of the successful implementation of RA II pilot projects under the strong initiative of the coordinators, expressed the view that future working structure for RA II would be: Working Groups (for essential tasks); Task Teams (for specific time-bound tasks); and pilot projects, in addition to the Management Group. The MG-4 agreed that the Group continue to work on the future working structure and the MG-5 propose more innovative ideas to be submitted to the XV-RA II session for decision.

#### Election of officers

7.2.20 The Group noted that the Government of Qatar indicated its intention to nominate Mr A.A. Mohammed to be a candidate for the president of RA II, for election of officers during XV-RA II.

#### Dates and place of the sixteenth session

7.2.21 The MG-4 was pleased to note the interest of the Islamic Republic of Iran to host the sixteenth session of RA II (XVI-RA II) in 2016.

#### Scientific Lectures and Discussions

7.2.22 The Group agreed that two or three scientific lectures for a total of two hours maximum should be considered focusing on emerging issues and specific challenges in the Region. The Group noted that JMA would like to provide a lecture, possibly either on their activities related to the GFCS or on aeronautical meteorological services. IRIMO would also be prepared to deliver a scientific lecture. The vice-president requested MG members to

provide the Secretariat with the proposal for possible topics and potential speakers, and agreed that potential speakers should submit abstracts to the president for further consideration at the MG-5 session.

### Brainstorming session

7.2.23 The MG-4 considered that, as in XIV-RA II, a brainstorming session could be organized as a side meeting during XV-RA II, if necessary, only for discussion on new concepts/initiatives.

## **7.3 RA II Regional Seminar (agenda item 7.3)**

7.3.1 The RA II MG-4 agreed to hold the RA II Regional Seminar at the same venue as for the XV-RA II session on 11 and 12 December 2012, prior to the XV-RA II session. The seminar will be conducted in English only. No interpretation will be provided in any other language during the Seminar.

7.3.2 Presentations in the Seminar shall consist of key-note presentation (20-30 minutes) followed by country case studies (10-15 minutes each), to facilitate the participation of a larger number of Members. Possible topics would be: strategic planning; role, operation and management of NMHSs; capacity development; improving climate services; and the implementation of the WIGOS/WIS in RA II. Major achievements by Working Groups and Pilot Projects could be included into the topics. The topics should be finalized at the RA II MG-5.

7.3.3 The MG-4 requested that WMO financial support be provided for one participant from Members with very limited financial resources to participate in the Regional Seminar provided that the participant is planning to attend the XV-RA II session. Financial support shall only be provided with priority to participants delivering presentations in the Seminar.

## **7.4 Logistical arrangements (agenda item 7.4)**

7.4.1 The MG-4 was briefed by Mr A.A. Mohammed, Permanent Representative of Qatar with WMO, on the logistical arrangements for the XV-RA II session and the Regional Seminar. Mr E. Gouaini, Chief, Conference Services Unit, WMO, provided a short report of his pre-session visit.

7.4.2 The MG-4 noted that the meeting venue would be the Hotel Marriot City Centre (Courtyard by Marriot). The main and subsidiary meeting rooms would be located on the first floor, which is dedicated to the session. The block reservations of the rooms in the same hotel will be arranged for all the participants. The attractive discounted price will also be arranged with the support of Qatar. In addition, a list of some affordable hotels will be provided within the vicinity of the conference venue to meet the budgets and choices of participants. Space for several booths will be allocated for exhibition of hydrometeorological instruments and equipment.

7.4.3 The entry visa to Qatar will be granted to all the participants free of charge. The participants will benefit from visa issuance at the airport upon arrival. Assistance for participants at the airports and transportation will also be provided. A 24-hour un-interrupted high-speed Internet will be provided as well as IT specialists. A reception (dinner) and an excursion to a Desert Lunch will be offered by the Meteorological Department of Qatar.

7.4.4 In view of the above and possible difficulty in finding appropriate accommodation due to UNFCCC COP18, the Group requested the WMO Secretariat to ensure that the Information Note for Participants (XV-RA II/INF. 1) be distributed as early as possible in collaboration with the Local Organizing Committee.

## **8. OPERATION OF THE REGIONAL OFFICE FOR ASIA AND THE SOUTH-WEST PACIFIC AND THE WMO OFFICE FOR WEST ASIA (*agenda item 8*)**

8.1 The RA II MG-4 reviewed the activities of the Regional Office for Asia and the South-West Pacific during 2009-2011, including WMO Office for the South-West Pacific and with special attention to the performance of the WMO Office for West Asia, established in Manama, Bahrain in March 2007.

### **Regional Office activities for RA II**

#### *Regional activities*

8.2 The Management Group commended the continued efforts by the Regional Office for Asia and the South-West Pacific and WMO Office for West Asia in supporting the work of the Regional Association II (Asia), its president and subsidiary bodies, and in providing assistance to Members, in coordination with other WMO technical departments and offices, in implementing the various programmes activities in the Region. The Regional Office contributed to facilitating the monitoring of the implementation of the RA II Strategic Plan 2009-2011 and further development of the RA II Strategic Operating Plan for 2012-2015, and conducted its advocacy role through missions to Members and representation at relevant regional events.

8.3 The Group recalled that regional events were successfully organized, including the Fifth Technical Conference on Management of Meteorological and Hydrological Services in RA II (Asia) – Opportunities and Challenges for Delivery of Weather, Climate and Water Services (Daegu, Republic of Korea, 29 November - 3 December 2010), which focused on the six priority topics of RA II: (a) Strategic planning and management of NMHSs (including: social and economic benefits of weather, climate and water services; strategic partnership; and regional cooperation); (b) Capacity development in NMHSs (including human resources development); (c) Improving climate services (including GFCS activities; and adaptation to climate variability and change); (d) Improving service quality and service delivery, with new technologies in meteorology and hydrology (including Quality Management; sand and dust storms; and SWFDP); (e) Role of NMHSs in disaster risk reduction including emergency response; and (f) Implementation of the WIS/WIGOS.

#### *Regional Collaboration*

8.4 The MG-4 was pleased to note that collaboration was maintained and strengthened with UN and regional organizations/bodies, including UNDP, UNISDR, UNEP, ASEAN, the South Asian Association for Regional Cooperation (SAARC), UNESCAP, League of Arab States (LAS), CASPCOM, Mekong River Commission and Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES). A new partnership with the Gulf Cooperation Council (GCC) was developed through preparation of a Memorandum of Understanding on designing and implementing joint cooperation projects (expected to be concluded in March 2012).

#### *Technical cooperation and education and training activities*

8.5 The Group was pleased to note the technical cooperation activities carried out by the Regional Office for Members. The Group was informed of the progress of the Trust Fund project for Sri Lanka for the installation of an S-band Doppler radar system, including completion of access road, site preparation and commencement of foundation work at Gongala Peak site. Two factory training courses (September/October 2010), factory acceptance tests (September/October 2010 and January 2011), a coordination meeting (October 2010) were conducted at the premises of the supplier of the radar. The installation of the radar and relevant training are scheduled for the first half of 2012. It also noted that

under the WMO-RIMES joint project for “Reducing risks of tsunami, storm surge, large waves and other natural hazards in low elevation coastal zones” for Bangladesh, India, Maldives, Myanmar, Sri Lanka and Thailand, funded by the ESCAP Multi-donor Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries in April 2011, the Severe Weather Forecasting Demonstration Project for the Bay of Bengal (South Asia) is being implemented in 2011-2013.

8.6 The Group further noted that, within the framework of VCP, during 2009-2011, assistance was provided to Afghanistan, Bangladesh, Bhutan, Cambodia, Democratic People’s Republic of Korea, Lao People’s Democratic Republic, Kazakhstan, Kyrgyzstan, Maldives, Mongolia, Myanmar, Pakistan, Sri Lanka, Tajikistan and Yemen for providing expert services and equipment to enhance basic observing, telecommunication, data-processing, climate data management and hydrological facilities.

8.7 A WMO fact-finding mission to the Democratic People’s Republic of Korea was carried out from 18 to 25 March 2011, with representatives and experts from the WMO Secretariat and the China Meteorological Administration. In collaboration with the State Hydrometeorological Administration (SHMA) and relevant concerned departments and institutes in DPRK, including the user organizations such as the Ministry of Land Environment Protection (MoLEP) and the Academy of Agricultural Sciences (AAS), the mission assessed the current capability of SHMA with regard to weather, agrometeorological, hydrological, oceanographic and climate information services, the status of natural hazards, the capability of the observation network and telecommunication system, and assisted SHMA in the development of proposals and recommendations for the enhancement of its meteorological and hydrological services. The key recommendations of the mission for the consideration of the international community were related to strengthening of: agrometeorological services; flood and drought monitoring early warning systems; climate information services; and the observation network and calibration facilities. A WMO circular letter requesting consideration of possible support was distributed to Members of RA II and potential VCP donor Members of WMO in November 2011 with the mission report.

8.8 The MG-4 was pleased to note that there were 38 training events held in RA II during 2008-2011, and 11 Members of RA II received 65 fellowships from September 2007 to October 2011.

#### Emergency response and assistance activities

8.9 The Group also noted the recent and on-going emergency assistance provided under the Emergency Assistance Fund to RA II Members affected by natural disasters, including Bangladesh, Myanmar and Pakistan. Following Cyclone *Sidr*, three SSB transceivers and two sets of Automatic Weather Stations (AWSs) were provided to Bangladesh with the support of France, UK, VCP(F) and the WMO Emergency Assistance Fund. Following Cyclone *Nargis*, hydrometeorological instruments including an AWS, an electric generator, PCs for storm surge modeling as well as short-term training and a long-term fellowship, were provided to Myanmar in 2008-2011, and more reliable Internet connectivity is to be provided with the Emergency Assistance Fund and the VCP(F).

8.10 The Group was informed that, following the exceptional severe floods in Pakistan in July-August 2010 and a WMO fact-finding and needs-assessment mission carried out in November 2010 in collaboration with ESCAP and in coordination with UNESCO, several donor Members of WMO, including China; Hong Kong, China; Finland; Japan; Saudi Arabia and USA, indicated their possible support to restore essential hydrometeorological infrastructure (AWSs, conventional synoptic meteorological stations, etc.) in Pakistan, in addition to the WMO support under the Emergency Assistance Fund. In this regard, the Permanent Representative of Pakistan with WMO extended his appreciation to the WMO mission and the Members who indicated assistance to Pakistan. He stressed the valuable



support of the WMO Office for West Asia, which was relocated at the premises of the Pakistan Meteorological Department for one-month period during/after the 2010 flood.

#### WMO Office for West Asia

8.11 The MG-4 expressed its appreciation to the Government of Bahrain for the continued considerable support to the WMO Office for West Asia provided since its inauguration at the UN House in Manama, Bahrain, on 12 March 2007. It noted that the Office has played a key role in coordinating communications with NMHSs in West Asia for identifying the requirements for the development of the NMHSs and in the organization of several meetings in the subregion. The Office has developed and maintained close working relationships with other UN agencies and regional and subregional organizations in West Asia, including the League of Arab States (LAS), in particular in the areas of disaster risk reduction, sand and dust storms, and climate change. In Bahrain, the Office has promoted meteorology and meteorology-related issues and supported national activities in relevant areas such as disaster risk reduction, protection of the environment and climate change in direct collaboration with the Bahrain Meteorological Service and other national stakeholders.

8.12 The Group was pleased to note that, during the period from January 2009 to January 2012, the main thrust of the Office was centred around the following domains: (a) Providing support to Regional Association II; (b) Providing support to individual WMO Members, in particular these in West Asia; (c) Providing support to various WMO Departments and assisting in implementation of WMO programmes and activities in the Region; (d) Liaising with and providing support to meteorology-related activities of LAS and its institutions; (e) Providing support to the United Nations Country Team (UNCT) in Bahrain and UN and regional agencies on meteorology-related matters.

8.13 It further noted that, through the WMO Office for West Asia, the Regional Office is expected to promote interregional coordination among Regional Associations I (Africa), II (Asia) and VI (Europe). In this respect, the MG-4 urged the Secretary-General and Members of RA II to consider strengthening of the WMO Office for West Asia through increased financial and human resources. It requested the Secretariat to take the necessary actions for thanking the Government of Bahrain on behalf of RA II and for seeking continued or further support to the Office.

### **Review of Regional Office Location**

#### Location of the Regional Office for Asia and the South-West Pacific

8.14 The MG-4 recalled that Cg-XVI noted that (a) the relocation of the Regional Director for the Americas to Paraguay in January 2010 has brought some benefits for Regions III and IV by fostering closer collaboration with Members and between the two Regions; and (b) XV-RA I urged the Secretary-General to explore relocation of the Regional Office for Africa to the Region in order to improve the communication with Members and partner organizations, and enhance its effectiveness in the governance and coordination of the regional activities.

8.15 The Group further noted that, considering the concerns of RA I and the benefits for Regions III and IV achieved through the relocation of the Regional Director to the Region, as well as opinions that the location of the Regional Directors and Offices in Geneva has advantages in terms of coordination with the WMO Secretariat and Programmes, Congress recommended that the Secretary-General consider, in consultation with the presidents of RAs concerned, conducting a comprehensive review of the regional offices resources and location and propose measures to enhance their efficiency and effectiveness.

8.16 In this respect, the Group was pleased to note the on-going Secretariat initiative to review the Regional Office location, with a special focus on efficient and effective management and operation of the Regional Office for Asia and the South-West Pacific (RAP

Office). It recognized that the location of RAP Office was maintained in Geneva since its establishment in 1979. Tenth Congress (Cg-X: 1987) agreed that RAP Office should continue to be at the WMO Headquarters and that the future location should be decided on the basis of the future sessions of RAs II and V. The Group recalled that XIII-RA II (Hong Kong, China, December 2004), in view of the advantages of its location at WMO Headquarters to ensure effective and efficient implementation of the Regional Programme and related activities, agreed that the Office should remain in Geneva for the time being and that this issue would be addressed after a careful evaluation of the operations of the Sub-regional Office for West Asia. XIV-RA II (Tashkent, Uzbekistan, December 2008) noted with satisfaction that the WMO Office for West Asia has played a key role in the subregion.

8.17 The Group further noted with pleasure that there are some potential host Members (Macao, China; Republic of Korea; Singapore; Thailand, etc.) offering to host the RAP Office and expressed its appreciation to potential host Members for their expected valuable contributions to operate the Regional Office in the Regions.

8.18 The MG-4 reviewed the proposed criteria for consideration of the Regional Offices and timeline for decision and selection of the location of RAP Office. The Group agreed in principle on the proposed criteria and timeline and expressed the view that pros and cons should be carefully studied and analysed before taking the decision. The agreed criteria and timeline for consideration of location of the RAP Office are given in **Annex IX**.

8.19 The Group considered the unique feature of Region II (e.g., large area and complex climate patterns) and its active implementation of various WMO Programmes, thus the linkage with WMO Programmes and Technical Departments is indispensable. It agreed that the consideration be given to the necessary size of the Regional Office in the Region. In view of the Cg-XVI's decision on the enhancement of linkage between Regional Associations and Technical Commissions, some members of the Group stressed the advantage of locating the Regional Office in Geneva and expressed their preference to maintain the Regional Office in Geneva.

*Measures to enhance efficiency and effectiveness of the Regional Office for Asia and the South-West Pacific, and WMO Offices for West Asia and the South-West Pacific*

8.20 The MG-4 welcomed that the Development and Regional Activities (DRA) Department, including the Regional Office for Asia and the South-West Pacific, implements programme activities towards the Expected Result 6 (Enhanced capabilities of NMHSs, in particular in developing and least developed countries, to fulfil their mandates) under the Strategic Thrust 3 (Strengthening capacity-building) of the WMO Strategic Plan 2012-2015.

8.21 The Group was informed of the planned further enhancement of development and regional activities through the organizational adjustment in DRA Department by assigning the LDC Programme responsibility to the Regional Office for Africa; including the south-south cooperation focal point responsibility into the RAP Office; and creation of a Project Coordination Unit, and by the potential relocation of Regional Offices to the Regions. It expressed the view that the approach taken for the WMO Office for the South-West Pacific in collaboration with SPREP in establishing the Pacific Meteorological Desk Partnership represents a model mechanism to enhance the human resources support to the Office, which could be applied to other WMO Offices in the Regions.

**9. OTHER BUSINESS** (*agenda item 9*)

The MG-4 agreed on the need for longer time allocation to the next Management Group session (MG-5) planned to be held during EC-64 in June/July 2012 to enable extensive discussions on many important issues to be considered and decided before XV-RA II. The use of week-end and holding several meetings could be considered for this purpose.

**10. CLOSURE OF THE SESSION** (*agenda item 10*)

10.1 The session reviewed and adopted the draft Report.

10.2 The participants, the vice-president of Regional Association II and the representative of WMO expressed their thanks and appreciation to the Government of the State of Qatar and Mr A.A. Mohammed and his staff for the warm hospitality and excellent arrangements made for the MG-4.

10.3 The session closed at 11:20 hours on 2 March 2012.

---

## FOURTH SESSION OF THE RA II MANAGEMENT GROUP (MG)

*(Doha, Qatar, 29 February – 2 March 2012)*

### LIST OF PARTICIPANTS

#### 1. Members of RA II Management Group and Representatives of Members of RA II

Dr Qamar-uz-Zaman Chaudhry Vice-president of RA II Chairperson	Pakistan	advisorclimate@gmail.com
Mr Shen Xiaonong Alternate to Dr Zheng G.	China	guoji@cma.gov.cn sxn@cma.gov.cn
Mr Xu Xianghua Adviser to Dr Zheng G.	China	xianghua@cma.gov.cn
Mr Bishwajit Mukhopadhyay Alternate to Dr A. Tyagi	India	mukhoddg@gmail.com
Mr Noritake Nishide Alternate to Dr M. Hatori	Japan	iao-jma@met.kishou.go.jp
Mr Yoshiaki Kanno Adviser to Dr M. Hatori	Japan	ykanno@met.kishou.go.jp
Mr Naohisa Koide Adviser to Dr M. Hatori	Japan	koide-n@met.kishou.go.jp
Dr Ha-Man Cho Alternate to Mr S.-J. Cho	Republic of Korea	hmcho@kma.go.kr
Dr Myoung-Hwan Ahn Adviser to Mr S.-J. Cho	Republic of Korea	mhahn@kma.go.kr
Ms Yeun-Sook Choi Adviser to Mr S.-J. Cho	Republic of Korea	yschoi@kma.go.kr
Dr Saad M.S. Mohalfi Member	Saudi Arabia	saadpme@yahoo.com
Mr Mohammed Babidhan Adviser to Dr S. Mohalfi	Saudi Arabia	babidhan@gmail.com
Mr Ali Hemed Albathi Adviser to Dr S. Mohalfi	Saudi Arabia	albathi@hotmail.com
Dr Sergey Myagkov Alternate to Prof. V. Chub	Uzbekistan	nigmi@albatros.uz Uzhymet@meteo.uz

Ms Si Lin Lam Kwong Invited Participant Alternate to Mr C.M. Shun	Hong Kong, China	hildalam@hko.gov.hk
Mr Bahram Sanaei Invited Participant	Islamic Republic of Iran	sanaei@irimo.ir sanaei1@yahoo.com
Ms Farah Mohammadi Adviser to Mr B. Sanaei	Islamic Republic of Iran	farahmohamadi@yahoo.com
Ms Mina Jabbari Adviser to Mr B. Sanaei	Islamic Republic of Iran	mina747@gmail.com affairs.intl@gmail.com
Mr Ahmed Abdulla Mohammed Invited Participant	Qatar	Ahmed_qatar@yahoo.com
Mr Mohammad Karam Ali Adviser to Mr Ahmed Abdulla Mohammed	Kuwait	director@met.gov.kw
Mr Abdul Rahim bin Salem Al- Harmi Adviser to Mr Ahmed Abdulla Mohammed	Oman	al-harmi@caa.gov.om
Mr Valery Dyadyuchenko Invited Participant Alternate to Dr A.V. Frolov	Russian Federation	dvn@mecom.ru
Mr Alexander A. Nurullaev Adviser to Dr A.V. Frolov	Russian Federation	alexnur@mail.ru alexnur@mcc.mecom.ru
Mr Arif Mahmood Rana Invited Participant Chair, WG-IOS/WIS	Pakistan	dgpakmet@gmail.com

## 2. WMO Secretariat

Mr Robert O. Masters Director, Development and Regional Activities (DRA) Department	rmasters@wmo.int
Dr Tokiyoshi Toya Regional Office for Asia and the South-West Pacific, DRA Department	ttoya@wmo.int
Dr Dong-Eon Chang Regional Office for Asia and the South-West Pacific, DRA Department	dchang@wmo.int
Dr Jaser Rabadi WMO Representative for West Asia	jrabadi@wmo.int
Mr Elhousseine Gouaini (part time) Chief, Conference Services Unit, Language, Conference and Publishing Services Department	egouaini@wmo.int

### 3. Local Organizing Committee

Mr Mazen Mohd. Omari

Mazen.omari@caa.gov.qa  
Omarimazen@hotmail.com

Mr Omar S. Modawi

Omar.modawi@caa.gov.qa  
Omar\_modawi@hotmail.com

Mr Gassim Hussain

Buhosain@hotmail.com

Mr Abdulla M.A.M. Al-Mannai

Abudulla.almannai@caa.gov.qa  
almannaimet@gmail.com

---

**FOURTH SESSION OF THE RA II MANAGEMENT GROUP (MG)**

*(Doha, Qatar, 29 February – 2 March 2012)*

**AGENDA**

1. Organization of the session
2. Matters arising from the third session
3. Review of the activities of the RA II subsidiary bodies including three pilot projects established during the fourteenth session of RA II (Tashkent, Uzbekistan, December 2008) and two pilot projects established during the thirteenth session of RA II (Hong Kong, China, December 2004)
4. Review of the Implementation of the Strategic Plan for the Enhancement of National Meteorological and Hydrological Services (NMHSs) in Regional Association II (Asia) (2009-2011), including regional needs and priorities
5. RA II contribution to and participation in WMO priority activities for 2012-2015: Global Framework for Climate Services (GFCS); Aviation meteorological services; Capacity Development; WMO Integrated Global Observing System (WIGOS) and WMO Information System (WIS); and Disaster Risk Reduction (DRR)
6. Development of RA II Strategic Operating Plan for 2012-2015
7. Organization of the fifteenth session of Regional Association II (XV-RA II) and the RA II Regional Seminar
  - 7.1 XV-RA II session concept
  - 7.2 Preparation for XV-RA II session
  - 7.3 RA II Regional Seminar
  - 7.4 Logistical arrangements
8. Operation of the Regional Office for Asia and the South-West Pacific and the WMO Office for West Asia
9. Other business
10. Closure of the session

## REGIONAL ASSOCIATION II (ASIA)

**PLAN FOR  
REGIONAL EVENTS  
DURING THE SIXTEENTH FINANCIAL PERIOD (2012-2015)**

Regional Events \ Years	2012	2013	2014	2015
Fifteenth Session of the Association	13-19.XII.2012 Doha, Qatar			
Session of Management Group	29.II-2.III.2012 Doha (MG-4) and .VI.2012 Geneva (MG-5)			
Session of <i>WG on WMO Integrated Observing System and WMO Information System (WG-IOS/WIS)</i>				
Session of <i>WG on Disaster Risk Reduction and Service Delivery (WGDRS)</i>				
Session of <i>WG on Climate Services, Adaptation and Agrometeorology</i>				
Session of <i>WG on Hydrological Forecasts and Assessments (WGH*)</i>				
Technical Conference on Management of Meteorological and Hydrological Services			x	
Regional Seminar	11-12.XII.2012 Doha, Qatar			
Regional LDC Workshop for Asia	x			

**Budget Allocation approved by Cg-XVI (ref. WMO Operating Plan 2012-2015)**

• Regional Association II session	2012	CHF 363,374
• RA II Regional Seminar	2012	CHF 30,708
• RA II Technical Conference	2014	CHF 79,886
• RA II Management Group Session	2012	CHF 25,590
• Working Group sessions of RA II	2013-2015	CHF 45,270
• Assistance to President of RA II	2012-2015	CHF 16,166
• Regional LDC Workshop for Asia	2012	CHF 20,472



**Required Actions for RA II (by Cg-XVI)**

- (a) To enhance the role of the regular Meetings of Presidents of RAs and Presidents of TCs as a coordination and advisory body in planning and implementation of the deliverables of the WMO Strategic and Operating Plans (ref. paragraph 2.4.8);
- (b) To update the regional strategic plans as soon as possible after the adoption of the new WMO Strategic Plan in view of developing operating plans forming part of the WMO-wide Operating Plan for the period 2012-2015 (2.4.9);
- (c) (President) To hold consultations with the Secretariat in order to reflect regional priorities in executing the budget, taking into account the need for more synergy between RAs and TCs at programme implementation level, including regional working groups and relevant TCs subsidiary bodies (2.4.7);
- (d) To develop further the regional components of the GFCS, including the establishment of appropriate Regional Climate Centres (RCCs) and expansion of the Regional Climate Outlook Forums (RCOF) (2.4.13);
- (e) To continue to accord highest priority to the development of adequate capability at national, sub-regional and regional levels for the provision of hydrometeorological products and services in support of disaster risk reduction efforts (2.4.14);
- (f) To play a leading role in the capacity development activities in the Regions (2.4.15);
- (g) (President) To regularly review the education and training needs including peer-review monitoring and evaluation within their Region or Commission with the aim of assisting in the prioritization of regional and specialized training needs of Members (Res. 31);
- (h) (President) To establish a policy dialogue between WMO-RTCs, the countries hosting WMO-RTCs and their respective regional associations, aimed at further development of those centres within the context of addressing Members' needs in the WMO high priority areas (Res. 31);
- (i) To establish a high profile programme of fast-track projects to build the necessary capacity of LDCs, in accordance with their needs and priorities, including ICAO QMS requirements in aeronautical meteorology to be met by 2012, and in line with the Global Framework for Climate Services (GFCS), other internationally and regionally agreed development goals and initiatives, including the MDGs, the Declaration of the First Conference of Ministers responsible for Meteorology in Africa, and the Mauritius Strategy for Implementation of the Programme of Action for the Sustainable Development of SIDS (6.3.6);
- (j) To (assist other RAs in the efforts to) promote pilot projects similar to those implemented in RA II to build the capacity of Members; to further develop collaboration between regional associations and relevant technical commissions (6.4.12)
- (k) (President) To maintain strong liaison and ensure inter-regional cooperation and consistency on regional priorities, programmes and projects which cross regional borders (Res. 34);
- (l) (President) To maintain strong liaison between RAs and TCs and undertake joint coordinated actions aimed at harmonized and synchronous implementation of various programmes and projects (Res. 34);
- (m) TCs to provide advice relating to the needs of the RAs and consider the priorities stated by the regional associations in the development of the programmes and projects of the respective technical commissions (Res. 34);
- (n) To provide regional needs and priorities to next SP; to coordinate national contributions; to develop RAs Operating Plans (Res. 38);
- (o) To develop regional WIGOS implementation plan (Res. 50);
- (p) RA II to decide officially on the area of responsibility of each RA II GISC (11.4.4);
- (q) To actively pursue contributions to the refinement of WIS user requirements to ensure that the Commissions and regional programmes requirements on the WIS are taken into account (11.4.17);
- (r) To apply WIS data management principles and practices throughout all WMO data management activities (11.4.19);
- (s) PRAs and PTCs to actively implement the WMO Policy on Gender Mainstreaming; Compile appropriate statistics on the participation of men and women in the work of their bodies; Report annually to the Executive Council on those statistics and progress on implementation of the WMO Policy on Gender Mainstreaming (Res. 54).

## PROGRESS REPORTS ON RA II PILOT PROJECTS

### 1. RA II Pilot Project on the Provision of City-Specific Numerical Weather Prediction (NWP) Products to Developing Countries via the Internet

#### Background

1.1 The RA II Project, initiated in the Thirteenth Session of the RA II in December 2004, on the Provision of City-Specific Numerical Weather Prediction (NWP) Products to Developing Countries via the Internet, has been progressing steadily. It aims at enhancing the capacity of National Meteorological Services of developing countries in the region, with the supply of city specific NWP products by advanced meteorological centres.

1.2 City-specific forecast time series products, provided by Hong Kong, China; Japan and Republic of Korea, have been launched on their respective web sites for trial use by the Members since January 2006.

#### Progress up to February 2012

1.3 As agreed at the 3rd session of the RA II Management Group held in Geneva during the 16th World Meteorological Congress, the project was declared operational on 7 July 2011. A launching ceremony was held in Hong Kong, China and officiated by Dr Tokiyoshi Toya, Director of Regional Office for Asia and the South-West Pacific of WMO.

1.4 By February 2012, 21 RA II Members, namely, Bahrain; Bangladesh; Bhutan; Cambodia; China; Hong Kong, China; Islamic Republic of Iran; Japan; Kazakhstan; Kyrgyzstan; Lao People's Democratic Republic; Mongolia; Myanmar; Nepal; Oman; Pakistan; Republic of Korea; Thailand; Uzbekistan; Viet Nam; and Yemen have joined the project. After the recent addition of more city forecasts for Bangladesh and Cambodia, city-specific forecast time series, including surface temperature, relative humidity, cloud coverage, precipitation, and wind speed and direction, etc, for 233 cities are being provided to the Members via the Internet twice daily.

1.5 New city-specific weather forecasts based on the 10-km Non-Hydrostatic Model of the new high-resolution NWP model suite of the Hong Kong Observatory (HKO) became available since 7 July 2011. Apart from the usual forecast time series product (sample in Figure 1), a forecast time cross section product, as suggested by some Members in the past survey, was also introduced.

1.6 KMA launched a new NWP system based on unified model (UM) of the UK Meteorological Office in mid-2010 to enhance the performance of NWP and produce forecasts of higher quality. The NWP system was further upgraded in 2011 by introducing the latest version of UM and increasing the model resolution. The improved NWP products enabled KMA to provide better service to participating Members.

1.7 The 4D-Var data assimilation system of JMA's Global Spectral Model used for generating city-specific NWP products was upgraded in November 2011. The horizontal resolution of the inner model used in the system was enhanced from T159 to TL319. At the same time, a two-time-level semi-Lagrangian advection scheme and a reduced Gaussian grid were introduced to the inner model to speed up the system.

1.8 To facilitate participating Members to utilize and interpret the forecasts, WMO VCP

training courses on “Use and Interpretation of City-specific NWP Products” were held in Hong Kong, China in 2006 and 2008. A total of 14 WMO Members attended the courses. Besides speakers from Hong Kong, China, experts from Japan and Republic of Korea were invited to deliver talks.

1.9 In the training workshop for the SWFDP for Southeast Asia, which was co-organized by WMO and the Hong Kong Observatory in July 2011, the use and interpretation of the city-specific NWP products were introduced to four participating Members, namely, Cambodia, Laos, Thailand and Vietnam.

1.10 To facilitate participating Members to develop their own data post-processing, a simple application software was developed by HKO for them to try out verification and post-processing using the time series data from Hong Kong, China. JMA also provided software support to the participating Members to develop their own forecast guidance using the city-specific NWP products.

1.11 A survey on this RA II Project was conducted in end 2008 and the Members indicated that the products were generally useful. The access statistics of the web sites of the past two years show that all participating Members made use of the websites.

Future Work

1.12 JMA is planning to increase the number of vertical layers of the Global Spectral Model used for generating city-specific NWP products from 60 to about 100 in the near future. This will greatly enhance the vertical resolution of the model.

1.13 With the availability of new city-specific weather forecasts based on the 10-km Non-Hydrostatic Model of HKO, there is a plan to gradually phase out the Operational Regional Spectral Model (ORSM) in the next couple of years. Production of the existing city-specific products based on ORSM will be decommissioned.



Figure 1. Sample of the city-specific forecast time series provided by the Hong Kong Observatory based on its new 10-km Non-Hydrostatic Model

## **2. RA II Pilot Project to Develop Support for Developing Countries in Aeronautical Meteorology Programme In Region II**

### Background

2.1 The Pilot Project to Develop Support for Developing Countries in Aeronautical Meteorology Programme (AeMP) was established by Regional Association II (Asia) at its thirteenth session in December 2004. The pilot project aims at developing numerical weather guidance products to the National Meteorological and Hydrological Services (NMHSs) of developing countries, and in particular Least Developed Countries (LDCs), in building their capacity in the provision of aviation weather services.

2.2 The pilot project is steered by a Coordination Group comprising experts from participating Members, including China; Cambodia; Hong Kong, China, Islamic Republic of Iran; Japan; Lao People's Democratic Republic; Mongolia; Myanmar; Nepal; and Yemen. The International Civil Aviation Organization (ICAO) and the two World Area Forecast Centres (WAFCs) were invited to participate as observers.

### Progress up to February 2012

2.3 An Asian Aviation Weather Pilot Project Website (<http://www.aamets.org/>) was established by the China Meteorological Administration (CMA) and the Civil Aviation Administration of China (CAAC) in support of RA II Members, in close coordination with WMO and ICAO. The website features a suite of guidance products of numerical model output. The website became semi-operational in March 2007. The website was declared operational on 4 November 2010. A "Regional Seminar on Aeronautical Meteorology Services in Asia", sponsored by CAAC and CMA, was held in Beijing, China on 11-15 April 2011. More than 40 delegates from 12 Asian countries and China participated in the Seminar.

2.4 Meanwhile at the XIV-RA II session held in December 2008, the Regional Association established a Sub-Group on Aeronautical Meteorological Services (WGDRS-AeM), under the Working Group on Disaster Risk Reduction and Service Delivery (WGDRS), with one of the terms of reference in promoting capacity-building activities related to the AeMP within the Region, in particular, the development and implementation of AeM-related pilot projects to assist NMHSs of developing countries in delivering aeronautical meteorological services, in particular SIGMET, TAF and flight documentation.

2.5 In support of the SIGMET advisory trial, a study by ICAO on the feasibility to improve the issuance of SIGMET through the provision of SIGMET advisory information, a SIGMET page was added from 4 May 2011 to 31 July 2011 (Figure 1). It contributed much towards the success of the trial, during which about 2533 textual SIGMET advisories and more than 530 graphical SIGMET advisories were disseminated.

2.6 New management measures were implemented to regulate user applications for the website. Feedbacks, suggestions and any questions related to the website are collected and responded through a dedicated email. Up to February 2012, there are more than 60 users, covering more than 20 developing countries and least developed countries and several developed countries.

2.7 A number of enhancements were implemented on the website in 2011 as follows:

- (a) Provision of SIGMET assistance to Cambodia for capacity building. SIGMETs issued by China CAAC for Phnom Penh, Cambodia are provided through the AFTN and is included in the Pilot Project website;

- (b) The numerical model for the aviation guidance products on the website is enhanced to use the higher resolution global spectral model T639 instead of the original T213;
- (c) Enhancement of aeronautical meteorological products for en-route, including satellite derived wind product and additional numerical weather prediction guidance products; and
- (d) Upgrading of database for various data sources and hardware platform to enhance reliability.

2.8 Further enhancements to be implemented include preparation of products about volcanic ash.

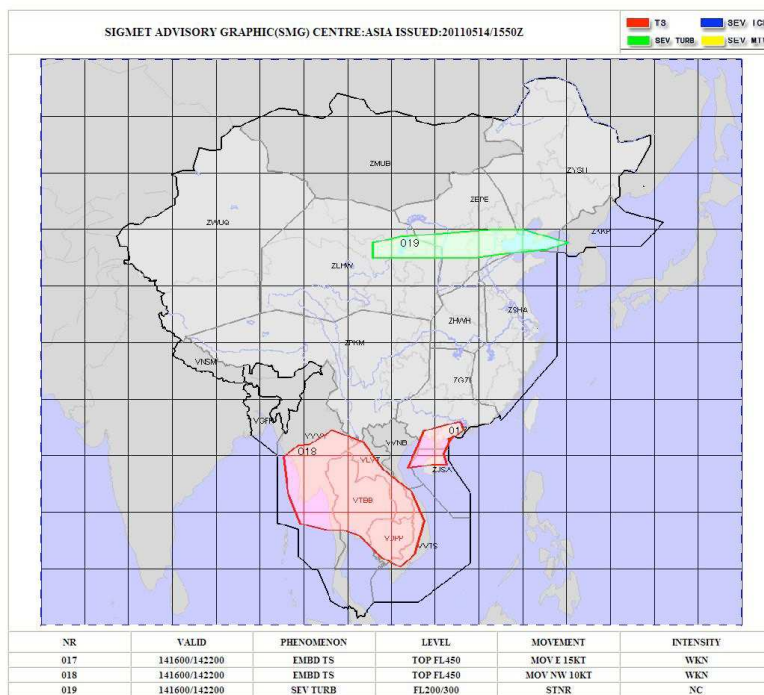


Figure 1 - Real-time SIGMET advisories for the trial in RA II

### 3. RA II Pilot Project to Enhance the Availability and Quality Management Support for NMHSs in Surface, Climate and Upper-air Observations

#### Background and mission

3.1 The Pilot Project to Enhance the Availability and Quality Management Support for NMHSs in Surface, Climate and Upper-air Observations was established at the fourteenth session of Regional Association II (Asia) in 2008, to provide technical support to NMHSs of developing countries or least developed countries to ensure that quality assured observational data from weather, climate and upper-air stations are made available for the WWW, and the WIGOS and other relevant WMO Programmes, including the provision of relevant tools on a centralized website to meet the stated purpose, and training activities. JMA was appointed as the Coordinator of the Coordinating Group of the Pilot Project at the session.

### Progress up to December 2011

3.2 The key accomplishments of the RA II Pilot Project up to December 2011 are summarized as follows:

- (1) The mailing list (qm-obs@ml.kishou.go.jp) for the Coordinating Group has been available since the end of May 2010. The Coordinating Group members are able to send messages to all members through the mailing list for discussion about the Pilot Project.
- (2) As one of the activities of the Pilot Project, the questionnaire to assess the current status of the implementation of relevant observations, their provision and their quality management in RA II was conducted. The interim result of the survey was briefly reported to the JMA/WMO Workshop on Quality Management in Surface, Climate and Upper-air Observations in RA II (Asia).
- (3) The JMA/WMO Workshop on Quality Management in Surface, Climate and Upper-air Observations was held at the JMA Headquarters in Tokyo, Japan, from 27 July to 30 July 2010. Twenty-two experts from 20 NMHSs participated, including WMO representatives. The workshop identified a number of issues regarding the implementation and operation of surface, climate and upper-air observations, and noted that, among various factors, *the most important ones affecting data quality in RA II are calibration and maintenance of the instruments*. The workshop confirmed the importance of full utilization of RICs and promotion of capacity building, establishment of calibration laboratories within each NMHS for enhancement of data quality and availability in RA II. All materials of the workshop are available at the JMA website ([http://www.jma.go.jp/jma/en/Activities/qmws\\_2010/qmws\\_2010.html](http://www.jma.go.jp/jma/en/Activities/qmws_2010/qmws_2010.html)).
- (4) The results of the questionnaire conducted in 2010 were thoroughly analyzed and would be reported in written form to share with the members of the Pilot Project for future reference. The draft document of the report has been prepared by the Coordinating Group members of the Pilot Project, and it is currently reviewed by the WMO secretariat. The final document of the report would be considered to be published as one of the WMO IMOP/IOM Report.
- (5) Questionnaire survey on meteorological instruments, calibration and training in RA II was undertaken in December 2011 to gather necessary information on capability of calibrations of the RA II Members as well as their needs of RIC's services including provision of training materials and training events to the Members. This survey was implemented by the cooperation of RIC Tsukuba and RIC Beijing together with RRCs in RA II.

### Work in 2012

3.3 The action plan for the RA II Pilot Project up to the end of 2012, as summarized below:

- (1) The Pilot Project should aim to realize the set of recommendations developed by the JMA/WMO Workshop on Quality Management in Surface, Climate and Upper-air Observations.
- (2) Exchange practices of the observations and their quality management in different NMHSs would be promoted through the vital information sharing of the Pilot Project Coordinating Group. Existing quality control/assurance procedures developed by Members would be collected by the Coordinator to be shared among Members.

- (3) Referring to the results of the questionnaire survey on meteorological instruments, calibration and training in RA II conducted in December 2011, the Pilot Project would consider and make up a plan aiming to hold a training workshop by the end of March 2013. The workshop would be held for calibration and maintenance of the instruments, which are the most important factors affecting data quality in RA II recognized by the JMA/WMO Workshop on Quality Management held at the JMA Headquarters in Tokyo, Japan, 27 - 30 July 2010.

#### **4. RA II Pilot Project to Develop Support for NMHSs in Numerical Weather Prediction**

##### Background

4.1 The Pilot Project to Develop Support for NMHSs in Numerical Weather Prediction (NWP) was established by Regional Association II (Asia) at its fourteenth session in December 2008. The pilot project aims at developing a consortium comprising NWP operators and product providers to support and assist NMHSs in their full use of NWP products and in the development of NWP activities suited to their circumstances, in their provision of weather services, including forecasts and warnings.

4.2 The pilot project is steered by a Coordination Group comprising experts from participating Members, with experts of Hong Kong, China and Republic of Korea serving as coordinators.

##### Progress up to May 2012

4.3 The China Meteorological Administration (CMA) and Japan Meteorological Agency (JMA) have kindly agreed to provide their numerical weather prediction models, namely, CMA-GRAPES (Global and Regional Assimilation Prediction System) and JMA-NHM (Non-Hydrostatic Model) respectively as the community models.

4.4 Development of the "Asian Consortium for NWP Forecasts" (ACNF) website was underway to provide on-line resources and information to access existing NWP products from RA II Members, including, among others, Hong Kong, China and Republic of Korea. The ACNF web-portal would include enhanced NWP products including more frequently updated prognostic weather charts (every 3-6 hours), forecast charts of severe weather guidance, and forecasts of tropical cyclone movement, intensity and wind distribution as well as links to the City-specific Numerical Weather Prediction (NWP) website. Release of the website for registered access by RA II Members would be made in mid of 2012. Documentation, source code, tutorials and discussion forum on using the community models would be available in the ACNF website during the latter part of 2012.

4.5 A training workshop would be organized in Hong Kong, China towards end 2012 for RA II Members on the use of NWP products on the ACNF website and the community models. Opportunities would be taken to collect users' feedback on the first phase of the project, as well as NWP research and development activities to be covered in the second phase of the Pilot Project.

## **5. RA II Pilot Project to Develop Support for NMHSs in Satellite Data, Products and Training (Second Phase: September 2010 – August 2011)**

### Background and mission

5.1 The fourteenth WMO Regional Association II (XIV-RA II) session held in Tashkent, Uzbekistan, 5-11 December, 2008 adopted a resolution to establish a Pilot Project for the development of support for National Meteorological and Hydrological Services (NMHSs) in the areas of satellite data, products and training. After the session, the WMO Secretariat invited WMO Members to join the Pilot Project Coordinating Group, whose members were Japan (Co-coordinator); Republic of Korea (Co-coordinator); Bahrain; China; Hong Kong, China; India; Kyrgyzstan; Maldives; Oman; Pakistan; Russian Federation; Uzbekistan; Vietnam and, as an observer, EUMETSAT (as of 31 May, 2011).

5.2 The project was established as a kind of self-help effort for NMHSs in RA II to improve the flow of satellite-related information. The major focus of the initiative is to facilitate the timely provision of satellite-related information by satellite operators themselves to users, i.e., NMHSs in RA II, especially in developing countries including least developed countries (LDCs). As there are also other ongoing activities such as the Virtual Laboratory (VL), it is needed to create synergies and provide greater benefits avoiding duplication of efforts.

### Second and Third-Phase Accomplishment

5.3 The accomplishments of the RA II Pilot Project's second phase (from September 2010 to August 2011) and third phase (from September 2011 to August 2012) are summarized as follows:

- (1) The first Meeting of the Coordinating Group of the RA II Pilot Project to Develop Support for NMHSs in Satellite Data, Products and Training, Tokyo, Japan, 21 – 23 February 2011

The Meeting:

- agreed to clarify satellite users' needs and determine the status of utilization through the RA II Pilot Project questionnaire system;
- agreed to share information on access to satellite imagery, data, products and training information through the RA II Pilot Project portal site; and
- shared an understanding that cultivating human resources is essential in promoting the utilization of satellite products.

- (2) Issuance of newsletters to RA II Members

The newsletter is aimed at sharing the latest satellite-related information in areas such as imagery, data, products and training. Issuance of newsletters quarterly for RA II Members:

- Vol. 2/No. 1, December 2010
- Vol. 2/No. 2, May 2011
- Vol. 2/No. 3, June 2011
- Vol. 2/No. 4, September 2011
- Vol. 3/No. 1, January 2012

Contents have included:

- Information on access to satellite imagery, data and products, including application products
- News on meteorological satellites
- News on new services



- Brief progress reports on the Pilot Project
- Introduction to the activities of other RAs and WMO VL activities

(3) RA II Pilot Project website

The RA II Pilot Project website hosted by WMO Space Programme (WMOSP) was set up in the first phase ([http://www.wmo.int/pages/prog/sat/ra2pilotproject-intro\\_en.php](http://www.wmo.int/pages/prog/sat/ra2pilotproject-intro_en.php)), and the following content has uploaded in the second phase:

- Report on the Coordinating Group of the RA II Pilot Project meeting
- Information on access to satellite imagery, data/products and training
- RA II Pilot Project questionnaire relating to the availability and use of satellite data and products

Third-Phase Action Plan

(1) Ongoing issuance of quarterly newsletters to RA II Members

Contents will include:

- Access to satellite imagery, data and products, including application products
- Training activities currently available or expected to be available in the future
- News on current status and future meteorological satellites
- News on new services of satellite imagery, data and their format, products etc
- Research work on satellite imagery, products and their applications to various areas
- Brief progress reports on the Pilot Project
- Introduction to the activities of other RAs and WMO VL activities

(2) Enhancement of Pilot Project web pages on the WMO Space Programme (WMOSP) website hosted by WMOSP

Web pages will include:

- Information on access to satellite imagery, data/products and training
- Newsletter archives
- RA II Pilot Project questionnaires
- Meeting reports

(3) Enhancement of RA II Member and Coordinating Group Member mailing lists (by April 2012)

- More effective collection and sharing of opinions on newsletters, requirements, etc. from RA II Members

(4) Identification of RA II Member requirements (by April 2012)

- Implementation of an RA II Member survey through the web-based RA II Pilot Project questionnaire system on satellite data utilization
- Sharing of questionnaire results through the website
- Identification of RA II Member requirements through the questionnaire system

The web-based RA II Pilot Project questionnaire is now opened to RA II Members and being analyzed, and the result will be shown by April 2012. As a complement to the questionnaire of WMO Space Programme, RA II Pilot Project questionnaire is planned to be distributed every year to clarify satellite users' needs and determine the status of utilization.

- (5) Alignment of Pilot Project activities and Virtual Laboratory activities to optimize assistance to NMHSs in RA II (by August 2012)
- Ongoing liaison with the WMO Secretariat and the VL Secretariat (EUMETSAT) in order to optimize assistance to NMHSs
  - Sharing training materials to avoid duplication of effort and facilitating training activities
- (6) Planning of the second Meeting of the Coordinating Group of the RA II Pilot Project to be held in 2012
- KMA will host the second Meeting of CG of RA II PP in the 4th quarter of 2012
  - RA II PP training workshop/users meeting as joint meeting
- (7) Creation of the fourth-phase working plan (by August 2012)
-

## RESULTS OF RA II SURVEY 2010-2011

### 1. Background

1.1 At its fourteenth session held in Tashkent, Uzbekistan, in December 2008, Regional Association (RA) II adopted the Strategic Plan for the Enhancement of National Meteorological and Hydrological Services (NMHSs) in RA II (Asia) (2009-2011), which was developed based on the survey results on the basic capabilities of NMHSs in RA II during 2005-2008 (the report is available at: <http://www.wmo.int/pages/prog/dra/documents/RAIISurveySummaryReport.pdf>.)

1.2 To facilitate the development of the Strategic Action Plan for 2012-2015, the Association carried out a revised survey on the basic capability of NMHSs in the Region in 2010-2011. The survey questionnaire consisted of 12 main topics including management, observing systems, telecommunications, forecasting system, natural disaster prevention and mitigation, climate services, Aeronautical meteorological services, hydrological services and partnership.

1.3 As of 28 November 2011, 30 out of 35 Members responded to the survey (response rate: 30/35 = 86%). Key findings of the survey are summarised below. It should be noted that the analysis of the survey is based on 30 Members' returns and therefore the interpretation of the results has some limitations.

### 2. Highlights of survey results related to RA II priority areas

#### WIGOS and WIS Issues

2.1 A total of 21 and 6 questions are related to observing and telecommunication systems, respectively and 11 of those are newly added questions in the survey 2010-2011.

2.2 Most Members carry out regular maintenance and calibration of observation instruments and also implement reliability measures on quality management routines and procedures of weather observations. About 90 per cent of Members deliver the measured observations at remote stations in real-time and work towards enhancement of temporal and spatial coverage of their weather measurements each year for the survey period. Compared to NMHSs' efforts for the maintenance of observing systems, the rate of employing qualified maintenance technicians is limited.

*Table 1. Percentage of Members answered 'yes' to the questions regarding maintenance of observation systems*

Questions*	2010 (%)	2011 (%)
II-1. Carry out regular maintenance and calibration	90	90
II-2. Implement reliability measures on quality management routines	90	90
II-3. Real-time delivery of observations	87	87
II-4. Enhancement of temporal and spatial coverage	90	87
II-5. Employ qualified maintenance technicians	80	83

\* These are all new questions added.

2.3 In general, operational observation networks in the Region have been enhanced since 2008. For example, the number of operational surface stations of Regional Basic Synoptic Network (RBSN) was 1,810 in 2011 while it was 1,413 in 2008. The improvements were also made in the number of RBSN upper-air stations, AWSs, wind profilers, and so on. However, 10 out of 30 responded Members do not operate any weather radar, which is an essential observational tool for detecting detailed structure of severe storms and therefore a critical component of nowcasting system. More than 75 per cent of Members operate ground stations to receive high-resolution geostationary satellite images while relatively fewer Members (about 55 per cent) operate the polar-orbiting satellite receiving systems, yet these numbers are increased compared to the results of survey in 2008.

2.4 It was shown that less than 30 per cent of Members are operating lightning detection networks. Considering that lightning is often related to severe storms and hence to possibility of disasters, the enhancement of the lightning detection network of the Members would be one of demanding issues. The percentage of using the service of Regional Instrument Centre (RIC) to ensure the accuracy of the instruments is relatively low (about 45 per cent), while that of using the service of national standard laboratory is about 70 per cent.

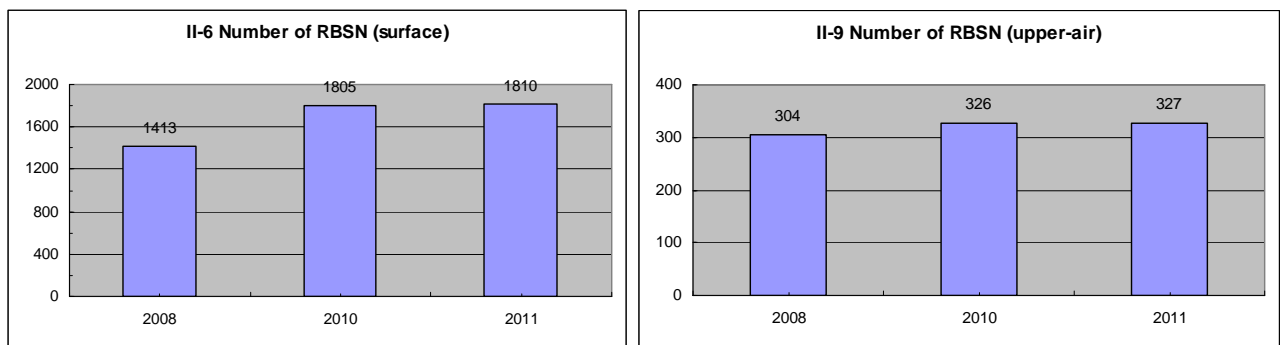


Figure 1. Total number of operational Regional Basic Synoptic Network surface (left) and upper-air (right) stations of the RA II members.

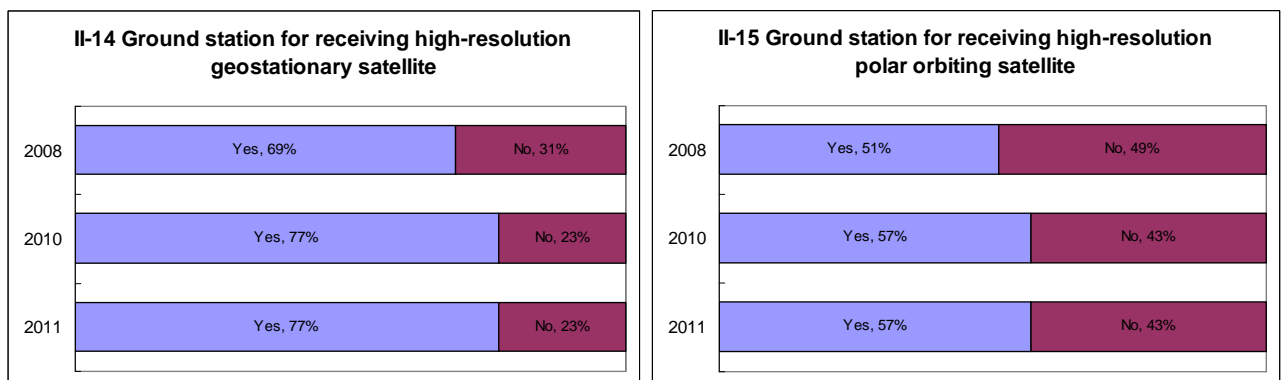


Figure 2. Percentage of operating ground stations to receive satellite images from geostationary and polar-orbiting satellites

2.5 The speed of GTS connection to the Regional Telecommunication Hub (RTH) was analysed with three categories: Category I with speed less than 9.6 kbps; Category II between 9.6 and 64 kbps; and Category III over 64 kbps. Eighty-five per cent of Members now belong to Category III, including Members like Bahrain; Hong Kong, China; Kyrgyzstan; and Mongolia whose connection speeds were increased to this category in 2010.

2.6 Most of Members are connected to the Internet by broadband but three out of 30 responded Members indicated no operational Internet connection. Seven Members are still running radiofacsimile broadcast of meteorological and oceanographic information.

2.7 About 50 per cent of Members reported that they are benefited from the WIS in terms of data exchange. In view of the fact that the WIS is one of WMO main priority areas, RA II needs further enhancement in the capability of the WIS implementation.

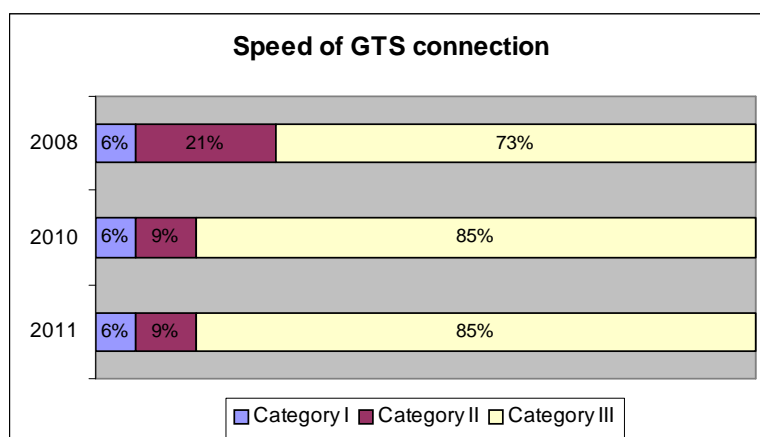


Figure 3. Distribution of the speed of GTS connections to RTHs in terms of Category I (below 9.6 kbps), Category II (9.6 to 64 kbps) and Category III (over 64 kbps).

### DPFS and DRR Issues

2.8 Seven out of 30 responded Members answered that they do not implement automatic data reception, archival and data-processing. In view of the fact that automatic data processing is an essential component of efficient and effective early warning for disaster risk management, further improvement of capability of automatic data processing should be one of priority areas in the Region.

2.9 About 70 per cent of Members are operating NWP system and almost all Members use and interpret NWP products. Two Members have no access to NWP products from major centres. The use of ensemble prediction system and a nowcasting system for high impact weather warning have not yet been applied in many Members.

2.10 Most Members have links with national disaster managers. Given that yet about 65 per cent of Members have a public education programme, more efforts have to be made for better communication with the public.

Table 2. Percentage of Members answered 'yes' to the questions regarding data-processing and forecasting systems

Questions	2008 (%)	2011 (%)
IV-4. Automatic data-processing	74	77
IV-5. Run NWP model(s) operationally	57	67
IV-6. Access to NWP products from major centres operationally	83	93
IV-8. Operate a nowcasting system for high impact weather warning	46	57
IV-10. Use of EPS and consensus technique	-	40

### Aeronautical Meteorological Services

2.11 About 85 per cent of Members are designated as the meteorological authority for aviation services but only a limited number of Members implement quality management systems and cost-recovery of services (in 12 Members).

### Climate Services

2.12 Almost all Members responded that they provide climatological information for the sustainable use in conservation of natural resources, but 70 per cent of Members explicitly provide monthly and/or seasonal climate predictions. For the survey period of 2010-2011 about 45 percent of Members have increased the number of climatological stations and the number of climate variables measured and processed.

### Hydrological services

2.13 Efforts for expanding the spatial and temporal coverage of hydrological observation networks have been made in many Members. More than 70 per cent of Members provide services on flood and flash flood warnings, but services on landslide and debris flow warnings are not provided in many Members. Improvements of adaptation capacity of water resources system in a changing climate are paid relatively less attention.

## **3. Results of other topics**

3.1 *Management* – Most Members have legal basis for the provision of meteorological services, but yet about 50 per cent of Members do not implement cost-recovery for the services. About 90 per cent of Members have a structured training plan for professional, technical and supporting staff. Close cooperation with academia, media and private sector is well maintained.

3.2 *Public weather services* – About 90 per cent of Members operate a Website for real-time weather forecasts and warnings. Sixty-five and 40 per cent of Members are operating automatic telephone answering system and TV weather forecast programme, respectively.

3.3 *Partnership* – Cooperation with other service providers in the provision of specific weather services or advice may need more enhancement. Less than 40 per cent of Members collect and distribute automated meteorological observations from aircraft. About 60 and 40 per cent of Members participate and use the products of RA II pilot projects “on the Provision of City-Specific NWP Products to Developing Countries via the Internet” and “to Develop Support for Developing Countries in Aeronautical Meteorology Programme,” respectively.

## **4. Issues in LDCs in the Region**

4.1 As of the end of 2010, a total of 9 Members in the Region is categorized as Least Developed Countries (LDCs), and 7 out of 9 LDCs in the Region responded to the survey questionnaires. The responses from LCDs were analysed to identify capacities, gaps and needs of LDCs.

4.2 The remarkable gaps in the Region were found in the observational infrastructure of the LDCs. Almost half of the LDCs in the Region do not implement a real-time delivery of measured observations and have no qualified maintenance technicians. Five out of 7 LDCs have neither operational RBSN upper-air stations nor weather radars. Furthermore all LDCs do not have operational lighting location network, and have no interaction with Regional Instrument Centres (RICs).

4.3 Although 30 per cent of LDCs have systems for automatic data-processing and NWP, all Members have an access to NWP products from major centres and mostly use and interpret the NWP products in their forecasting operations. Training opportunities to develop their capacity on the use of NWP products are, therefore, necessary. Only one LDC in the Region operates weather radar and related nowcasting system for high impact weather warning. All LDCs have strong link with national disaster managers.

4.4 About 85 per cent of LDCs are designated as the meteorological authority for aviation services but none of LDCs are implementing quality management systems and cost-recovery of services.

## **5. Consideration of Regional needs and priorities**

5.1 The results of 2010-2011 survey indicate overall improvement of weather, climate and water services by Members in RA II, but also show the gaps between developed and developing countries in the Region.

5.2 In general, operational observation networks in the Region have been enhanced since 2008. However there is also a serious concern that observational infrastructure of some Members in the Region, particularly for detecting detailed structure of severe weather phenomena, such as weather radar, wind profiler and lightning detection networks, are far from sufficient to produce and provide reliable and timely forecast and warning services. It is also found in many LDCs that they can not afford to have qualified maintenance technicians for observation instruments and communication infrastructure for real-time delivery of observations.

5.3 Despite the lack of capability of running NWP operationally in some Members, most Members utilize NWP products from major centres in the forecasting process. Capacity development for the interpretation and application of NWP products should be more enhanced urgently with the highest priority, while the capacity to NWP operation could be further developed within a longer-term framework.

5.4 With regard to the aeronautical meteorological services, most Members are designated as the meteorological authority for aviation services but enhanced support to Members for implementation of quality management systems is required. As for partnership, cooperation with other service providers in the provision of specific weather services or advice should be more enhanced.

---

**FIFTEENTH SESSION OF REGIONAL ASSOCIATION II (ASIA)**  
**(December 2012, Doha, Qatar)**  
**DRAFT PROVISIONAL AGENDA**

**1. OPENING OF THE SESSION**

**2. ORGANIZATION OF THE SESSION**

- 2.1 Consideration of the report on credentials
- 2.2 Adoption of the agenda
- 2.3 Establishment of committees
- 2.4 Other organizational matters

**3. REPORT BY THE PRESIDENT OF THE ASSOCIATION**

**4. PROGRAMME ACTIVITIES – REGIONAL ASPECTS**

***Strategic Thrust 1 - Improving Service Quality and Service Delivery***

- 4.1 Enhanced capabilities of Members to deliver and improve access to high-quality weather, climate, water and related environmental predictions, information, warnings and services in response to users' needs, and to enable their use in decision-making by relevant societal sectors (**ER 1**)
- 4.2 Enhanced capabilities of Members to reduce risks and potential impacts of hazards caused by weather, climate, water and related environmental elements (**ER 2**)

***Strategic Thrust 2 – Advancing Scientific Research and Application, as well as Development and Implementation of Technology***

- 4.3 Enhanced capabilities of Members to produce better weather, climate, water and related environmental information, predictions and warnings to support in particular disaster risk reduction and climate impact and adaptation strategies (**ER 3**)
- 4.4 Enhanced capabilities of Members to access, develop, implement and use integrated and interoperable Earth- and space-based observation systems for weather, climate and hydrological observations, as well as related environmental and space weather observations, based on world standards set by WMO (**ER 4**)
- 4.5 Enhanced capabilities of Members to contribute to and draw benefits from the global research capacity for weather, climate, water and the related environmental science and technology development (**ER 5**)

***Strategic Thrust 3 – Strengthening Capacity-Building***

- 4.6 Enhanced capabilities of NMHSs, in particular in developing and least developed countries, to fulfil their mandates (**ER 6**)



***Strategic Thrust 4 – Building and Enhancing Partnerships and Cooperation***

- 4.7 New and strengthened partnerships and cooperation activities to improve NMHSs' performance in delivering services and to increase the value of the contributions of WMO within the United Nations system, relevant international conventions and national strategic issues (ER 7)

**5. STRENGTHENING GOOD GOVERNANCE (*Strategic Thrust 5*)**

- 5.1 An effective and efficient Organization (ER 8)

- 5.1.1 Internal matters of the Association
- 5.1.2 WMO Strategic Planning – Regional Aspects
- 5.1.3 Operating Plan for the Enhancement of National Meteorological and Hydrological Services (NMHSs) in Regional Association II (Asia)
- 5.1.4 Sixth Technical Conference on Management of Meteorological Services in Regional Association II (Asia)

**6. EMERGING ISSUES AND SPECIFIC CHALLENGES**

- 7. WMO REGIONAL OFFICE FOR ASIA AND THE SOUTH-WEST PACIFIC INCLUDING WMO OFFICE FOR WEST ASIA**

**8. SCIENTIFIC LECTURES AND DISCUSSIONS**

- 9. REVIEW OF PREVIOUS RESOLUTIONS AND RECOMMENDATIONS OF THE ASSOCIATION AND OF RELEVANT EXECUTIVE COUNCIL RESOLUTIONS**

**10. ELECTION OF OFFICERS**

**11. DATE AND PLACE OF THE SIXTEENTH SESSION**

**12. CLOSURE OF THE SESSION**

---

**Draft Basic Work Plan**  
**(Fifteenth session of RA II, Doha, Qatar, 13-19 December 2012)**

All items will be discussed in Plenary meetings	Thursday 13 December		Friday 14 December		Saturday 15 December		Sunday 16 December		Monday 17 December		Tuesday 18 December		Wednesday 19 December	
	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
<b>President of RA II items</b> 1, 2, 3, 5-12	1 2.1 2.2 2.3 2.4 3 9*	5.1.1(a)  WG Rep	5.1.2 5.1.3 5.1.4 5.1.1(b) 6				7		10  WPs	8	WPs  PKs	WPs  PKs	PKs  11  12	
<b>Session Co-Chair A items</b> 4.1, 4.2, 4.4, 4.5				4.1 4.4				4.2 4.5		WPs				
<b>Session Co-Chair B items</b> 4.3, 4.6, 4.7				4.3				4.6 4.7			WPs			

**Explanatory notes:**

- Figures indicate the agenda items
- WPs: consideration of “**early drafts**” (formerly called working papers)
- PKs: consideration by Plenary of “**final drafts**” (formerly called PINKs)
- \* To appoint a Rapporteur on Review of Previous Resolutions

**Side meetings:** dates and time will be provided at the session

## Criteria for consideration of location of Regional/Subregional Offices (in the Regions)

1. The generic criteria for the assessment of appropriate location of WMO Offices in the Regions are being considered in light of ensuring the *efficient, cost-effective and sustainable* operation and management of the Regional Office. [Additional region-specific criteria could be identified.] The generic criteria should include the following:

(a) Efficiency [*The criteria for efficiency are proposed from the standpoint of how efficiently Regional Director can perform duties and responsibilities of the Regional Director/Office.*]:

- linkage with WMO programmes and technical and administration departments/offices for collaboration and coordination [<- time difference to be considered];
- Connection to Members, RA presidents and subsidiary bodies, and Technical Commissions;
- Connection to partners (UN, international and regional organizations, and financial institutions and potential donors) for collaboration and increased advocacy;
- Accessibility/geographical convenience (number of available direct flights to major cities, flight time to possible venues of regional events, visa issuance, etc.);
- Accessibility to the info/data and info exchange [with IT support];
- Availability of international conference facilities;

(b) Cost-effectiveness:

- Staff salary rate (post adjustment);
- Cost of living and quality of life for staff (e.g., housing, education, healthcare services; crime rate);
- Office running cost (including security cost);
- Accessibility (mission cost for Office staff and participants for the meetings; cost for holding sessions);
- Availability of Government support (including staff costs, office space, furniture and running cost; and programme/activity cost);

(c) Sustainability:

- Political stability of the government (neutrality of country and overall social stability);
- Security;
- Environmental friendliness;
- Government commitment to support for longer term (e.g., 4-year period of initial agreement, and continuation).

2. The Regional Office is expected to be composed of:

- 1 Regional Director (D1) to be funded by WMO [core staff];
- 1 Programme Officer (P4) to be funded by WMO [core staff];
- 1 Secretary provided by the host country [core staff];
- 1-2 Programme Officer(s) financially supported by the host country;
- 1-2 Seconded Expert(s) from Member(s), if applicable; and
- 1-2 other support staff (clerk, driver, etc.) provided by the host country, if applicable.

### **Procedures for the selection of the location of RAP Office**

3. The assessment will be made by considering the “pros and cons” of location of RAP Office in Geneva and in the Region (with three candidate locations), based on the above criteria. After the decision of RA II (and RA V) on the relocation of RAP Office from Geneva to the Region, the selection of the location of RAP Office will be made by objective analyses of the regionally-agreed criteria for all the candidate locations.

4. Possible procedures and timeline would be:

- (i) Identification of possible government support (in general) by Macao, China; Singapore and Thailand (by 29 February 2012);
  - (ii) Proposal to RA II MG-4 on the approach and criteria for their review and comments/ endorsement (29 February - 2 March 2012);
  - (iii) Approval by the Management Groups during EC-64 concerning the criteria (late-June 2012);
  - (iv) Assessment of candidates based on Regionally-approved Criteria (September 2012);
  - (v) Consideration by XV-RA II on relocation of RAP Office in the Region (December 2012);
  - (vi) Consideration by RA V Management Group on relocation of RAP Office in the Region (February 2013);
  - (vii) WMO letter to RA II/RA V Members to seek other potential candidates (March 2013);
  - (viii) Assessment of all potential candidates based on Regionally-approved Criteria (December 2013);
  - (ix) Consideration on selection of location of the Office by the Management Groups of RA II and RA V then SG in light of assessment results (April 2014);
  - (x) Presentation to Cg-XVII on the relocation of RAP Office at the selected place (May 2015);
  - (xi) Finalization of arrangements for and conclusion of official agreement with the host government (September 2015);
  - (xii) Completion of relocation of RAP Office (December 2015).
-