Brussels
18–24 September
2009

Regional Association VI (Europe)

Fifteenth session

World Meteorological Organization

WMO-No. 1046

Weather • Climate • Water

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Abridged final report with resolutions

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GENERAL SUMMARY OF THE WORK OF THE SESSION

1. OPENING OF THE SESSION *(agenda item 1)*

1.1 At the kind invitation of the Government of Belgium, the fifteenth session of Regional Association VI (Europe) was held in Brussels, Belgium, from 18 to 24 September 2009. The session was declared open by Mr Daniel K. Keuerleber-Burk (Switzerland), president of the Association, at 0900 on Friday, 18 September 2009, at the International Auditorium, Brussels.

1.2 Mr Keuerleber-Burk expressed his appreciation to the Government of Belgium, represented by the Ministry of Scientific Policy, for hosting the session in Brussels. He extended his gratitude to Dr Henri Malcorps, Director of the Royal Meteorological Institute of Belgium, and Permanent Representative of Belgium with WMO for the excellent arrangements made.

1.3 The president also thanked Mr Michel Jarraud, Secretary-General of the World Meteorological Organization (WMO) and his staff for the impressive preparatory work for this Session.

1.4 The president stressed that many of the important issues discussed at the XIV Session of the Regional Association VI in 2005 in Heidelberg, remained high up on the agenda of the political decision makers. One of those issues was the demand for accurate high impact weather forecasts in support of disaster prevention and mitigation. Another issue was climate change and climate adaption. He referred to the Third World Climate Conference, held just a few weeks before the Session, where the NMHSs had the opportunity to promote climate services in support of the users and political decision makers.

1.5 The president expressed his confidence that the 15th Session of RA VI would allocate high priority to maintain the dialogue with the users as a necessary prerequisite for further improved service delivery. However, in order to fulfil the demands of the users there was a need for developing a good communication foundation. The president encouraged Members to further advance Science and Technology Development and Implementation, strengthen Partnership and Capacity-building and Efficient Management and Good Governance in line with the RA VI Strategic Plan.

1.6 The president noted that this was the first session guided by the WMO Strategic Plan and that the agenda of the session was structured by expected results and strategic thrusts. He encouraged Members to carry out comprehensive discussion on all issues and advised delegates to keep an open view, always bearing in mind the mission statement formulated in the Strategic Plan, namely, that RA VI should coordinate, develop and promote meteorological and hydrological infrastructure and expertise on weather, climate, water and the related environment to enable its Members' NMHSs and associated institutions to act together as major contributors to sustainable development, environmental protection and to safety and well being of people in the Region and beyond.

1.7 Mr Henri Malcorps, Director-General of the Royal Meteorological Institute of Belgium and Permanent Representative of Belgium with WMO welcomed all delegates to Brussels. He emphasized that at this XV Session, the 50 Members of the Association should make every effort to explore ways to make significant progress in achieving the mission of the Organization in the Region VI. He stressed the particular importance of this session, which he considered a "turning point" in the history of the RA VI and WMO.

1.8 Mr Malcorps emphasized that the developments of the 20th century had been also influenced by elements not directly related to meteorology or technology. The desertification of the Sahel, the Amoco Cadiz and Tchernobyl had demonstrated the importance of the meteorological services in the field of climate and environment. At the same time, the commercial value of data

and services provided by the meteorological institution had become evident and this resulted in a discussion on the relationship between the public and private sector in hydrometeorology. He also stressed that the tasks of the national meteorological services had increased dramatically but due to the weak public finances most NMHSs were opting to commercialize some of their activities and, at the same time, to improve their effectiveness and efficiency.

1.9 Mr Malcorps concluded that, in order to attain its objectives, the Association needed strategic thinking, efficient management and good governance. He expressed his confidence that this session would make important progress in this regard and warmly congratulated the president of RA VI and the Secretary-General of WMO for their leadership.

1.10 Mr M. Jarraud, Secretary-General of WMO, in his opening statement, expressed his appreciation to the Kingdom of Belgium for hosting this session in Brussels and extended a warm welcome to representatives of WMO Members and to all participants. He expressed also his appreciation to Mr Henri Malcorps, Director-General of the Institut royal météorologique and Permanent Representative of Belgium with WMO, for the excellent arrangements made for this session. He recalled that when the First International Meteorological Conference was convened in Brussels by King Leopold I of Belgium in August 1853, it was organized by US Naval Lieutenant Matthew Fontaine Maury and chaired by Professor Adolphe Quételet of Belgium. In the years which followed the Conference, Professor Quételet was the scientific figure that most vigorously pushed for the establishment of the International Meteorological Organization (IMO). Born in Ghent in 1796, Professor Quételet obtained his PhD in mathematics from the University of Ghent in 1819 and shortly thereafter was elected to membership in the Académie royale des Sciences et Belles-lettres of Brussels. He wrote numerous essays in mathematics and physics, founded and edited a journal and became the first director of the Brussels Royal Observatory, a position which he held for the rest of his life. His lasting international fame is also due to his pioneering applications of statistics to the social sciences, public health and criminology. His numerous publications include the 2 volumes of "Sur le climat de la Belgique" (1845–1851). He died in Brussels in 1874 and today, both Maury and Quételet have lunar craters named in their honour.

1.11 The Secretary-General expressed his thanks to Mr Daniel Keuerleber-Burk, president of Regional Association VI, for his leadership and the successful implementation of the Association's programmatic activities during the intersessional period since the fourteenth session of RA VI, which was held in Heidelberg (Germany) in September 2005. He also conveyed his gratitude to Dr Andris Leitass, vice-president of RA VI, for his contributions during his tenure of office. He expressed WMO's appreciation to all the chairpersons, rapporteurs and working group members, for their key services.

1.12 The Secretary-General emphasized that this was the first session of the Regional Association based on the new strategic framework adopted by the Fifteenth World Meteorological Congress (Geneva, May 2007) and the agenda of the session was aligned to the Strategic Thrusts and Expected Results of the WMO Strategic Plan. He noted with appreciation that Regional Association VI developed and adopted an RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011), which had become a showcase and a model for the other WMO Regional Associations.

1.13 The Secretary-General recalled that a new WMO Secretariat structure was implemented in 2008 to better align it with the decision of the Congress, as well as to improve the integration of plans and programmes, optimize the use of resources and streamline management and decision-making. In particular, under Expected Result 9 – Enhanced capabilities of National Meteorological and Hydrological Services in developing countries, particularly least developed countries, to fulfil their mandates, the new Development and Regional Activities (DRA) Department was now responsible for implementing the activities of the Technical Cooperation Programme, including the Voluntary Cooperation Programme (VCP), the WMO Programme for the Least Developed Countries (LDCs), the Regional Programme and the Education and Training Programme (ETR), as well as resource mobilization. In this context and in line with the recommendation of the previous session of the Association, the former subregional office for Europe became the WMO Regional Office for Europe, to facilitate the coordination of RA VI

activities and to optimize WMO support to its Members. The new Office had already played a key coordinating role with European NMHSs, in particular by contributing to identify their development needs and by establishing even closer working relationships with the relevant UN System Agencies as well as with the regional and subregional organizations such as, in particular, ECMWF, EUMETSAT and EUMETNET, as well as the European Commission.

1.14 The Secretary-General seized this opportunity to share some views which the Association might wish to consider in its deliberations:

- He appreciated the intent to advance in the implementation of the Regional Strategic Plan, as evidenced by the topics of the Technical Conference held just prior to this session: “The Implementation of the RA VI Strategic Plan, Developing European NMHSs to Increase Benefit to Society”;

- He noted the intention to swiftly advance in WIS implementation and to assume a leading role in further WIGOS development. He recalled, in this regard, that at its sixty-first session the WMO Executive Council reaffirmed the important role of regional associations in WIS development as a crucial factor to ensure both a successful implementation and a shared ownership of the system;

- The Secretary-General was pleased to receive a communication from the president of RA VI reporting the approval of the RA VI Regional Climate Centres Implementation Plan. Accordingly, RA VI was now ready to start a pre operational production phase in this activity;

- The EC-LXI had also stressed the importance of operational cooperation between NMHSs and their respective national disaster risk management agencies in the development of end-to-end early warning system capabilities. It further emphasized the need for enhanced recognition of NMHSs’ potential contributions in disaster risk management by their governments, which should translate into additional resources to develop and sustain NMHSs' capacities. He was confident that the Association would wish to consider favourably the Council's recommendations in developing its future work programme;

- Partnerships had significantly increased over the last years, culminating in the establishment of some key joint projects such as the Regional Programme on Disaster Risk Reduction for South East Europe, which had been supported by the European Commission’s Directorate General for Enlargement. A number of additional projects were also being considered with the Commission and WMO could acknowledge, with appreciation, the excellent cooperation achieved with regional organizations like ECMWF, EUMETSAT and EUMETNET, as well as with global financial institutions such as the World Bank. Capitalizing on these partnerships, the Association might wish to consider initiatives to attain a more uniform level of NMHS development throughout the Region;

- As usual, the session was expected to establish an appropriate work structure for the Association, including management and working groups and task teams, to ensure that all regional priority tasks were subsequently pursued efficiently during the intersessional period and that outputs of appropriate quality were indeed delivered in a timely manner, thereby contributing towards the achievement of the expected results and high-level objectives of the Organization. This would require a strong commitment by the Region to provide the necessary resources and expertise. The Secretary-General urges the session to keep in mind the importance of ensuring the fullest participation of scientists from both the developing and the developed countries;

- Lastly, the Secretary-General recalled that the EC-LX and EC-LXI sessions had endorsed the guiding principles of the draft WMO Strategic Plan for the period 2012–2015 and its scheduled delivery by April 2010. In addition, the Council recognized the

need to further link the WMO Strategic Plan with Regional and Members' Strategic Plans and further urged the regional associations to ensure their active and timely engagement in the relevant preparatory process.

1.15 Mr Jarraud referred to the present global financial crisis that had been a very critical constraint for many Members. However, he stressed that, by the time the crisis was over, a number of key issues like climate change, natural disaster prevention, food security, water management, among others, would still be present and even accentuated. These issues would continue to be a threat. He emphasized that we cannot wait for the financial crisis to conclude before reaffirming the need to continue supporting NMHSs as investments in development and the protection of lives and property.

1.16 Only two weeks before the session, WMO convened in Geneva with partners, the World Climate Conference Three, to provide decision-makers with the most appropriate scientific tools and information to face these challenges. WCC-3 high-level participation reached unprecedented levels when compared to the previous two World Climate Conferences and the Secretary-General was confident that the resulting Global Framework for Climate Services would make a key contribution to the UN Climate Change Conference in Copenhagen in December 2009. Therefore, Mr Jarraud wished to express his and WMO's appreciation for the generous support of several RA VI Members which contributed to make the WCC-3 a concrete reality. At the same time, he also wished to thank RA VI Members which over the intersessional period had continued to support WMO's Technical Cooperation Programme (TCO) and to urge them to continue so doing.

1.17 The Secretary-General was confident that, in reviewing its upcoming activities and stating its priorities for the next four years, the Association would make a significant contribution to a better participation of the NMHSs in the socio-economical development of the respective Member countries. The outcomes of Technical Conference would provide useful input in this regard and so he looked forward to the recommendations and conclusions of this key session.

1.18 Mr Jarraud wished all the participants a very successful and productive session and success in the future activities of the Association.

1.19 Mr Kris Vanderhauwaert, representing the Minister of Science Policy of Belgium, welcomed all participants to Brussels. He recalled that one of the very first milestones in the international cooperation between meteorologists was achieved in Brussels, where in 1853 the first marine meteorology conference, which brought together about ten countries, established the principle that was still at the heart of WMO today: the exchange of observation data among member countries. While in those days not many countries had at their disposal the basic elements of a meteorological service worthy of the name, there was already the desire to share information among everyone, for everyone's benefit. Today, the principles of information-sharing was part of the everyday practice, and meteorologists and hydrologists had been doing a better and better use of this by focusing on the prevention of meteorological hazards as well as on climate monitoring.

1.20 He emphasized that WMO, like the United Nations, was a complex organization. The subdivision into six Regional Associations without a doubt allowed for greater flexibility in its operations. The Regional Association VI, Europe, had been extended to include 50 Members which brought together meteorological services from the Atlantic to Ural Mountains and from the Arctic Circle to the Middle East. In their everyday operations, the Members of the Association represented a broad spectrum of different cultures and practices, yet there was a common goal to share: to contribute to greater security for all through sharing of new data and recent progress in scientific knowledge. It was this spirit that would enable the session over the next few days in Brussels, the capital of Europe, to tackle effectively the different topics planned on the scale of Region VI, joint together by a single motto to which Belgium fully subscribed: "Working together for security, development and the environment".

2. ORGANIZATION OF THE SESSION *(agenda item 2)*

2.1 CONSIDERATION OF THE REPORT ON CREDENTIALS *(agenda item 2.1)*

2.1.1 The representative of the Secretary-General presented reports on credentials taking into account the documents received prior to and during the session. The Association accepted the report and decided that it would not be necessary to establish a Credentials Committee.

2.1.2 The session was attended by 108 participants from 42 Members of Regional Association VI (Europe), 3 observers from 1 Member from outside the Region, 9 observers from 5 international organizations, and 3 other participants. The list of participants is given in the Appendix to the present report.

2.2 ADOPTION OF THE AGENDA *(agenda item 2.2)*

The provisional agenda for the session was unanimously adopted, as contained in XV-RA VI/Doc. 2.2.

2.3 ESTABLISHMENT OF COMMITTEES *(agenda item 2.3)*

2.3.1 It was agreed that the work of the session be carried out in plenary sessions to deal with the various agenda items as follows:

(a) General Plenary chaired by Mr Daniel K. Keuerleber-Burk (Switzerland), president of the Association, assisted by Mr Dimitar Ivanov, Chief of WMO Regional Office for Europe;

(b) Plenary A chaired by Mr Ivan Čačić (Croatia) assisted by Mr Robert O. Masters, Director of the WMO Development and Regional Activities Department and Mrs Natalia Berghi, Programme Officer, WMO Regional Office for Europe;

(c) Plenary B chaired by Mr Mieczyslaw Ostojski (Poland) assisted by Mr Geoff Love, Director of the WMO Department of Weather Disaster Risk Reduction and Services and Mrs Natalia Berghi, Programme Officer, WMO Regional Office for Europe.

2.3.2 The following committees were established for the duration of the session:

Nomination Committee

2.3.3 A Nomination Committee was established consisting of the principal delegates of Armenia, Finland, Israel and Italy. The principal delegate of Finland, Mr Petteri Taalas was requested to serve as convenor.

Coordination Committee

2.3.4 As stipulated by General Regulation 28, a Coordination Committee was established, comprising of the president and the vice-president of the Association, the representative of the Secretary-General, the Chairpersons and the secretaries of the General Plenary, Plenary A and Plenary B.

Task Team on the Work Structure of RA VI

2.3.5 A Task Team on the new work structure of RA VI was established comprising of the principle delegates of Czech Republic, Finland, France, Germany, the Russian Federation, Spain, Turkey, and the United Kingdom of Great Britain and Northern Ireland. The principal delegate of Germany, Mr Wolfgang Kusch, was requested to be the convenor of the Task Team.

2.4 OTHER ORGANIZATIONAL MATTERS *(agenda item 2.4)*

2.4.1 The Association established its working hours for the duration of the session.

2.4.2 The Association agreed that no minutes of the plenary meeting at sessions should be prepared unless otherwise decided for special items.

2.4.3 The Association designated Mr M. Dacic (Serbia) as rapporteur on Agenda Item 9 – Review of previous Resolutions and Recommendations of the Association and of relevant Executive Council Resolutions.

2.4.4 The Association agreed to waive Regulation 109 during the duration of the session.

3. REPORT BY THE PRESIDENT OF THE ASSOCIATION *(agenda item 3)*

3.1 The Association noted with appreciation the report of the president of RA VI which provided an overall review and assessment of the major activities of the Association since its fourteenth session and expressed satisfaction of the effective manner in which the activities of the Association were being undertaken. The president also highlighted the issues that the Association would have to address, such as the implementation of the RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011), and the related Action Plan; the future working mechanism of the Association; and other priority activities, including the formal establishment of the Regional Climate Centre (RCC) network in Europe.

3.2 The Association commended its president, Mr D. Keuerleber-Burk (Switzerland), for the dedication, enthusiasm and initiative with which he had conducted the affairs of the Association, thus contributing to the further development of weather, climate and water services in the Region. The Association also commended the vice-president, Mr A. Leitass (Latvia), for his valuable contribution to the work of the Association. It also expressed its appreciation to the chairpersons and members of the working groups and rapporteurs, who had effectively collaborated in carrying out the activities of the Association.

3.3 The Association extended its appreciation to Members who hosted various regional events during the intersessional period and encouraged them to continue to provide the necessary support to the activities of the Association.

3.4 The Association commended the Management Group and its Task Team on the RA VI Strategic Plan and Action Plan for the development of the RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011), which was approved by the president in January 2008. The Regional Strategic Plan, which is based on the WMO Strategic Plan approved by the Fifteenth Congress (2007), focuses on specific needs and requirements within RA VI and the subsequent tasks and results to be pursued by the RA VI Members to contribute to the WMO top priorities in the most efficient way. The Association noted further that the development of the Regional Strategic Plan was a concerted effort of all Members who provided valuable contributions during the consultation process.

3.5 The Association noted that Resolution 11 (EC-LX) of the WMO Executive Council urged the regional associations to prepare, in addition to the Regional Strategic Plans, related Operating Plans, that would feed to the WMO Strategic Plan. To that end, the RA VI Strategic Plan includes as Annex C an Action Plan intended to facilitate the implementation. The Association requested the Management Group to develop further the Action Plan with clearly identified work packages and deliverables, as well as, with reference to the necessary human and financial resources.

3.6 The Association recognized the implementation of the RA VI Strategic Plan as a highest priority task for the coming intersessional period and emphasized that all RA VI Members should work closely together towards achieving the established expected results. To support the implementation, the Members were encouraged to develop their national Action Plans in line with

the regional Strategic Plan. The Association agreed that the strategic planning process should continue during the intersessional period in view of the need to align the regional Strategic Plan with the new WMO Strategic Plan (2012–2015) to be adopted by the Sixteenth WMO Congress in 2011.

3.7 The Association gave full support to the priority issues outlined by the president. It agreed that the systems for observing, recording and reporting of the weather, water resources, ocean, climate and related natural environment should be the subject of continuing improvement and optimization with the aim to increase its efficiency and effectiveness. The Association therefore should rapidly advance the implementation of the WMO Information System (WIS). Also, RA VI should take a leading role in the further development of the WMO Integrated Global Observing System (WIGOS) and thereby support the WIGOS Pilot projects and, if appropriate, develop a WIGOS Demonstration Programme for the Region. The Association should become a major contributor to the Global Framework of Climate Services (GFCS). The GFCS should build on the experiences gained from the pre-operational production phase of the RA VI Regional Climate Centres (RCC). In this regard, the Association felt high priority should be given to the implementation of the RA VI RCC Network.

3.8 The Association appreciated the progress made by the NMHSs in the Region with regard to better understanding the needs of governmental bodies, economic sectors, media and the general public. To advance further this understanding, the Members should foster new processes and sustain a fruitful dialogue between the weather, water and climate information providers and the users' community. In this regard, the Association should foster studies to demonstrate the socio-economic benefits of meteorological, hydrological and related services to the public, decision-makers and specialized users.

3.9 The Association should intensify its efforts to work more closely together in order to bridge gaps and achieve a better equilibrium of the level of NMHSs throughout the Region. The Association should foster further integration into a European Meteorological Infrastructure, which would bring benefits to all Members. The Members should exploit further the opportunities for providing a broader range of subregional and regional services, e.g. expansion of the European-wide warning system, increase the number of cross-boundary coordinated flood warning systems, etc.

3.10 The Association should analyze how it could serve best the policies of the main stakeholders outside the WMO, e.g., the European Commission or World Bank. The cooperation with other UN bodies, such as UNDP, UN ISDR, ICAO, etc., should continue be of high importance in addressing crosscutting areas. Working together more effectively with actors outside the WMO shall remain a key strategic thrust of the RA VI.

3.11 In order to meet the increasing demand for more comprehensive services capacity-building efforts should be strengthened. The Region should capitalize on the already existing WMO Training Centres and on the training opportunities provided by the ECMWF, EUMETSAT and other partners. In addition, the Association should foster the use of electronic training facilities, e.g. EUMETCAL.

3.12 In order to meet the coming challenges related to the implementation of the Regional Strategic Plan, the Association should establish an adequate work structure consisting of the optimum number of subsidiary bodies focused on key activities and related expected results. The work programmes of these bodies should contain specific deliverables with assigned target dates. The work structure should be flexible to address emerging issues.

3.13 The Regional Office for Europe should continue playing an important role in the overall work of the Association. The coordination functions of the Office, as the interface between the Members and the WMO Secretariat, should be enhanced and a better use of the available IT opportunities should be explored and utilized.

4. PROGRAMME ACTIVITIES – REGIONAL ASPECTS *(agenda item 4)*

4.1 ENHANCED CAPABILITIES OF MEMBERS TO PRODUCE BETTER WEATHER FORECASTS AND WARNINGS *(agenda item 4.1)*

Global Data-Processing and Forecasting System (GDPFS)

4.1.1 The Association noted that the Severe Weather Forecasting Demonstration Project (SWFDP) had achieved significant results and benefits for developing countries, underpinned by the GDPFS, and delivered improved warning services through the Public Weather Service (PWS), as shown for example in one project in southern Africa and also anticipated through another project for the South Pacific Islands (RA V), and requested the relevant RA VI working group to consider developing a SWFDP regional project as a method for enhancing the GDPFS and PWS and further contributing to disaster risk reduction goals in affected countries.

4.1.2 The Association noted that NMHSs participating in the SWFDP regional projects have expressed their appreciation to the Met Office (United Kingdom) and ECMWF, as well as to NCEP (United States of America), for providing suitable NWP and EPS products for the regional demonstration projects, and supported through forecaster training, as part of a significant contribution to building capacity in severe weather forecasting and warning services in these countries. The Association encouraged its Members to continue to assist in the SWFDP implementations and other capacity-building projects in a coordinated way, and to further explore ways to facilitate the effective use of NWP/EPS products and the transfer of post-processing techniques for improving weather forecasting and services in developing countries.

4.1.3 The Association requested Members to provide status information on their respective NWP forecasting systems to the annual report of the "WMO Technical Progress Report on GDPFS including NWP Research"; the Secretariat is presently awaiting receipt of submissions for the year 2008. Members are encouraged to also include information on areas of specialized NWP applications, such as for sea-state, air quality, and other environmental predictions.

4.1.4 The Association encouraged centres providing regional products to make those available at sufficiently high resolution so as to be of benefit to small countries. The Association also noted that some regional products exchanged within the Region did not extend sufficiently far eastwards to encompass those parts of the Region that lie in Central Asia, the Middle East and at times the Balkans, and encouraged Members developing regional products to make them usable for all countries in the Region.

GDPFS – Long-Range Forecasts

4.1.5 The Association noted the significant progress made by Global Producing Centres (GPC) of Long-Range Forecasts, including in RA VI, GPCs Exeter, Moscow, Toulouse, and ECMWF, designated as part of the GDPFS, and requested these centres to collaborate with regional and national climate information and prediction centres to meet their needs. The Association encouraged all GPCs to contribute to the Multi-Model Ensembles (MME) efforts at the Lead Centre for Multi-Model Ensembles, jointly operated by GPC Washington and GPC Seoul, which in turn makes available standard MME products to all WMO Members. The Association further noted with appreciation the progress of the Eurosip multi-model ensemble forecast system, which combines output from Global Producing Centres Exeter, Toulouse and the ECMWF.

4.1.6 The Association urged its Members to continue to contribute to the joint CBS-CCl efforts, in order to ensure successful implementation and operation of Regional Climate Centres (RCCs) and to foster improved coordination of all relevant aspects of climate information and prediction services (monthly, seasonal and longer-term). The Association urged all GPCs to continue and reinforce their inputs to RCCs and Regional Climate Outlook Forums (RCOFs) (including data products and predictions, as well as guidance on their effective use), and to provide verification information and advice.

Aeronautical Meteorology – aviation forecasting

4.1.7 The Association, noting the concern expressed by EC-LXI about ICAO studies on the feasibility of regionalized SIGMET issuance, requested the Secretary-General to keep the Region informed of the planned feasibility study. The Association concurred with EC-LXI that improved coordination and exchange of data relevant to aviation warnings, such as weather radar data, lightning detection and special air reports, would be a pre-requisite for the development of regionally harmonized, seamless warnings as required by ICAO and the aviation industry.

4.1.8 Concerning the special situation in the Single European Sky area, the Association concurred with the Council recommendation that the NMHSs and other aviation meteorological service providers involved, whatever their organizational affiliation and structure, should develop and implement a joint solution for the SIGMET coordination, taking due account of the development of relevant SES Functional Airspace Blocks.

4.1.9 The Association welcomed the development of new concepts for new products and information specifically for air traffic management currently undertaken by the Expert Team on New Terminal Forecasts of the Commission for Aeronautical Meteorology. It further noted the efforts in the Expert Team of Operational Data Representation, which was established together with the Commission for Basic Systems, to develop an interface between the WMO internal BUFR code and the emerging forms of data representation in the world of Aeronautical Information Management, which includes meteorological information, which are based on web-based formats such as XML and GML. The Association noted that the new net-centric, system-wide information management envisaged for the Single European Sky will:

- De-emphasize traditional forecast and warning products;
- Have far-reaching consequences for areas ranging from data exchange to training and qualification issues;
- Offer to Members a unique opportunity to deliver new value-added services in support of the concepts of the European ATM master plan.

Members are therefore encouraged to develop their offer of value-added products supporting SESAR and the European ATM strategy.

Marine Meteorological Forecasting

4.1.10 The Association noted that the third session of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM-III) is scheduled to take place in Marrakech, Morocco, from 4 to 11 November 2009, and encouraged all RA VI Members to attend.

4.1.11 The Association recognized that probabilistic forecasts of ocean wave height exceeding specific thresholds provide early guidance of extreme events, and the combined use of deterministic and probabilistic wave forecast guidance would help the NMHSs in their risk assessment at an early stage in forecasting and improving marine-related decision-making processes. The Association expressed its appreciation to the advanced centres in the Region (for example, Météo-France, Norwegian Meteorological Institute, Portuguese Meteorological Institute, USAM/CNMCA (Italy), and the ECMWF (password protected for WMO Members), etc.), for making freely available on their Websites a broad range of global and regional wave products and datasets. The Association urged the advanced centres concerned in the Region to consider providing technical expertise in support of the development of regional and subregional projects for building capacity of WMO Members, including LDCs and SIDSs, in the implementation and use of such products for marine forecasting.

4.1.12 The Association recognized the importance of symposia and workshops that coordinate ocean wave and storm surge activities globally, including exchange of information on databases, methodologies and techniques, sharing expertise and providing technical advice to assist NMHSs

in fulfilling their services' duties in support of the requirements of users in the whole range of maritime activities and in the Disaster Risk Reduction. In this context, the Association was informed that the 11th International Workshop on Wave Hindcasting and Forecasting and 2nd Coastal Hazard Symposium would be held in Halifax, Canada, from 18 to 23 October 2009, in which participants would receive information on new technologies and research results on wave and storm surge modelling and forecasting, including its combined effect leading to coastal inundation. The Association therefore encouraged its Members to participate in this event, and requested the Secretary-General to keep Members informed of these developments.

4.1.13 The Association recalled the expansion of the wave forecast verification scheme to include validation against remotely sensed data, including wave spectra and surface vector wind. It noted with appreciation that JCOMM had established collaborating arrangements with ESA in support of this scheme through the GlobWave project. The Association encouraged its Members to disseminate the data and make maximum use of the verification scheme applications for marine forecasting purposes.

Research and Development: transition from Research to Operations and Next Generation Systems

Nowcasting and Forecast Systems

4.1.14 The Association noted the request of EC-XLI for broad WMO involvement in addressing issues associated with the changing forecasting environment in NMHSs, including a growing tendency for: forecasting systems to also run locally on workstations and local networks, demanding new user requirements; an increased reliance on visualization; and an evolving role of human forecasters in parallel with increasing automation. The Association requested regional involvement in the CBS and CAS-WWRP efforts in planning, implementation, and providing input to a workshop, which should have a strong participation by NMHSs of developing countries, beginning with a small focused meeting in 2010.

4.1.15 The Association noted the request of EC-XLI to build on the success of the European Operational Programme for the Exchange of Weather Radar Data Information (OPERA), to provide a basis for WMO standards for the exchange of radar data and to enable their use in prediction systems in other Regions. The Association requested regional involvement in the exploration by the Working Group on Nowcasting of the WWRP, CBS and CIMO on how the OPERA technological concept could be adapted to other regions.

Prediction of flash floods in Alpine terrain

4.1.16 The Association appreciated the efforts on Members in the successful MAP D-PHASE Project, including the seamless use of nowcasting, high-resolution research models and operational forecast models in both deterministic and ensemble modes. The Association noted the novel efforts on multi-scale verification, on a web portal for users and in the driving of hydrological ensemble models by radar precipitation estimates and numerical weather prediction systems. The Association requested that future WMO flooding projects in the Region consider adapting these approaches developed in the MAP D-PHASE.

Seamless prediction for climate, weather, water and the environment

4.1.17 The Association welcomed the over-arching strategy developed by CAS through WWRP (including THORPEX), in collaboration with WCRP, to enable the WMO to make progress in implementing seamless weather and climate predictions. It encouraged Members, in accordance with the report of the EC Task Team on research aspects of an enhanced climate, weather, water and environmental prediction framework (EC-RTT), to strengthen the cooperation between the weather, climate, water and air quality communities to accelerate the development of environmental predictions, and to facilitate technological transfer between research and service delivery.

Overall development of the THORPEX programme

4.1.18 The Association thanked the many scientists who had contributed, and continued to contribute, their expertise to the ongoing success of the THORPEX programme within the World Weather Research Programme. The Association was particularly pleased with Members involvement from the Region in: (i) the development of the THORPEX Interactive Grand Global Ensemble (TIGGE), which was now providing valuable data for research on ensemble prediction; (ii) the success with the IPY-THORPEX project cluster; and (iii) the completion of the field phases for T-PARC. The Association urged the continued involvement of operational and research scientists from the Region in new and ongoing THORPEX efforts such as:

(a) The establishment of the Year of Tropical Convection (YOTC project);

(b) Preparations, in autumn 2010 or 2011, for an international field experiment (the THORPEX North Atlantic Waveguide and Downstream impact Experiment – T NAWDEX, to be held in 2012 at the same time as HYMEX) to study disturbances on the North Atlantic waveguide and their downstream impacts over Europe;

(c) The continuation of TIGGE research and new efforts such as Forecast Demonstration Projects exploring the concept of a Global Interactive Forecast System (GIFS) and TIGGE-LAM (a limited area modelling version of TIGGE).

4.1.19 The Association noted that the leadership role of France, Germany, Norway and the United Kingdom in THORPEX, through their continuing financial contributions to the THORPEX Trust Fund. In this regard, the Association urged more Members to commit support to the THORPEX Trust Fund and all Members to consider providing a more effective international structure for European THORPEX activities that includes the establishment of effective links to major regional efforts related to numerical weather prediction.

A Global Interactive Forecast System

4.1.20 The Association recognized the progress of CAS' WWRP-THORPEX programme to deliver the THORPEX Interactive Grand Global Ensemble (TIGGE) archive, to conduct research that identifies areas where forecast skill and confidence might be improved by the multi-model ensemble approach, and to demonstrate the concept of a multi-centre Global Interactive Forecast System (GIFS) by delivering tropical cyclone track predictions in real-time. The Association further noted the past encouragement of TIGGE activities by EC-LXI (2009), including demonstrations of the potential value of a GIFS in operational forecasting, aimed at reducing human suffering, mitigate costs and deliver benefits, and thus recommended:

(a) Regional, CBS-, and CAS-related entities in the WMO collaborate with the THORPEX GIFS-TIGGE Working Group to plan and execute a GIFS Forecast Demonstration Project (GIFS-FDP) that is designed to benefit Members in the developing world;

(b) To take advantage of existing and planned activities, infrastructure and experience, wherever possible, GIFS-FDP subprojects will be carried out in conjunction with CBS SWFDP, which has an effective mechanism for cascading the benefit of new forecast systems to decision-makers in WMO Member States;

(c) The GIFS-FDP should begin with the prediction of tropical cyclone tracks and ensemble-based diagnostics, since EC-LXI urged continuation of this real-time programme. The Council encouraged the participation of the relevant TIGGE data providers, TIGGE archive centres, Tropical Cyclone Warning Centres (TCWCs), Regional Specialized Meteorological Centres (RSMCs, including RSMCs with activity specialization in Tropical Cyclones) and WMO Members in executing such GIFS-FDP activities, which will require training and the development of a common set of products;

(d) That a follow-on from the GIFS-FDP should focus on improving prediction of heavy rainfall and other problems of high priority, such as contributing to improving food

security. The Council requested support from the WWRP SERA Working Group and THORPEX Regional Committees in exploring various societal application areas;

(e) The WMO Secretariat, THORPEX and the TIGGE data providers should work to develop a suitable data policy that will allow the GIFS-FDP to proceed, in order to reduce human suffering, mitigate costs and deliver benefits;

(f) For the longer term, CBS and CAS experts should work with the THORPEX community to develop a way forward with the GIFS vision, including additional applications with prototype GIFS probabilistic products for high impact precipitation, wind speed, and near surface temperature forecasts that, if successful, could be transitioned into operations to benefit the international community, especially for the developing world.

Interaction between Tropical Cyclone Operational Forecasters and Researchers

4.1.21 Noting that the research workshops and projects organized by TCP and WWRP provide excellent opportunities to bring the research community together with operational forecasters to improve the prediction of tropical cyclones, the Associated urged experts on tropical cyclone modeling within the Region to participate in the Seventh International Workshop on Tropical Cyclones (IWTC) (La Réunion, November 2010) and the Second International Workshop on Tropical Cyclone Landfall Processes (Shanghai, China, October 2009). The Association also encouraged WWRP, including THORPEX and the Tropical Cyclone Panel, and the SWFDP to work collaboratively with RSMCs specializing in tropical cyclone forecasting, and Tropical Cyclone Warning Centres, in developing prototypes for tropical cyclones related to ensemble-based probabilistic products in the context of a Forecast Demonstration Project for the Global Interactive Forecast System (GIFS-FDP). Such GIFS-FDP should involve centres in the Region who currently participate in TIGGE.

Tropical convection

4.1.22 The Year Of Tropical Convection (YOTC) initiative, supported by both WWRP/THORPEX and WCRP, was expected to play an important role in a comprehensive analysis and modelling approach to tropical convection that affects weather and climate on a variety of spatial and temporal scales and phenomena. The Association noted the progress of the YOTC Project in completing their Science Plan, arranging access to high resolution forecast products at the ECMWF, and in moving forward with the development of an Implementation Plan for this project, which was the main subject of the YOTC Implementation Workshop held at the East-West Centre on the campus of the University of Hawaii at Manoa, Oahu, 13–15 July 2009. The Association urged the continued involvement of Members from the Region in YOTC, including expanding the use of high resolution cloud modelling in the research community and the use of satellite data.

4.1.23 The Association thanked Members of the Region, especially Germany, United Kingdom and France, for their participation in both the Summer and Winter phases of T-PARC, and encouraged Members to adopt operational and societal legacies from the summer and winter components of campaign, to improve prediction of the critical processes associated with tropical cyclones, extratropical cyclones, as well as high impact weather over the Arctic, through adaptive measurements and the utilization of advanced satellite techniques.

The IPY-THORPEX project cluster

4.1.24 The Association gratefully acknowledged the participation of Members of the Region in the IPY-THORPEX cluster, and encouraged a THORPEX Polar project as a legacy of the IPY to continue a focus on improved understanding and prediction of high impact weather over polar regions, the impact of polar process on the global circulation, and advances in data assimilation over polar regions.

4.2 ENHANCED CAPABILITIES OF MEMBERS TO PROVIDE BETTER CLIMATE PREDICTIONS AND ASSESSMENTS *(agenda item 4.2)*

The Association recognized the need to systematically assess the basic capability of NMSs in the Region for making observations to monitor climate change and climate variability and for providing long-range forecasts and future projections. The Association agreed that the needs of Members who have not fully developed these capabilities will have to be addressed as an important part of WMO's activities relevant to Expected Result 2 in the Region. The Association noted that, while the WMO's climate activities are mainly presented with respect to Expected Result 2, some additional aspects are also covered under the Expected Results 4, 5, 6, 7, 8 and 9.

4.2.1 Coordination and Guidance for ER2

4.2.1.1 Noting that climate activities that fall under ER2 are guided by a number of WMO and co-sponsored constituent bodies, the Association urged enhanced interaction and coordination between these bodies, including those at regional and national levels.

4.2.1.2 The Association appreciated the report of the Chairperson of the RA VI Working Group on Climate-related Matters, and the significant accomplishments of this working group including, in particular, development of an Implementation Plan for the RA VI Regional Climate Centre (RCC)-Network; enhancement of the RA VI capability for climate monitoring; redesign of the baseline synoptic and climatological networks; elaboration of the Region's Strategic Plan; various capacity-building activities including training events; data rescue efforts and significant support to the development of the first session of Southeast Europe Climate Outlook Forum (SEECOF-1). The Association agreed that the existing regional mechanisms guiding climate- and hydrology-related matters in the Region would be consolidated into a new RA VI Working Group on Climate and Hydrology.

4.2.1.3 The Association is pleased to note that the fifteenth session of CCl is scheduled to take place in the Region at Antalya, Turkey, during 19–24 February 2010, and that prior to the session a Technical Conference on "Changing Climate and Demands for Climate Services for Sustainable Development" is being organized during 16–18 February 2010. The Association further noted with appreciation that a joint session of WCRP JSC and CCl is being organized on this occasion. The Association welcomed the conference announcement, and urged Members having capacity to co-sponsor and support the conference to ensure more broad-based participation. The Association appreciated the efforts of the Turkish State Meteorological Service (TSMS) in hosting these important events.

4.2.2 Climate Monitoring and Assessment

4.2.2.1 The Association stressed the important role of the CCl Expert Team on the Rescue, Preservation and Digitization of Climate Records (ET-RPDCR) in advising Members on the status of Data Rescue in various regions and recommending strategies and projects for improving historical climate data rescue, availability and accessibility. It noted with appreciation the increased support of Members in the Region to the work of ET-RPDCR by providing high level experts and urged Members to continue their technical support to the ET in the next CCl intersessional period.

4.2.2.2 The Association noted the significant results that had been achieved in climate monitoring in the Region: two activities initiated by EUMETNET's European Climate Support Network (ECSN), the European Climate Assessment and Dataset (led by The Netherlands) and Generate Climate Monitoring Products (led by Germany) form important climate monitoring-related service components of the RA VI RCC pilot network. Supported by a questionnaire amongst Members on RA VI Operational Climate Monitoring Requirements (carried out by the RA VI Working Group on Climate-related Matters), important steps towards a consistent RA VI-wide climate monitoring capabilities were reached, e.g., consolidation of WebPortals, RA VI-wide analyses of GCOS Essential Variables including extremes indices, a prototype of a RA VI-wide climate diagnostics bulletin, etc.

4.2.2.3 The Association recognized the contribution of the Deutscher Wetterdienst (DWD) in publishing the Annual Bulletin on the Climate in WMO Region VI – Europe and Middle East. It appreciated especially the nearly complete participation of RA VI Members as well as DWD's efforts to improve the informative value and encouraged Members to continue their support to this important publication. Furthermore, the Association noted with satisfaction, that DWD jointly with the UK Met Office and other Members, provide comprehensive input to the annual 'State of the climate' publication in the Bulletin of the American Meteorological Society (BAMS) which is re-edited and published by WMO.

4.2.2.4 The Association noted with satisfaction that the WMO Statements on the Status of the Global Climate for 2006 and 2007 were produced with expert support from the Region. It appreciated the prominent role played by the Hadley Centre of the Met Office and the Climate Research Unit of the University of East Anglia in the United Kingdom, and the Global Precipitation Climatology Centre (GPCC) in Germany for contributing high quality data sets and climate information and products as inputs to the preparation of the WMO statements. Furthermore, the Association welcomed the initiative of the NMHS of Germany, in consultation with the NMHSs of Austria and Switzerland, to make available a German version of the WMO Statement. The Association also appreciated the ongoing efforts of Hungary to reproduce these Statements in Hungarian. The Association encouraged Members to undertake similar initiatives to produce the Statements in other non-official languages to reach a wider audience. The Association stressed once again the importance of timely provision and dissemination of CLIMAT reports to further improve the quality and accuracy of climate monitoring and assessment products.

4.2.2.5 The Association appreciated the efforts of the Joint CCI/WCRP-CLIVAR/JCOMM Expert Team of Climate Detection and Indices (ETCCDI) to promote cooperative development of indices on extremes and welcomed the plan to develop guidelines on "Extremes in a changing climate". It urged Members to promote the use of ETCCDI software and knowledge by NMHSs, Universities and Research Centres and continue their technical and scientific support to the ETCCDI work and projects.

4.2.2.6 The Association noted with appreciation that at the 67th EUMETSAT Council meeting the "Resolution on EUMETSAT activities in support to climate monitoring" was approved. The resolution reinforces the commitment of EUMETSAT's Central Facility (CF) and the network of satellite application facilities (SAF Network) to support climate monitoring.

4.2.2.7 The Association also noted that the outcome of GCOS Regional Workshop for Eastern and Central Europe held in April 2005 on improving observing systems for climate. The Regional Action Plan, published in December 2005, is still pending for implementation. It further supported SBSTA 23 conclusion and urged those Members that have not already done so, to designate GCOS national coordinators and GCOS national focal points.

4.2.3 Climate Prediction and Modelling Research

4.2.3.1 The Association expressed satisfaction with the continuing progress of WCRP in international coordination and integration of climate research, and in particular its key contributions to IPCC AR4 and WMO/UNEP 2006 Ozone Assessment; search for sources of predictability on seasonal and decadal time scales, and development of coupled climate system models. The Association welcomed the outcomes of the World Modelling Summit for Climate Prediction (Reading, United Kingdom, May 2008), the 2nd Lund Regional-scale Climate Modelling Workshop, Sweden in May 2009, the WCRP Seasonal Prediction Workshop (Barcelona, Spain, June 2007), and the Workshop on Evaluating and Improving Regional Climate Projections (Toulouse, France, February 2009). It requested WCRP to ensure full and active participation of scientists from RA VI in the emerging Coordinated Regional climate Downscaling Experiment (CORDEX).

4.2.3.2 The Association noted with satisfaction the progress in monitoring and predicting the Atlantic Meridional Overturning Circulation variability through the multinational projects RAPID and THOR coordinated by the WCRP Climate Variability and Prediction Study in the Atlantic Sector.

4.2.3.3 The Association acknowledged with appreciation the important support that two of its Members, Norway and the United Kingdom, provide to the activities of the WCRP through hosting the International Project Offices of the WCRP CliC, CLIVAR, and SOLAS projects. It agreed that the support for the International CLIVAR Project Office after 2010 is very important for the successful development of the seasonal and decadal activities in the Region and continuation of efficient coordination of international climate research.

4.2.3.4 The Association recognized the many contributions of WCRP Global Energy and Water Cycle Experiment (GEWEX), especially the associated regional experiments like BALTEX (Baltic Sea Basin) and HyMeX (Mediterranean). The Association urged Members to continue their support for the collection, processing and analysis of the precipitation, cloud and radiation data from satellite and in situ measurements.

4.2.3.5 The Association welcomed the launching of the WCRP Climate-System Historical Forecast Project (CHFP) as outcome of the Seasonal Prediction Workshop held in Barcelona. Members are encouraged to support this multi-model, multi-institutional experimental framework for the assessment of the state-of-the-science seasonal forecast systems.

4.2.3.6 The Association took note of the European Union project named EC-Earth on climate and forecasting applications, with seamless prediction objective, among others, where ten NMSs along with a number of Universities are participating.

4.2.4 Climate Information and Prediction Services

4.2.4.1 Recognizing the need for transition of the results from climate research to the operational practices of regional and national centres, the Association urged the Secretary-General, CCl and the WCRP JSC to facilitate the development and operational implementation by Members of new or improved climate prediction techniques, and to provide technical guidance to NMHSs through closer coordination of their activities at the regional and national levels.

4.2.4.2 The Association noted with deep appreciation that the Regional Climate Outlook Forum (RCOF) process has been initiated in the Region, with the organization of SEECOF-1 in Zagreb, Croatia, from 11 to 12 June 2008. The Association thanked the World Bank for its sponsorship of the event and the NMHSs of Croatia, Switzerland, Germany and Slovenia for their co-sponsorship and technical/logistic support. The Association agreed that the RA VI RCOF efforts need to be sustained in the longer term as required, and urged the Drought Management Centre for South-eastern Europe (DMCSEE), South-east European Virtual Climate Change Centre (SEEVCCC) and Members in the subregion to further support the SEECOF process.

4.2.4.3 Noting with appreciation the WMO WCRP IPY Workshop on CLIPS in Polar Regions (St. Petersburg, Russian Federation, 8–11 September 2008), and the agreement to work towards the establishment of a Polar Climate Outlook Forum (PCOF), the Association urged all Members with interests in the Polar Regions to actively contribute to the relevant efforts to identify the priority user requirements for climate information in these regions.

4.2.4.4 The Association expressed appreciation to Members contributing to developing consensus-based updates of El Niño and La Niña issued by WMO. In addition, the Association urged expansion of this process by the CCl and WCRP CLIVAR to include development of updates on other major oscillations that affect climate of the Region.

4.2.4.5 The Association urged all Members in the Region to optimally utilize the products of the network of Global Producing Centres for Long-range Forecasts (GPCs) and the associated Lead Centres, and urged CCl and CBS to promote and guide the uptake of GPC products within RCC, RCOF and NMHS activities for operational climate prediction.

4.2.4.6 The Association welcomed the information provided by the United Kingdom on the recent UK Climate Projections 2009 (UKCP09) which are a series of probabilistic projections for meteorological variables for 25km regions over the United Kingdom for a range of emissions

scenarios up to 2080. The Association noted that UKCP09 outputs were an example of state-of-the-art regional climate projections and that the methodology used could be applied to any region of the globe in conjunction with local knowledge of climate and climate change. The Association appreciated the offer from the United Kingdom to work with other Members in the Region to explore the possibility of using the UKCP09 data and methodology to develop their own regional climate projections.

4.2.5 Regional Climate Centres (RCCs)

4.2.5.1 The Association noted the recent progress in the development of the amendments to the Manual on the Global Data Processing and Forecasting System (GDPFS), Volume 1 (Global Aspects), approved by EC-LXI, and thereby setting procedures for the establishment of WMO RCCs.

4.2.5.2 The Association noted that, as a result of a RA VI RCC Implementation Meeting (Geneva, Switzerland, 20–21 October 2008), and extensive communication amongst RA VI Members, the RA VI Working Group on Climate-related Matters had developed an RA VI RCC Implementation Plan, which was endorsed by the president of RA VI in June 2009. The RA VI RCC Implementation Plan describes a network, which in its current design consists of three nodes, namely: (i) climate data; (ii) climate monitoring; and (iii) long-range forecasting, each node representing a consortium of NMHSs with one of them identified as the lead institution. The Association desired that the Implementation Plan with details of the services that are provided by each of the Node should be posted on the Web. The Association noted that the pre-operational production phase of the pilot RA VI RCC-Network began service provision on 1 June 2009, and that this pilot phase is expected to continue until the formal designation process proposed to be completed in 2011.

4.2.5.3 The Association emphasized the need to give priority to the establishment of a full-scale RA VI RCC-Network in accordance with the procedures applicable for the designation of RCCs, providing appropriate flexibility to take into account national and regional priorities and capabilities. Accordingly, the Association adopted Resolution 1 (XV-RA VI) – Establishment of a Regional Climate Centre Network in Regional Association VI (Europe), identifying the content, structure and functions of the RCC-Network nodes in the Region. It also noted the suggestion made by Greece for the establishment of interregional RCCs, including the possibility of an RA I and RA VI network for the Mediterranean region. The Association welcomed the offer of Germany to organise a workshop on Implementation of RCCs with special focus on climate monitoring and climate watch implementation in RA VI in 2010.

4.2.6 Capacity-building for Improved Climate Prediction and Assessments

4.2.6.1 The Association noted with appreciation that RA VI had actively contributed to CLIPS training activities. Members recognized the special and ongoing technical training needs of developing countries in the Region for provision of a full range of climate predictions and assessments. The Association agreed that the current components of the CLIPS Curriculum needed to be further developed into complete, self-contained modules that could be integrated into regular training activities, and urged Members, CCl and the new RA VI Working Group on Climate and Hydrology to formulate a coordinated strategy to meet this need.

4.2.6.2 The Association noted with appreciation the series of training workshops for technical staff of NMSs from Central and Eastern Europe on the use of satellite data for climate monitoring, organized under the auspices of the EUMETSAT Climate Monitoring Satellite Application Facility and hosted by the NMSs of Croatia and Germany.

4.2.7 Adaptation to Climate Variability and Change

4.2.7.1 The Association, noting the great concern the governments in the Region had on climate change and related environmental issues, recognized that NMHSs needed to have the capability to provide relevant advice to their government policy-makers. For this purpose, the

Association agreed that NMHSs needed to be closely involved in the development of future climate scenarios in a regional context, and to pay special attention to the need for near-term projections.

4.2.7.2 The Association noted that EC-LX endorsed the concept of a new WMO initiative to support adaptation to climate variability and change, with the mission 'To strengthen coordination and enhance the provision of user-oriented climate information, products, advisories and services and to thereby support national and regional climate-risk assessment, climate adaptation planning and implementation practices for sustainable development'. The Association was pleased to note that the key aspects of this initiative had been integrated into the overarching outcome of the World Climate Conference-3 and urged the Secretary-General and CCl to sustain the ongoing efforts in this regard.

4.2.7.3 The Association recognized the benefits to the Region of the establishment and sustained operation of global and regional mechanisms for climate (e.g., GPCs, RCCs, RCOFs), for improving capability of Members to support adaptation to climate variability and change, in particular to engage in and improve user liaison and development and delivery of products and services to users at national and local scales. The Association therefore urged the Secretary-General to strongly promote these mechanisms as part of the overall WMO initiative.

4.2.7.4 The Association further recognized the need to promote climate applications in key socio-economic sectors and appreciated the CCl initiatives to support climate applications in health, energy, tourism, urban and building sectors. The Association, noting the need for partnerships with user sectors to realize more effective climate applications, appreciated the efforts of WMO to sustain longstanding partnerships with UN agencies such as WHO, UNWTO, UNEP and other international organizations. The Association urged Members to complement these efforts by working towards strengthening partnerships between NMHSs and user agencies at the national level.

4.2.7.5 The Association noted with satisfaction that three major global WMO conferences directly relevant to climate adaptation were hosted in the Region during the previous intersessional period, namely the WMO Conference on Living with Climate Variability and Change: understanding the uncertainties and managing the risks (Espoo, Finland, 17–21 July 2006), the WMO Conference on Secure and Sustainable Living: Social and Economic Benefits of Weather, Climate and Water Services (Madrid, 19–22 March 2007) and the World Climate Conference-3 (Geneva, Switzerland, 31 August–4 September 2009). The Association appreciated the strong support of Finland, Spain and Switzerland to the respective conferences.

4.2.7.6 Recognizing the need to establish a baseline for the extent to which WMO Members are currently engaged in sector-specific activities relevant to Adaptation to Climate Variability and Change, the Association appreciated the on-line survey launched in October 2008 by the WMO Secretariat. The Association noted that the outcomes of the survey would address key gaps and build on current strengths of efforts for adaptation measures. The Association urged all Members to provide the required inputs to make the results comprehensive.

4.2.7.7 The Association noted with satisfaction that experts from the Region are playing lead roles in the project "Climate Observations and Regional Modelling in Support of Climate Risk Management and Sustainable Development", being jointly implemented by WCRP, GCOS, WCASP, WCDMP and ICPAC. This project, supported by the World Bank, is focused on the Greater Horn of Africa region.

4.2.8 World Climate Conference-3 (WCC-3)

4.2.8.1 The Association appreciated the successful organization of the World Climate Conference-3 (WCC-3) (Geneva, 31 August–4 September 2009). The Association thanked the Government of Switzerland for hosting the event, and for its substantial contributions to financial, logistic as well as organizational aspects. The Association noted with satisfaction that a number of other RA VI Members along with the European Union have co-sponsored WCC-3, indicating the strong support of the Region to this important event. The Association appreciated that a number of

experts from the Region contributed to the WCC-3 International Organizing Committee (WIOC) and also the scientific programme of the conference.

4.2.8.2 The Association endorsed the overarching outcome of WCC-3 in the form of a Global Framework for Climate Services (GFCS). The Association urged Members to strongly support the follow-up actions of WCC-3, particularly with regard to the further development and implementation of GFCS.

4.3 ENHANCED CAPABILITIES OF MEMBERS TO PROVIDE BETTER HYDROLOGICAL FORECASTS AND ASSESSMENTS *(agenda item 4.3)*

4.3.1 The Association noted that, in general, the needs of Members in the Region were adequately reflected in the activities of the Hydrology and Water Resources Programme given in the Strategic Plan as approved by Fifteenth Congress and in the Secretariat Operating Plan.

4.3.2 The Association noted with appreciation the report of the chairperson of the Working Group on Hydrology (WGH), Mr Jan Kubát (Czech Republic). It noted the progress made and results achieved in carrying out the activities which had been identified at the previous RA VI session in 2005. In particular, it noted with interest the activities reported by the chairman of the WGH and focused on the following areas:

- Subgroup on Flood Forecasting and Warning (chaired by Mr I. Karro – Sweden);
- Public Relations and Visibility of Hydrological Services (by Ms I. Simota – Romania);
- Networking for contribution to regional initiatives related to water (by Mr M. Puupponen – Finland);
- Climate and Water (by Mr T. Kokkonen – Finland);
- Water Monitoring and Assessment (by Mr V. Vuglinsky – Russian Federation);
- Potential Extreme Floods (by Mr B. Ozga-Zielinski – Poland);
- Drought Assessment and Forecasting (by Ms G. Monacelli – Italy);
- International standards for hydrological observation and processing (by Ms Zs. Buzás – Hungary).

It also noted that at its last meeting of the WGH in March 2009 the participant stressed the need felt by all NHSs in the Region, of having a forum for networking, discussing and coordinating their activities as an integral part of RA VI activities, with special reference to the inputs to the implementation of European Union water related directives. It also commended the active involvement of WGH representatives in the various working groups emanating from the European Commission Common Implementation Strategy for the Water Framework Directive. The Association took note of the proposal emanating from the WGH regarding the re-establishment of the Working Group on Hydrology for the next intersessional period.

4.3.3 The Association was informed about the outcome of the thirteenth session of the Commission for Hydrology. It took note that the Commission had re-established an Advisory Working Group (AWG) composed of nine members, and four Open Panels of CHy Experts (OPACHE) on four thematic areas: Quality Management Framework – Hydrology, Water Resources Assessment, Hydrological Forecasting and Predictions, and Water, Climate and Risk Management. The Association was pleased to note that Ms Jeanna Balonishnikova (Russian Federation), Ms Zsuzsanna Buzás (Hungary) and Ms Ann Calver (United Kingdom) are members of the AWG. The Association also encouraged Members to nominate more experts to the OPACHE and to contribute actively to the work programme. Where there are synergies in initiatives of RA VI and CHy, these should be capitalized on.

4.3.4 The Association noted that Cg-XV had recognized that the regional Working Groups for Hydrology formed one of the strong mechanisms to project the specific needs of the Regions and that this was echoed by EC-LXI. Recognizing the need to streamline the structure of the working groups in accordance with the Result-based Management (RBM) principles, the Association felt that any change in structure must ensure that opportunities for the hydrological inputs from NHSs to water management are maintained.

4.3.5 The Association welcomed the launching of the Help Desk for Integrated Flood Management on 17 June 2009 during the Global Platform for Disaster Risk Reduction and noted the broad based support to the initiative provided by several key partners from the Region.

4.3.6 The Association commended the number of manuals and guidelines which have been published or are under development in the framework of the Hydrology and Water Resources Programme and their usefulness in support of day-to-day activities of NHSs. It also appreciated the support offered by Germany in publishing one of these manuals and invited other Members to support the publication or translation of such material.

4.3.7 The Association also noted the active participation of WMO in the 5th World Water Forum (Istanbul, Turkey, 16–23 March 2009) and in the Expo 2008 in Zaragoza (Spain) and appreciated the efforts done to raise the visibility of WMO and its Members.

4.3.8 In accordance with Regulation 167 of the WMO General Regulations, the Association decided to appoint Mr Markku Puupponen (Finland) as the Regional Hydrological Advisor to the president of the Association.

4.4 INTEGRATION OF WMO OBSERVING SYSTEMS *(agenda item 4.4)*

Atmospheric Observations

Regional Basic Synoptic Network (RBSN) and Regional Basic Climatological Network (RBCN)

4.4.1 The Association noted that owing to Members' efforts, the RBSN and RBCN have demonstrated sustainable performance. It appreciated the work done by the Working Group on Planning and Implementation of the WWW in Region VI (RA VI-WG-PIW), through the Coordinator of the Sub-group on Regional Aspects of the Integrated Observing System (IOS), to identify and address deficiencies in the observing programmes. It also appreciated the work done by EUCOS and ECMWF aimed at the improvement of monitoring procedures and the presentation and distribution of monitoring results on the availability and quality of land surface-based observational data.

4.4.2 The Association noted with appreciation that the EUMETNET/EUCOS Programme is offering a quality monitoring service for all Members of RA VI. On a daily basis, network performance statistics are delivered for surface synoptic and radiosonde stations (RBSN). Data availability, timeliness, and for radiosonde data, the number of ascents achieving 100 hPa or 50 hPa are monitored. The latest update of the monitoring portal from September 2008 also includes comparisons between observations and NWP model output. The EUCOS RA VI Quality Monitoring Portal is accessible through www.dwd.de/eucos without a password.

4.4.3 The Association confirmed the principles to be applied for the inclusion of stations in the RBSN and RBCN and agreed to the revisions of the RBSN and RBCN as compiled by the WMO Secretariat in consultation with the Coordinator of the Sub-group on Regional Aspects of the IOS and circulated among RA VI Members prior to this session. By adopting Resolution 2 (XV-RA VI) – Regional Basic Synoptic Network and Regional Basic Climatological Network in Region VI, the Association approved the new lists of RBSN and RBCN stations in Region VI as given in Annex 1 and Annex 2 to this resolution.

4.4.4 The Association urged Members to update in a timely and regular manner the designation of their National Focal Points (NFP) on both the RBSN/RBCN (GSN and GUAN) and *Weather Reporting*, Publication No. 9, Volume A (Observing Stations). It also requested that Members, through their NFPs, make sure that Volume A correctly describes respective national observing stations.

4.4.5 The Association endorsed the proposal from WG-PIW and WG-CRM to set up a Task Team on the redesign of the RBSN/RBCN. The Task Team should be composed of experts from IOS and the climate area and should review user requirements for the basic synoptic and climate observing network of all WMO Programmes, network design activities by EUCOS and NMHSs of the Region and results from Observing System Experiments (OSEs). The Task Team will develop a revised design of RBSN/RBCN, which could be proposed as a WIGOS Demonstration Project of RA VI. It will liaise with CBS-OPAG-IOS and CCl-OPAG Climate Data and Data Management, and report to the RA VI Management Group via the Working Group on Technology Development and Implementation (WG TDI).

Aircraft Observations

4.4.6 The Association welcomed the discussion by the eleventh AMDAR Panel meeting regarding further promotion of AMDAR in the Region, including the development of a set of guidelines to assist NMHSs in developing their national AMDAR programmes. It supported a proposal that the national AMDAR operational programmes should consider additional coverage of AMDAR data outside the national territory to be provided to the GTS as a contribution to the WWW Programme. The Association requested that Members support the development and implementation of a standard suite of AMDAR software and hardware solutions that could be made available to all NMHSs.

4.4.7 The Association also noted the interest expressed by Austria, Bulgaria, Croatia, the Czech Republic, Hungary, Iceland, Ireland, Italy, Poland, Portugal, Romania, Spain, Ukraine and the Russian Federation in developing their own AMDAR Programmes or integrating their AMDAR operations into the E-AMDAR Programme. The Association encouraged Members to enter into negotiations with their airline industries to further extend AMDAR coverage in the Region. The AMDAR panel was specifically set up to provide expertise and assistance in starting the development of a national or regional AMDAR programme.

Atmospheric Chemical Composition and UV Measurements

4.4.8 The Association agreed that the Global Atmosphere Watch (GAW) significantly contributes to quality control/assurance and calibration of atmospheric chemistry observations globally. It stressed that activities of the high-quality regional and global calibration centres were essential and welcomed the new European Ultraviolet Calibration Centre hosted by PMOD/WRC in Davos, Switzerland, and the GAW World Data Centre for Remote Sensing of the Atmosphere (WDC-RSAT) hosted by DLR in Germany. The latter will provide easy access to satellite data on atmospheric composition with an initial emphasis on ozone and aerosols. The Association noted that the GAW World Data Centre on Aerosols will be transferred from the Joint Research Centre of the European Commission to the Norwegian Institute for Air Research. The Association recommended that Members further consider hosting GAW facilities to fill gaps identified in the *WMO Global Atmosphere Watch (GAW) Strategic Plan: 2008–2015* (GAW Report No. 172, WMO/TD-No. 1384, Table 1). Noting the need for active stations in Eastern Europe, the Association encouraged Members to establish and enhance observations in this area in collaboration with the European Monitoring and Evaluation Programme (EMEP). The Association welcomes the active participation of GAW in major conferences and in research projects (GEOmon, IAGOS-ERI, MEGAPOLI) that are part of the EU's Framework Programmes, noting that this is an excellent path for collaboration, community-building, combining efforts and funding of activities.

Marine and Oceanographic Observations

4.4.9 The Association recalled and endorsed the following recommendations from the sixty-first session of the Executive Council:

(a) That Members commit additional resources to eventually ensure full implementation and sustainability of the observing components within their responsibility. The Council in particular urged Members to participate in the DBCP barometer upgrade scheme and to install barometers on all drifting buoys;

(b) That Members participating in the Voluntary Observing Ship (VOS) Climate Project (VOSClim) make sure that the required additional metadata and quality elements are properly recorded and distributed, and that they collaborate with the shipping industry to maintain and increase the flow of VOS information. Members are encouraged to continue and expand, where possible, the activity of Port Meteorological Officers in support of the VOS;

(c) That Members assist in the development of wave observing technology through deployment, testing of prototypes, and evaluation of instruments.

Terrestrial Observation

Water cycle

4.4.10 The Association noted the activities carried out by the expert Working Group on Hydrology (WGH) related to the initiation of a joint effort with the International Organization for Standardization (ISO) and the European Committee for Standardization (CEN) on international standards for hydrological observations and processing, aimed at the compatibility of monitoring results within the framework of the EU Water Framework Directive. It also noted the WMO/FAO framework to develop standards for terrestrial climate-related observations. It is necessary to make an assessment of terrestrial water cycle observations (e.g. snow and ice, surface water and river discharge, soil moisture and ground water) to identify major gaps and development needs in the context of the WIGOS system. This assessment should take into account general WIGOS objectives, technical and scientific aspects and service delivery. Within RA VI, the assessment should be organized in cooperation between working groups (or other bodies) that are responsible for WIGOS development on one hand and hydrology on the other.

Polar Observation and Global Cryosphere Watch

4.4.11 The Association agreed to build a partnership with the IPY observation legacy initiatives through the EC Panel of Experts on Polar Observations, Research and Services (EC-PORS) and encouraged further efforts to develop regional observing systems in both polar regions.

4.4.12 The Association noted that based on the report Global Cryosphere Watch (GCW): Background, Concept, Status, Next Steps, EC-LXI had requested the preparation of a GCW implementation strategy for consideration by the Sixteenth WMO Congress in 2011. The Association encouraged Members to actively participate in those efforts and provide direct and in-kind contributions to support PORS activities and next step of GCW development.

Cross-cutting Aspects

Space-based observation

4.4.13 The Association noted that EUMETSAT was operating three of the eleven geostationary satellites that were currently operational, thus observing 55 per cent of the globe. EUMETSAT was also contributing to polar-orbiting observation with Metop-A and its advanced instrumentation, and to ocean surface topography with Jason-2, in partnership with France and the United States. The Association was informed that the Russian Meteorological Satellite METEOR-M has been launched on 17 September 2009. It welcomed the steps taken for the development of

Meteosat Third Generation, Jason-3 and post-EPS programmes. The Association emphasized that these plans respond to the requirements of operational weather forecasting and significantly contribute to global monitoring of environment and climate change. It also underlined the contribution of CNES and ESA to space-based observation through R&D satellite missions and looked forward to the implementation of the Soil Moisture and Ocean Salinity mission (SMOS, expected in July 2009), the satellite radar altimetry project SARAL/Altika, Cryosat-2, Megha-Tropiques and the Atmospheric Dynamics Mission (ADM-Aeolus).

4.4.14 The Association noted that the Vision for the GOS, approved by EC-LXI, called for the transition to operational status for several space-based missions currently performed in an R&D framework only. It encouraged cooperative efforts of R&D and operational agencies of Members, the Coordination Group for Meteorological Satellites (CGMS), the Committee on Earth Observation Satellites (CEOS) and WMO towards implementing this Vision. The Association noted with appreciation that the new vision addressed climate observation needs with the high-level goal of avoiding gaps in satellite-based climate records.

4.4.15 The Association stressed the importance of the Global Space-based Inter-Calibration System (GSICS) to ensure consistency of satellite datasets as required for climate applications. It welcomed the participation of EUMETSAT and France in GSICS. The Association supported the initiative for establishment of the joint CBS-CAeM Interprogramme Coordination Team for Space Weather (ICT-SW).

4.4.16 The Association underlined the importance of leveraging resources and competencies to deliver advanced, high-quality satellite-based products for weather and climate applications; in this respect it appreciated the role of EUMETSAT and its Satellite Application Facilities (SAF) involving a number of RA VI Members. It acknowledged the contribution to the Sustained Coordinated Processing of Environmental Satellite Data for Climate Monitoring (SCOPE-CM) through EUMETSAT and the SAF on Climate Monitoring.

4.4.17 With respect to the availability and use of satellite data and products by WMO Members, the Association noted that 66 per cent of RA VI Members had responded to the enquiry performed in 2008. Access to and use of satellite data had increased in 2006–2007 for 76 per cent of these respondents, with the others indicating no significant change. The limiting factors for a full usage of satellite data are the lack of resources (financial or staff) and the technical difficulty and lack of knowledge to address it. The Association appreciated the important training programmes conducted by EUMETSAT and by Members, and the implementation of a new Virtual Laboratory Centre of Excellence by the Russian Federation.

Instrument Standards and Best Practices

4.4.18 The Association noted that the Executive Council had adopted revised Terms of Reference (ToRs) for Regional Instrument Centres (RICs) and Regional Radiation Centres (RRCs) and that the WMO Congress and Executive Council had requested regional associations to further strengthen RICs/RRCs and to initiate the process of continuous evaluation of RICs and RRCs under their responsibility to verify their capabilities and performance. The Association requested its Members who operate RICs to declare their level of capability under the new ToRs and those who operate RICs and RRCs to carry out periodic evaluations, in liaison with CIMO if appropriate, and to report their outcomes to the next session of the Association. Taking into account the high level of performance of its RICs and RRCs, the Association requested that they organize capacity-building activities with a view to sharing their knowledge with other Members, in particular with regard to the procedures to be used for the calibration of meteorological and environmental instruments, and that they consider inviting trainees from RICs of developing countries to help them strengthen their capacities.

4.4.19 The Association highlighted the usefulness of instrument intercomparisons for comparing the performance of different instrument types, providing and improving the calibration of instruments, and fostering the development of improved instruments. The Association therefore encouraged its Members to do their utmost in supporting, organizing and participating in future

instrument intercomparisons. The Association expressed its thanks to Italy for having hosted the WMO Field Intercomparison of Rainfall Intensity instruments; to Croatia, which hosted a Subregional Pyranometer Intercomparison for RA VI Members from South-eastern Europe; and to Switzerland, which is planning to host the eleventh International Pyrheliometer Comparisons in 2010.

4.4.20 The Association encouraged its Members to participate in the activities of the COST Action ES0702 EG-CLIMET: European Ground-Based Observations of Essential Variables for Climate and Operational Meteorology, which addresses integration of ground-based remote sensing and in situ observations for future upper-air observing networks.

Radio-Frequency Coordination

4.4.21 Recalling the continuing threat to radio frequency bands allocated to meteorological systems and environmental satellites, the Association urged all Members to ensure continuous coordination with their national radio communication administrations and to participate actively in the national, regional and international activities involving radio communication regulatory issues for meteorological and related activities, using as a reference the new joint ITU-WMO Handbook *Use of Radio Spectrum for Meteorology: Weather, Water and Climate Monitoring and Prediction*.

Evolution of the GOS

4.4.22 The Association noted the valuable contributions from RA VI Members and EUMETNET to the development of the Vision for the GOS in 2025, which was approved by EC-LXI. The Association requested that its Members support CBS in developing a new version of the Implementation Plan for Evolution of Space and Surface-Based Sub-systems of the GOS that will incorporate the Vision for the GOS in 2025.

Observing System Experiments (OSEs)

4.4.23 Noting the valuable conclusions and recommendations from the Fourth Workshop on the Impact of Various Observing Systems on NWP approved by CBS-XIV, the Association requested major RA VI NWP Centres to continue observing and simulation experiments so as to contribute to the fifth workshop planned in 2012.

Coordination of Observations for Climate: GCOS and WCRP

GCOS

4.4.24 The Association encouraged supporting the implementation of GCOS at the national level through the designation of GCOS National Coordinators and the establishment of appropriate national coordination mechanisms.

4.4.25 The Association noted with appreciation the activities undertaken in the GCOS system improvement programme in Bosnia-Herzegovina and Armenia from 2006 to 2008, leading to improved performance of RBCN, GSN and GUAN through station renovation, training of operators, and improved data management and dissemination. It specifically welcomed the support by donor countries for these activities and encouraged their continuation.

4.4.26 The Association welcomed the designation of the Meteorological Observatory Lindenberg (MOL-RAO), Germany, as the GCOS Reference Upper-Air Network (GRUAN) Lead Centre for an initial period of five years, and expressed its appreciation to the Deutscher Wetterdienst for its support.

4.4.27 Noting that five initial GRUAN sites in RA VI had been confirmed by their host institutions as of June 2009, the Association encouraged Members to support initial GRUAN sites in their efforts to meet the network requirements, including appropriate instrumentation, data management and dissemination practices, international coordination and scientific support.

4.4.28 The Association noted that the GAW CO_2 and CH_4 networks were recognized as GCOS Comprehensive Networks in 2006. In 2007 an agreement between GCOS and GAW specified the terms under which the GAW ozone and contributing networks were designated as the GCOS Global Baseline Total Ozone Network and the GCOS Global Baseline Profile Ozone Network. The agreement further specified terms under which selected Network for the Detection of Atmospheric Composition Change (NDACC) stations could contribute to GRUAN. In this connection, the Association urged Members to better integrate existing aerosol networks, and to strengthen their efforts towards establishing a GAW global network for aerosol properties.

4.4.29 The Association noted with appreciation the Global Terrestrial Observing System (GTOS) report entitled *Assessment of the status of the development of standards for essential climate variables in the terrestrial domain and development of a framework for climate-related terrestrial observations: Update on progress*, which was submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in June 2009. It agreed with the proposed development of a UN/ISO framework dealing with observations of terrestrial Essential Climate Variables and stressed the need for appropriate representation of WMO in such a framework through its Commissions for Hydrology and Agricultural Meteorology and involvement of the GCOS/GTOS Terrestrial Observation Panel for Climate.

4.4.30 The Association noted with appreciation the efforts by all Members to assist space agencies in meeting the satellite-related needs of the GCOS Implementation Plan. It particularly welcomed the initiatives of EUMETSAT and ESA (e.g., through its new Climate Change Initiative) to ensure the sustained generation of fundamental climate data records and ECV satellite products, including reprocessing of past satellite datasets.

4.4.31 The Association urged Members to take special note of the priorities identified in the GCOS Progress Report 2004–2008, which had been submitted to the thirtieth session of the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA) in June 2009, and to address identified gaps, in particular in financing sustained operation of networks in line with the GCOS Climate Monitoring Principles.

WCRP research observations and WOAP

4.4.32 The Association welcomed deliberations of the third meeting of the WCRP Observations and Assimilation Panel and supported the upgrade of the International Satellite Cloud Climatology Project (ISCCP) to climate data record quality and the transfer of this system from research to operations, with a continuing scientific oversight and evaluation of the ISCCP products.

WMO Integrated Global Observing System (WIGOS)

Implementation of the WIGOS concept

4.4.33 The Association expressed its strong support for the further development of the WIGOS concept and its implementation in collaboration with WMO's partner organizations and their observing systems. It recalled the request of EC-LXI that the Secretary-General provide the resources needed to move WIGOS from concept to reality.

4.4.34 The Association underlined the importance of the active collaboration of Members and appropriate regional working bodies in testing, developing, and implementing the WIGOS concept. It requested that its president submit a proposal to the EC WG on WIGOS and WIS reflecting regional aspects of implementation and further development of the WIGOS concept, and requested that its working bodies include the relevant tasks and activities in their work plans.

4.4.35 Building on continued partnership in the development of WIGOS, the Association emphasized the value of active engagement of agencies co-sponsoring component observing systems and programmes (in particular GOOS, GTOS and GCOS), recognizing the opportunities for cooperation and mutual support and the need to respect individual mandates and policies.

WIGOS Pilot Projects (WPP)

4.4.36 The Association reiterated that WIGOS Pilot Projects (WPP) made it possible to address major issues at an early stage in the integration process and would help in elaborating the WDIP. It welcomed the five WPPs identified by Fifteenth Congress (related to GAW, CHy, AMDAR, CIMO and JCOMM, respectively) and the two new WPPs on satellite inter-calibration and GRUAN.

4.4.37 Regarding the WPP on Improvement of Dissemination of Ozone (total column, profiles and surface) and Aerosol Observations through the WIS, the Association agreed that near-real-time (NRT) delivery of ozone and aerosol variables needed for NWP should be addressed as a matter of priority; it urged Members to support the efforts to move to NRT delivery of GAW data.

4.4.38 The Association urged Members currently operating AMDAR programmes in the Region to participate in the AMDAR WPP activities in order to advance the integration of AMDAR into WIGOS.

4.4.39 The Association noted the intention of CIMO to widen the goals of its pilot project in addressing topics such as radar calibration and a siting classification of meteorological stations. The Association agreed that a large amount of technical knowledge and expertise at the level of instruments and methods of observation was needed and urged Members to support this pilot project and related activities through active involvement of their experts in the Project. The Association, however, expressed the necessity that the siting classification should take into account the different requirements of the users and their applications; the current guidelines and criteria for the sitting classification should therefore be reviewed accordingly.

4.4.40 The Association noted that in the context of the JCOMM WPP, and taking into account the modernization of the Marine Climatological Summaries Scheme (MCSS), the Global Collecting Centres (GCCs) operated by Germany and the United Kingdom were taking steps to upgrade the GCCs as WIS Data Collection or Production Centres (DCPC). The Association urged Members to participate actively in WPP through: (i) engaging in active cooperation with the oceanographic data centres in order to ensure the development of or interoperable arrangements among their data systems (e.g., the Coriolis data system in France, which is operating the Argo Global Data Assembly Centres) and the WIS; and (ii) offering facilities for running Regional Marine Instrument Centres on a trial basis.

4.4.41 The Association urged Members to participate actively in the GRUAN WPP through: (i) supporting the development of manuals and guidelines for GRUAN operation; (ii) fostering the development of a GRUAN data dissemination model; (iii) supporting the assessment of best instrumentation; and (iv) supporting the operation of the existing initial network, as appropriate.

WIGOS Demonstration Projects (WDP)

4.4.42 The Association noted with appreciation the Integrated Meteorological and Hydrological Network (IMHN) WDP initiated by the Russian Federation and requested that its newly established Working Group on Technology Development and Implementation (WG TDI) collaborate closely with the Russian Federation in the implementation of this WDP. The Association also requested that the Russian Federal Service for Hydrometeorology and Environmental Monitoring regularly inform the president of the Association on the implementation and progress of its WDP.

4.4.43 With reference to paragraph 4.4.5 above, the Association agreed to propose a WDP aimed at developing a revised design of RBSN/RBCN for RA VI.

Cooperation with GEOSS

4.4.44 The Association noted that WMO efforts to integrate observing systems through WIGOS and WIS, and compliance with related WMO, ISO and ITU standards, will also ensure interoperability with other systems within the Group on Earth Observations (GEO) Global Earth Observation System of Systems (GEOSS). The Association also noted that EC-LXI called for a

review of WMO's participation in GEO/GEOSS and requested an evaluation of the contributions being made by WMO, the benefits and results that the Organization has gained through its participation, and potential opportunities for enhanced involvement.

4.5 DEVELOPMENT AND IMPLEMENTATION OF THE NEW WMO INFORMATION SYSTEM *(agenda item 4.5)*

4.5.1 WIS development and implementation strategy

WIS Implementation Plan, including support to WIGOS

4.5.1.1 The Association recalled that the WIS would provide three fundamental types of services to meet the different requirements, as follows:

(a) Routine collection and dissemination service for time-critical and operation-critical data and products;

(b) Data Discovery, Access and Retrieval service;

(c) Timely delivery service for data and products.

4.5.1.2 WIS implementation should build upon existing WMO information systems in a smooth and evolutionary process. The WIS Implementation Plan has two parts that would be developed in parallel:

(a) Part A: the continued consolidation and further improvements of the GTS for time-critical and operation-critical data, including its extension to meet operational requirements of WMO Programmes in addition to the World Weather Watch (including improved management of services);

(b) Part B: an extension of the information services through flexible data discovery, access and retrieval services to authorized users, as well as flexible timely delivery services; it would be implemented essentially through the Internet.

4.5.1.3 The Association noted the considerable progress that occurred in the development of WIS and, in particular, the major steps taken towards the implementation of the first operational Global Information System Centre (GISC) in 2009. It expressed great appreciation for the development efforts made by some RA VI Members through participation in national and/or international pilot projects including the considerable investment in the establishment of an RA VI VGISC. It emphasized that all these experiences should be shared among Members planning to be GISCs and/or Data Collection or Production Centres (DCPCs). It urged RA VI Members to focus special efforts and resources on further development of the following key projects:

(a) Implementation of operational GISCs: 2009–2011;

(b) Implementation of DCPCs, i.e., WIS interfaces at centres with agreed international responsibilities within WMO Programmes for collecting and/or generating related data and products: 2009–2011.

The Association emphasized the crucial importance of effective communication and outreach efforts to ensure NMHSs' understanding of WIS and its benefits to all potential user groups and entities, and it urged the Secretariat and Members involved in the early phase of WIS implementation to invest special efforts to this effect. It requested the Management Group to consider the establishment of a Task Team on WIS Implementation, including the topics Regional Meteorological Data Communication Network, Integrated Global Data Dissemination Service, VGISC and capacity-building, under the Working Group on Technology Development and Implementation.

4.5.1.4 The Association noted the progress made in the development of the comprehensive WIS Project Plan, including an Implementation Plan. It urged RA VI Members and technical commissions to provide early interaction and contribution at the regional level to the development and consolidation of the WIS Project Plan and WIS Implementation Plan. It expressed its deep appreciation to Members and organizations that had contributed to the WIS Trust Fund. Noting the financial and human resources that were further needed for ensuring the proper development of WIS, the Association invited RA VI Members and partner organizations to continue contributing to the WIS Trust Fund. In noting the contributions made by seconded staff, even for a limited duration, to WMO as a whole as well as to individual Members, the Association encouraged Members to provide suitable staff to the Secretariat through secondments.

4.5.1.5 The Association noted that WIGOS was crucially dependant upon effective WIS support and services, e.g., the specialized data collection means, the generation, collection, management and handling of related metadata and the distribution of and access to the data. It invited RA VI Members to contribute, in coordination with ICG-WIS, the EC Working Group on WIGOS-WIS and relevant TCs activities, to ensure that the WIS elements and components required respectively for the implementation of the WIGOS pilot projects were developed and coordinated to meet the respective projects' aims and requirements.

Regulatory and guidance documentation

4.5.1.6 The Association emphasized the importance of appropriate regulatory and guidance documentation on the WIS. It noted and supported the important building blocks that were developed towards the future "Manual on WIS" including the WIS Compliance Specifications for GISC DCPC and NCs and the WIS Functional Architecture. It noted that CBS re-affirmed the high priority need for the development of the Manual on WIS, based on the experience gained through early WIS implementation.

Involvement of Regional Association VI and NMHSs

4.5.1.7 The Association noted the considerable contribution of Members involved in the RA VI VGISC Project and stressed that the support and involvement of all Members in the Region in the WIS development was a crucial factor for ensuring a successful implementation and a shared ownership of the system. It requested its relevant regional working group to take a leading role in the regional WIS development and planning. It emphasized the need for capacity-building in developing countries to enable them to participate in WIS, taking into account the capabilities, opportunities and constraints of the NMHSs of developing countries. Noting the high value of WIS pilot projects, the Association urged its relevant working groups, with the support and coordination of the ICG-WIS, to develop and promote pilot projects that facilitate the introduction of WIS functions and services. It invited NMHSs from developed countries, and in particular those participating in the early phase of WIS implementation, to support and assist in these initiatives.

4.5.1.8 Noting the progress made in WIS requirements from WMO Programmes, as reviewed in the 'Report on the WIS Rolling Review of Requirements', the Association urged its relevant working groups to actively pursue their contributions to the refinement of WIS Rolling Review of Requirements to ensure that the regional programmes requirements on WIS are taken into account.

GISC and DCPC designation process

4.5.1.9 The Association fully concurred with the Executive Council in stressing the crucial importance of an early identification of GISCs and DCPCs for the planning and implementation of WIS. It recalled that Fifteenth Congress endorsed in principle WIS procedures for the designation of GISCs and DCPCs and encouraged Members to adhere to them. It noted that, upon the request from the sixtieth session of the Executive Council, the Secretariat has requested Members to identify potential GISCs and DCPCs centres with supporting information. Members' contribution on identified GISC and/or DCPC(s) was reviewed by an ad-hoc ICG-WIS task group and by CBS-XIV

and consolidated for presentation to the sixty-first session of the Executive Council. The Association noted with appreciation that four Region VI Members (France, Germany, Russian Federation and the United Kingdom) have identified potential GISCs and twelve Members plus ECMWF and EUMETSAT have identified several potential DCPCs associated to RA VI Centres that fulfil, within specific WMO Programmes, an international responsibility for the collection/generation and provision of data, forecast products, processed or value-added information (e.g. RSMCs). The Association fully supported these candidate GISCs and DCPCs, and invited the Members operating these centres to make their best implementation and preparatory efforts towards demonstrations of capabilities of candidate WIS centres at the CBS Extraordinary Session (2010), with a view to a formal designation by Cg-XVI in 2011.

GISC and DCPC Data Discovery, Access and Retrieval services

4.5.1.10 With respect to the Data Discovery, Access and Retrieval services, based on request/reply "pull" mechanism operated essentially through the Internet, that were the salient extension of services that will be provided by WIS, the Association agreed that CBS and the ICG-WIS should urgently develop recommended procedures and practices, based on international standards and current technologies, for adequate authentication and authorization mechanisms to enable and manage the use of the service, at national and international levels, by authorized users.

4.5.1.11 The Association noted with appreciation the several mechanisms for data exchange, access and retrieval that were already available to NMHSs in RA VI through the use of the Internet that were implemented by many centres, including HTTP and FTP Servers. It noted the work of France, Germany and the United Kingdom on testing metadata management systems such as GEONETWORK that could assist all Members in enabling some of the new functionalities in WIS. The Association agreed that the implementation of WIS functions was expected to provide a significant enhancement in the versatility of these data access and retrieval services.

4.5.2 Data and metadata representation

Migration to Table-Driven Code Forms (TDCF)

4.5.2.1 The Association noted with appreciation the action taken by Ms Eva Červená, the Rapporteur on the Regional TDCF Migration Plan, with a view to the migration in Region VI.

4.5.2.2 CBS-XIV noted that about ten per cent of the surface and upper-air reports from the RBSN stations were received in BUFR form at MTN centres in 2008. EC-LVI noted the continued slow progress in the migration process. As shown by the reports regularly distributed by the Rapporteur on the Regional TDCF Migration Plan, the situation in Region VI is better than in other Regions, but the migration process has not yet been completed. The improved situation in Region VI is particularly due to the active role the rapporteur in the coordination of the migration process. The Association endorsed the version 1 of the RA VI Regional TDCF Migration Plan recommended by the Working Group on Planning and Implementation of the WWW (WG-PIW) in Region VI. With a view to finalizing and implementing the national plans for the migration in accordance with this regional plan, the Association requested that a Task Team on Regional Migration to TDCF (TT-RMTDCF) be established under the Working Group on Technology Development and Implementation (see agenda item 5.2):

(a) To keep updated the Regional Plan for the migration to TDCF;

(b) To advise Members of the Region on all aspects related to the migration strategy;

(c) To actively support training activities on TDCF in the Region;

(d) To liaise with the CBS OPAG-ISS/IPET-DRC.

4.5.2.3 The Association encouraged NMHSs and the focal points for code and data representation matters designated by Members to collaborate with the Task Team to finalize and implement plans for the migration, and informed the Task Team and Secretariat of their plans. The Members should benefit from recent guidance, encoder-decoder software, self-training, and pilot projects that were developed by CBS and Members and promoted by the Secretariat to facilitate the migration. The Association was pleased to note that ECMWF developed a web-based verification service for BUFR/CREX data.

4.5.2.4 With a view to facilitating the migration and in a more general way the conversion of data representation forms, the Association endorsed the recommendation of the WG-PIW that:

- The RTHs facilitate the step-by-step migration by assisting in the definition of arrangements for the migration for the NMCs within their zone of responsibility, and by monitoring the exchange of TDCF bulletins and reports on the GTS;

- The RA VI WIS Data Collection and Product Centres (DCPCs) or the Global Information System Centres (GISCs) provide services to facilitate the conversion of data representation forms for the NMCs within their zone of responsibility.

The Association recommended that the focal points of the RA VI RTHs coordinate this facilitation of the step-by-step migration with TT-RMTDCF.

Metadata for WIS

4.5.2.5 The Association noted with appreciation that Météo-France had developed an application, made available to all potential GISCs and DCPCs, for the conversion of the GTS operational information into metadata for WIS operation. The Association supported the CBS plan to develop, as a matter of priority, guidance material and some metadata entry and management tools to enable NMHS to start to create the required metadata.

4.5.3 Operation-critical data exchange and management

GTS implementation and plan

Status of the Regional Meteorological Telecommunication Network (RMTN)

4.5.3.1 The Association noted that the majority of the Regional Meteorological Telecommunication Network (RMTN) links in RA VI, mainly in the western part of the Region, were running over the Regional Meteorological Data Communications Network (RMDCN) using modern technology. The overall performance of the managed network was very good, meeting or surpassing the current requirements. In other parts of the Region, including the south-east and east, the RMTN was mostly running over traditional telecommunication point-to-point circuits or via the Internet, with overall unsatisfactory reliability and many of the circuits, specified in the plan for the RMTN in the eastern part of the Region, were not implemented.

4.5.3.2 The Association recalled that the RMDCN was managed by ECMWF on behalf of the network members, and supplied under contract by Orange Business Services (formerly known as EQUANT). Most RMDCN members have access links with some form of back-up. Twelve centres have Mission Critical System with diversely routed, dual access lines with hot failover. For most centres, upgrading to a higher speed connection is straightforward, quick and flexible. Current access speeds range from 128Kb/s to 4 Mb/s. ECMWF access speed was upgraded to 50Mb/s. The RA VI RMDCN successful migration from Frame Relay to IP VPN MPLS was completed in June 2007.

4.5.3.3 The Association stressed that the current RMDCN contract provides good value for money and that the MPLS architecture is adequate for the moment, but the provision of the RMDCN service will have to be reviewed in the light of the development of WIS. In the next two

years the requirements for the next-generation RMDCN will have to be defined and different scenarios for the evolution of the network will be investigated to ensure that an enhanced network, supporting the WIS activity, should be in place by 2012/2013.

4.5.3.4 The Association noted with concern that a significant number of Region VI countries had not yet joined the RMDCN: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Cyprus, Georgia, Israel, Kazakhstan, Malta, , Monaco, Montenegro, the Republic of Moldova, the Syrian Arab Republic and Ukraine. Some countries are actively attempting to join, but there are financial and technical barriers

Expansion of the RMDCN

4.5.3.5 The Association noted that the current RMDCN includes five sites outside RA VI and new requests to join are expected. A significant RMDCN increase may introduce flexibility problems and may require more resources for managing the network. It also noted that the ECMWF Council had approved in 2008 the criteria for the expansion of RMDCN, to include centres in the following categories of Members:

- ECMWF Member States and Cooperating States;
- RA VI Members not yet connected to RMDCN;
- IMTN centres, including future GISCs;
- Centres outside RA VI with GTS connection to RA VI centres, upon request of RA VI Member concerned.

4.5.3.6 The last session of the RMDCN Steering Group (Vienna, 2008) noted that several questions concerning the future RMDCN still require attention, such as the new services that can be offered by the RMDCN and how these services can be implemented, the implementation and operation of the WIS, the impact of the future GISCs and DCPCs on the RMDCN in term of performance and traffic pattern and the need to prepare with ECMWF a new procurement for the RMDCN. The meeting discussed the composition of the Steering Group and recommended that the composition takes into account the WIS organization and includes representatives of known potential GISCs, DCPCs and NCs. Experts from WIS Centres located in other Regions connected to the RMDCN may be invited to assist to the meeting. Taking into account these considerations, the session requested the Management Group to reinstate the RMDCN Steering Group as a subgroup of a relevant Task Team under the Working Group TDI.

Improved Main Telecommunication Network (IMTN)

4.5.3.7 The Improved MTN (IMTN) comprises two interconnected telecommunications networks. The IMTN Network I (also referred as Cloud I) was established in 2003, interconnecting MTN links between Exeter, Melbourne, Tokyo and Washington. Network II (also referred as Cloud II) was basically the RA VI RMDCN. The providers of Cloud I have served notice that the technology (Frame Relay) must be replaced following a general trend among technology providers across the world. Currently, seven IMTN centres (Argentina, Australia, Brazil, Egypt, Kenya, Senegal and the United States) are not connected to RMDCN. Several IMTN centres, especially those connected to Network I, are negotiating or considering their adhesion to Network II (e.g. Washington, Melbourne, Brasilia, etc.).

Satellite Broadcast

4.5.3.8 The satellite broadcasting systems in Europe have transferred to the DVB technology allowing a significant increase in capacity and reliability. The following satellite systems are included in the RMTN plan:

- EUMETCast (MDD), operated by EUMETSAT;

- RETIM2000 operated by France (via EUMETCast from February 2010);
- DWDSAT operated by Germany (via EUMETCast);
- METEOINFORM operated by the Russian Federation;
- NUBIS operated by Italy.

Almost all RA VI Members are equipped with EUMETCast receiving systems. Météo-France has started a project to migrate RETIM Service on EUMETCAST. Double dissemination is foreseen between February and August 2010.

4.5.3.9 The Association noted with appreciation that the 63rd EUMETSAT Council decided to establish the EUMETCast Basic Meteorological Data (BMD) service as an operational service at no cost for RA VI Members. The BMD service comprises a broad set of meteorological data especially useful for developing countries. Due to the continuous support of EUMETSAT, the BMD service is widely accepted. The content and necessary bandwidth for the dissemination of the data is subject to biannual review by EUMETSAT working groups.

Internet and other networks

4.5.3.10 All the RTHs and the vast majority of NMCs in Region VI had access to the Internet, with several centres enabling access to their servers for provision of data and products. Tests coordinated by ECMWF and using IPSec Virtual Private Network (VPN) over the Internet had taken place between some centres. While the results were very positive other technologies such as DMVPN (Cisco-based Dynamic Multipoint Virtual Private network) has emerged and is also being tested by ECMWF as a possible main backup mechanism for RMDCN. Most of the RA VI centres had access to the Internet at speeds ranging from 256 Kbps to one Gbps for:

- Reception of additional information which does not come over the GTS;
- Provision of information within countries as well as for other NMCs;
- Arrangement of the GTS circuits or their backing up;
- Observation data collection in the national network;
- Provision of Information to the public and the private sector.

4.5.3.11 Data collection over Region VI is generally satisfactory and exceeds the results of other Regions. However, in the south-eastern part of the Region, the results of data collection are significantly lower than on average over the Region. The total availability is 95 per cent as compared with expected availability. The majority of countries in this part of the Region changed or are changing to the use of cellular communications (usually GPRS or occasionally GSM) and the Internet resulting in a significant reduction in costs of data collection. However, the reliability of data collection became lower, as under extreme circumstances, these networks experience overloading and even stop functioning.

4.5.3.12 With respect to the use of the Internet, the Association re-affirmed the importance of CBS updated technical guidance for the efficient use of the Internet with minimized operational and security risks. It emphasized that the Internet plays an increasingly important role for access to and delivery of a wide range of data and products and for complementing the GTS. With particular importance for smaller NMHSs, the Internet provides the means to use the WIS Data Discovery, Access and Retrieval service. The Association urged all NMCs to implement the required facilities for accessing the Internet, including VPN connections with other WWW centres, in particular the RTH.

4.5.3.13 Other networks and links are used to exchange operationally important data, such as satellite, weather radar and lightning detection data. Some of these informal networks and their voluminous traffic have been included in capacity planning documents for RMDCN in preparation of migration to full operational status. Others such as the ATD lightning detection network have different and demanding latency requirements that RMDCN cannot meet and will persist separately.

Amendments to the *Manual on the Global Telecommunication System* (WMO-No. 386), Volume II, Region VI

4.5.3.14 The Association agreed on the following amendments to the Manual on the GTS, Volume II, Region VI as follows*:*

- To delete the circuits Moscow–Helsinki, Sofia–Ankara, Sofia–Athens, Sofia–Larnaca, Baku–Tbilisi, Kiev–Kishinev and Kiev–Minsk from the RMTN plan;
- To add the circuits Moscow–Almaty, Moscow–Bucharest, Moscow–Kishinev, Offenbach–Belgrade, Sofia–Podgorica and Sofia–Sarajevo into the RMTN plan;
- To include Kazakhstan in the zone of responsibility of WMC/RTH Moscow;
- To delete “Serbia and Montenegro” from the zone of responsibility of RTH Sofia;
- To include Bosnia and Herzegovina, and Montenegro in the zone of responsibility of RTH Sofia;
- To include the satellite distribution system EUMETCast/BMD-RA-VI into the RMTN plan.

4.5.3.15 The Association agreed that the RTT and radio-facsimile broadcasts operated in Region VI are no longer required for the distribution of data and products in the Region, in particular since the Region is covered by several satellite distribution systems. The Association recommended to delete all references to these RTT and radio-facsimile broadcasts from the Manual on the GTS, Volume II, Region VI, in particular in paragraphs 3.7.4 and 3.9 of Part I.

4.5.3.16 The Association requested the Secretariat to amend the Manual on the GTS accordingly.

Support to early warning systems and operations

4.5.3.17 With respect to the development of Tsunami Early Warning Systems in several sea and ocean rims (e.g. Caribbean, North Atlantic, Mediterranean), under the mandate of the UNESCO/IOC and in coordination with WMO, EC-LXI re-affirmed the effective capabilities of the WIS-GTS, including the essential operational role of NMCs of NMHSs, as a crucial WMO contribution to the effective exchange and distribution of early warning and related data. EC-LXI was informed of the benefits of using the Common Alerting Protocol (CAP, ITU Recommendation X.1303), which is a content standard designed for all-hazards and all-media public alerting, for the dissemination of weather, climate and water related alerts and warnings. EC-LXI concurred with CBS that wide implementation of CAP will contribute to and facilitate the support of a virtual all hazards network within the WIS-GTS. The Association invited RA VI Members to ensure that the implementation of CAP benefits all user communities.

IGDDS development and implementation

4.5.3.18 The Association acknowledged the distribution of space-based data and products in near real-time through Digital Video Broadcast (DVB) systems within the Integrated Global Data

Dissemination Service (IGDDS), as an essential operational component of the WIS architecture. It expressed its appreciation to EUMETSAT for expanding the EUMETCast service over the Region and providing efficient access to a wide range of satellite data and products from EUMETSAT and other operational and R&D satellite operators, as well as to non-satellite data and products from several WMO Members. It also welcomed the MITRA service operated by the Russian Federation over Region VI and part of Region II. The Association stressed the need to ensure end-to-end robustness of these systems and recalled the complementary role in this respect of the GTS and of the Internet to meet the various operational and other needs. It highligfhted the need to adopt the WIS metadata standards in order to ensure full interoperability within the WIS and the GEOSS. The Association further noted that the DVB-S dissemination means promoted through IGDDS had the potential to serve a wide range of applications and welcomed the expansion of this concept to other Societal Benefit Areas through the GeoNetCast initiative. It requested the Management Group to consider the establishment of a subgroup on IGDDS as part of a relevant Task Team under the Working Group TDI.

4.5.3.19 The Association welcomed the expansion of the EUMETSAT Advanced Retransmission System (EARS) that had served as a pilot for the global network of Regional ATOVS Retransmission Services (RARS) providing fast delivery access to satellite soundings over more than 60 per cent of the globe, which resulted in a significant benefit for Numerical Weather Prediction. The Association supported the initiation of a new phase of the RARS project aiming at the fast retransmission of hyperspectral sounder data from the NPP (CrIS) mission.

Operational Information Services, including Monitoring

4.5.3.20 The Association supported the continuous efforts made in improving Operational Information Services, and encouraged NMHSs in Region VI to access the updated WWW operational information, including WMO Publications Nos. 9 and 47, and monitoring results on the WMO Web server for its use, review and updating. The Association particularly stressed the need to mitigate the deficiencies in updating the Volumes C.2 and D of WMO Publication No. 9, in particular as regards the transmission programmed of satellite distribution systems. It also urged RTHs and other WIS centres to join the pre-operational phase of the Integrated WWW monitoring (IWM), as developed by CBS.

Climate-related data exchange

Monthly CLIMAT and CLIMAT TEMP reports

4.5.3.21 The Association urged Members to further increase their efforts in providing monthly surface reports from all CLIMAT stations in a timely and regular manner as stipulated by WMO regulation standards and practices, as well as their cooperation in providing historical daily data sets needed for the compilation of the World Weather Records Data Sets.

4.5.3.22 The Association noted the thirteenth session of GCOS/WCRP AOPC-XIII (Geneva, Switzerland, April 2007) conclusion that CLIMAT TEMP have very limited value for ongoing climate research purposes and was no longer required for GCOS purposes, taking into account improvements in collection, exchange and quality control of the daily TEMP messages; the Hadley GUAN Monitoring Centre (MC) had already ceased its CLIMAT TEMP monitoring activities in 2007. The sixtieth session of the Executive Council requested CCl to assess all the impacts of a possible discontinuation of CLIMAT TEMP and, if a decision on discontinuation were reached, to notify CBS for required operational arrangements and NMHSs, users and instrument manufacturers.

4.5.3.23 The Association welcomed the decision of the Executive Council on this matter and appreciated the ongoing efforts by CCl and the Secretariat in evaluating the impact of possible discontinuation of CLIMAT TEMP in view of a final decision to be taken at the upcoming CCl–XV session.

4.5.4 Non real-time data exchange and management

Data Management Applications

Interfacing Climate Data Management System with WIS

4.5.4.1 The Association was pleased to note that WMO is promoting and facilitating the interfacing of Climate Data Management Systems with WIS. This should enable NMHSs to achieve inter-operable interface for climate Data Access and Retrieval through WIS. The Association was pleased to note the increased collaboration between Members in and outside the Region for the provision of modern Climate Data Management Systems (CDMSs) and their installation by NMHSs. This should allow NMHSs to benefit from the increased capacity and functionalities of modern data management technology allowing better climate data management and services.

Data Rescue and Digitization of Climate Records

4.5.4.2 The Association reiterated the importance of the WMO Data Rescue project (DARE) in safeguarding, digitizing and making available historical climate archives for the benefit of the Members in the Region as well as globally. It called on all Members to continue their efforts in accelerating the digitization process of old climate records. In addition, the Association encouraged both existing and future Regional Climate Centres (RCCs) to provide, where acceptable to Members, an alternative secure database system for duplication of Members' data as recommended by CCl. The Association took note with appreciation of the progress in rescuing and digitizing historical climate records in the Region.

4.5.4.3 The Association noted with satisfaction the progress made in the ongoing Mediterranean Data Rescue initiative MEDARE (http://www.omm.urv.cat/MEDARE/index.html), which aims at developing a high quality long term climate data sets in view of supporting climate change research and adaptation in the Greater Mediterranean Region (GMR). It thanked Spain for the support it provided for the organization of the first international workshop on Data Rescue and Digitization of Climate Records in the Mediterranean Basin, 28–30 November 2007 at which the MEDARE initiative was launched, as well as for hosting the MEDARE Website at the University of Rovira i Virgili in Tarragona.

4.5.4.4 The Association noted with appreciation the involvement of the majority of NMHSs in the Mediterranean region in MEDARE and their strong technical support and commitment by providing experts membership in its working structure. The Association urged Members to continue their support to MEDARE and participate actively in collecting the necessary climate Metadata needed for the initiative as well as working collectively with the Secretariat to develop an optimal mechanism for sharing data and information historical climate records in accordance with WMO Resolution 40 (Cg-XII) on data exchange and for buidling technical capacity in the countries in need within the Greater Mediterranean Region.

4.5.5 Requirements from special programmes and projects

THORPEX Interactive Grand Global Ensemble

4.5.5.1 The Association recognized that the THORPEX Interactive Grand Global Ensemble (TIGGE) was paving the way towards the next generation operational forecast system and that the data transfers required to utilize TIGGE presented significant challenges for the development and implementation of WIS. It noted the success of utlitizing the Internet within the WIS framework in order to meet the needs of TIGGE and the positive contribution of TIGGE to the refinement of WMO GRIB to GRIB II.

International Polar Year

4.5.5.2 The Association recognized and appreciated the scope of the effort during the International Polar Year to advance understanding and prediction of the components of the Earth

System. It requested that RA VI Members continue to exchange appropriate IPY data sets and legacy measurements through the GTS and to archive observations, given that many of the special measurement campaigns were of short duration.

Coordination with related international projects (GEOSS)

4.5.5.3 The Association concurred with the Executive Council in emphasizing the important role WIS has to play as a WMO core contribution to the GEOSS. It noted the mutual benefits made available by the interoperability arrangements common to WIS and GEOSS, enabling WMO Members to have access to other GEO data and products, while facilitating the further distribution of weather, climate and water data.

INSPIRE and Global Monitoring for Environment and Security (GMES)

4.5.5.4 The Association invited the UK Meteorological Office to continue representing RA VI in the INSPIRE work programme and requested the Technology Development and Implementation Working Group to keep the development of the INSPIRE initiative under review by the establishment of a Task Team on INSPIRE. Noting that the INSPIRE Directive framework was being passed into national legislation, it recommended to develop wider expertise in the technical standards underpinning WIS and INSPIRE. The Association also encouraged Members to involve individual experts and their NMHSs as Legally Mandated Organizations (LMOs) and establish a consensus approach through international groups such as EUMETNET and RA VI, which would be recognized as Spatial Data Interest Communities (SDICs).

4.5.5.5 The underpinning technologies of GMES for the discovery and access to data products are the same as those of WIS and INSPIRE. The Association agreed that the timely implementation of WIS would be an effective way of contributing to GMES services and preventing unnecessary duplication of effort within RA VI.

4.6 ENHANCED CAPABILITIES OF MEMBERS IN MULTI-HAZARD EARLY WARNING AND DISASTER PREVENTION AND PREPAREDNESS *(agenda item 4.6)*

Disaster Risk Reduction Programme Strategy and Implementation Framework

4.6.1 The Association recalled that Fifteenth Congress approved the strategic goals of WMO in disaster risk reduction, derived from the Hyogo Framework for Action (HFA). The Association further noted that Fifteenth Congress approved the Disaster Risk Reduction (DRR) Programme implementation framework, built upon five major thrusts: (i) modernization of NMHSs and observing networks; (ii) implementation of national operational multi-hazard early warning systems; (iii) strengthening of NMHSs capacity for maintaining hazard databases, analysis in support of hydrometeorological risk assessment tools; (iv) strengthening NMHSs cooperation with civil protection and disaster risk management agencies; and (v) coordinated training and public outreach programmes. This action plan would be implemented through coordinated regional and national projects, leveraging activities of the WMO network and external partners.

4.6.2 The Association noted the outcomes of the country-level fact-finding DRR survey conducted in 2006 with 92 per cent response from RA VI, providing a benchmark of NMHSs' capacities, requirements and priorities to support disaster risk management. The Association requested that the results of the survey should be one of the main drivers for the development of the WMO national and regional DRR-related projects undertaken by WMO Programmes, constituent bodies and with external partners.

4.6.3 The Association also noted the results of the RA VI WMO Regional-level Disaster Prevention and Mitigation Programme Survey conducted by the Working Group on Disaster Prevention and Mitigation (RA VI WG DPM) in 2007 and the outcomes of the follow-up meeting held in March 2008, which recommended the development of a pilot project to strengthen organizational and operational capacities of NMHSs and their cooperation with disaster risk management agencies and other stakeholders.

Provision of hazard information and analysis for risk assessment and planning

4.6.4 The results of the country-level survey in RA VI confirmed that over 42 per cent of NMHSs responding to the survey in RA VI requested guidance on standard methodologies for monitoring, archiving, analysis and mapping of hazards. The Association was informed of initiatives of the Commission for Hydrology (CHy), the Commission for Agricultural Meteorology (CAgM), the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) and the Commission for Basic Systems (CBS) (in collaboration with the Commission for Climatology (CCl) and the Commission for Atmospheric Sciences (CAS)) in developing such guidelines for floods, droughts, storm surges and other meteorological hazards, respectively. The Association was informed of the request of EC-LXI that good practices approach be followed at the first stage of the work of the technical commissions towards the development of standard methodologies on hazard data, metadata and mapping tools. In this regard, the Association:

(a) Emphasized that the guidelines developed by the technical commissions first be tested and operationalized through national risk assessment and DRR pilots, as appropriate;

(b) Noted that guidelines for drought and flood hazard data analysis are being implemented through a WMO/United Nations Development Programme (UNDP) partnership project funded by the European Commission DG Enlargement for eight countries in south eastern Europe, under the framework of the “South Eastern Europe Disaster Risk Management and Adaptation Programme (SEEDRMAP),” involving the World Bank, the International Strategy for Disaster Reduction (ISDR), WMO and UNDP;

(c) Encouraged Members to ensure that their NMHSs establish mechanisms and methodologies for the provision and sharing of meteorological, hydrological, climate hazard data and metadata, analyses, value-added information and technical expertise;

(d) Agreed to work with technical commissions and other relevant agencies in matters related to hazards analysis to support risk assessment in RA VI.

4.6.5 The Association noted that the ANADIA (Assessment of the Natural Disaster Impacts on Agriculture) task force (Italy 2006) provided a much needed framework for assessing the impacts of natural hazards on agriculture. The Association expressed its appreciation to the Italian Cooperation for funding an ANADIA case study on droughts and floods in Mali.

4.6.6 The Association noted that some Members are exploring plans for renewing their nuclear energy plans. In this context, NMHSs are requested to contribute hydrometeorological information for improving safety, selection of location and operations of nuclear facilities. Stressing the need for continuing collaboration with the International Atomic Energy Agency (IAEA) in relation to its current revision of their Safety Guide: “Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations”, the Association:

(a) Urged Members to support the review and update of relevant WMO technical publications, and to arrange training on disaster risk reduction in this area;

(b) Requested relevant technical commissions concerned to address this matter, specifically with respect to reviewing WMO Technical Note No. 170.

Multi-Hazard Early Warning Systems (EWS) and Emergency Response Operations

4.6.7 The Association was informed that 84 per cent of disasters caused by natural hazards in RA VI are linked to meteorological-, hydrological-, and climate-related events. In reference to the outcomes of the country-level DRR survey, the Association noted that over 80 per cent of NMHSs in RA VI considered that upgrading and improving operational forecasting and warning services would enhance their disaster risk reduction capacity within their countries. In light of these needs, the Association:

(a) Re-emphasized the continuing need to improve NMHSs technical capacities and methodologies for the generation of warnings particularly stressing technical development projects related to key hazards identified in the country-level survey for RA VI;

(b) Stressed that flash floods lead to significant impacts in this Region and emphasized the need for strengthening NMHSs' technical capacities in this area;

(c) Noted that guidelines covering various aspects of service delivery and particularly on exchange of warnings were available on the PWS Website (www.wmo.int/pws);

(d) Recognized the significant work done to assess heat waves in Europe through the WHO Euroheat project in a multidisciplinary manner based on partnerships between meteorological, health, research, emergency response, social and surveillance communities. The Association appreciated the efforts of the NMHSs that contributed to the success of this project and to the development of WHO Guidance on development of Heat-Health Action Plans;

(e) Re-emphasized the need to strengthen the cooperation between meteorological, hydrological and climatological services to provide information alerts and warning to population and decision makers, for risk management and planning, prevention and reconstruction. It pointed to the European Flood Alert System (EFAS) as an example of such cooperation, in which more than 20 NMHSs participate actively. The Association also noted with interest the advances in the development of the project Sava HYCOS, as the hydrological component within the framework of the South Eastern Europe Disaster Risk Management Initiative and progress in creation of the integrated system for the forecasting of flash floods for the basins of the Oka and Kuban rivers;

(f) Noted the progress made towards the development of a Coastal Inundation Forecasting and Warning System (CIFWS), and reinforced the importance of an integrated effort for developing and improving forecasting and warning capabilities and service delivery in coastal risk reduction by strengthening the existing cooperation between JCOMM, CHy and CAS;

(g) Noted the progress with the establishment of the Drought Management Centre for South-eastern Europe (DMCSEE), in active collaboration with the United Nations Convention to Combat Desertification (UNCCD). The Association congratulated Slovenia on being chosen to host the Centre and requested the Secretary-General to continue to assist and technically support the DMCSEE. It noted that through the SEEDRMAP, DMCSEE was supported to deliver training in eight countries in SEE;

(h) Noted with interest the information provided by the Russian Federation relating to positive experiences in hail suppression using advanced rocket technology and recommended that the Working Group on Technology Development and Implementation study the new opportunities in that field.

4.6.8 Following the request from the Executive Council at its fifty-seventh session, the Association was informed of demonstration projects with a multi-hazard approach and documented good practices, including: (i) the Bangladesh Cyclone Preparedness Programme; (ii) the Cuba Tropical Cyclone Early Warning System; (iii) the France Vigilance System; and (iv) the Shanghai Multi-Hazard Early Warning System and Emergency Preparedness Programme. It appreciated Members' efforts for the documentation of those four cases and the contributions of France for hosting the Second Experts' Symposium on Multi-Hazard Early Warning Systems (MHEWS-II), in Toulouse, France, from 5 to 7 May 2009. The Symposium finalized the first guidelines on "Capacity Development in Multi-Hazard Early Warning Systems, with Focus on Institutional Coordination, Collaboration and NMHSs," based on lessons learned from those documented good practices and other examples of end-to-end early warning systems. The Association:

(a) Reiterated the need to ensure that the guidelines were utilized in training workshops for technical development projects to establish demand for information from NMHSs within the national early warning system and disaster risk management planning and preparedness, and to develop Members' operational collaboration between the NMHSs and disaster management agencies;

(b) Noted the cooperation of developed countries in the Region and other Regions to share their good practices and lessons learned, as well as stressed benefits realized by those countries through their engagements in the process;

(c) Requested that lessons learned from the application of the guidelines should be documented and shared to facilitate the scaling up to other countries;

(d) Noted that the guidelines would be used in the multi-hazard early warning system training workshop in Pula, Croatia, 1–3 October 2009, as part of a WMO-UNDP project funded by the Directorate General Enlargement of the European Commission under SEEDRMAP;

(e) Requested the Secretary-General to facilitate documentation of other good practices in multi-hazard early warning systems identified through MHEWS-II and urged its Members to engage partners to support documentation of the good practices, including transboundary collaboration in early warning systems.

4.6.9 The Association recognized the impacts of sand and dust storms on health, transportation, agriculture, and the environment. Thus, the Association noted with appreciation the progress in developing an Implementation Plan for the WMO project on Sand and Dust Storm Warning, Advisory and Assessment System (SDS-WAS) and thanked Members of Region VI for their efforts to develop the regional SDS-WAS node for Northern Africa, the Middle East and Europe. The Association especially thanked Spain for hosting this regional centre and for capacity-building efforts that establishes new dust aerosol optical depth measurement sites in Northern Africa. Furthermore, the Association:

(a) Urged Members with operational and/or research models that predict dust content to participate through contributing their forecast products to the regional node in a common format and by making them available to partners in real time;

(b) Welcomed the developing partnership between the WMO and the European Space Agency to explore the potential for supporting the WMO SDS-WAS programme in satellite data assimilation, modelling and user-interface activities such as developing and then distributing in near real-time satellite data products tailored to the specific needs of the SDS-WAS community of practice;

(c) Urged the cooperation of CAS and CBS so that a rapid transition from research to operational forecasting can occur and the real-time exchange of aerosol observations for data assimilation, nowcasting and verification can be expanded;

(d) Supported the Secretariat plans for organizing workshops and training sessions for countries in the Region that are potentially impacted by sand and dust, but do not yet have adequate sand and dust forecasting information.

4.6.10 The Association recalled its consultation with UNESCO and IOC in May 2006, related to the Comprehensive Nuclear Test-Ban Treaty Organization's (CTBTO) operation of an advanced global seismological observation network, which had the potential to contribute significantly to the detection of a tsunami threat. The Association recalled that WMO had agreed with UNESCO-IOC that coordination with the CTBTO should be continued, with a view to promoting the development of the CTBTO seismic observation system into a public service-oriented system that would contribute data freely and timely in support of disaster prevention and mitigation.

4.6.11 Recognizing that storm surges are not only caused by tropical cyclones but may also be originated by extra-tropical systems and other causes, the Association requested the Secretary-General, in consultation with UNESCO/IOC, to expand and facilitate the development of storm surge watch schemes for regions subject to extra-tropical systems, including in RA VI.

4.6.12 The Association recognized that sea-level observations are critical for enhancing storm surge forecasting and thus contribute to the storm surge watch schemes and tsunami prediction. It therefore requested that efforts be made, by all concerned in the Region, to ensure that in situ and remote sensed sea-level observations are routinely collected and disseminated via the GTS, in support of coastal marine hazard warning services, including in particular for storm surges and tsunamis.

4.6.13 The Association recognized the strengthened collaboration between WMO and UNESCO/IOC following the 2004 Indian Ocean Tsunami, for the development of tsunami warning systems. It acknowledged that WMO initiatives in Multi-Hazard Early Warning Systems demonstration projects, for strengthening the operational cooperation of NMHSs with disaster risk management agencies, would be instrumental in strengthening tsunami early warning and mitigation system capabilities in countries in the North Eastern Atlantic, the Mediterranean and Connected Seas (NEAMTWS).

4.6.14 The Association noted with appreciation the development by the EUMETNET of the European Multi-services Meteorological Awareness (EMMA) Programme of the METEOALARM System. METEOALARM provides pan-European alert information for a variety of weather parameters, understandable for a variety of users from the private and public sector. The Association noted that the official authoritative provider of warning information were the NMHSs and that the aim of METEOALARM was to facilitate the access to the respective warning pages of the NMHSs of the participating Members through a web portal. The Association further noted that the benefits achieved through METEOALARM included the raising of the public awareness and the harmonization of the Members' procedures in the provision of warning services.

4.6.15 The Association noted the strong linkage between the WMO Severe Weather Information Centre (SWIC) Website and METEOALARM and recognized the importance of this collaboration in contributing to cross-border exchange of warnings. It particularly noted that the SWIC Website has on its front page a prominent link to METEOALARM. It further welcomed the planned developments to METEOALARM as agreed upon during the European Multiserver Meteorological Awareness (EMMA) Expert Meeting (Geneva, 2009) and requested the Sub-group on Regional Aspects of Public Weather Services (PWS) in RA VI and the Secretariat to ensure that collaboration between SWIC and METEOALARM is maintained and enhanced.

Catastrophe insurance and weather risk management within financial risk transfer markets

4.6.16 The risks of economic damage associated with hydrometeorological and climate-related hazards can be hedged through weather-indexed and catastrophe insurance markets. The Association noted that several NMHSs in RA VI have been successfully supporting these markets, such as Météo-France and the Royal Netherlands Meteorological Institute. The Association was also informed that the SEEDRMAP is also considering establishment of catastrophe insurance mechanisms in South Eastern Europe. The Association:

(a) Acknowledged the request by Fifteenth Congress to the Secretary-General to: (i) document experiences of NMHSs around the world serving catastrophe insurance markets; and (ii) facilitate relevant fora and mechanisms for NMHSs to share their experiences and transfer their knowledge. In this regard, the Association was informed that the guidance documents are to be developed in 2009/2010 time frame;

(b) Stressed the importance of WMO's collaboration with agencies, such as the World Bank and World Food Programme (WFP) to develop an action plan to assist NMHSs in developing countries with serving these markets;

(c) Requested its Members to support the emerging requirement associated with these markets as an opportunity to build services through collaboration and provide relevant information to the Secretariat, as appropriate, to assist in determining further activities of WMO in this field.

Leveraging Cooperation and Partnership to Strengthen the Role and Capacities of NMHSs in DRR

4.6.17 The Association stressed the need for enhanced recognition of NMHSs' potential contributions in disaster risk management by their governments that would translate into resources for building and sustaining NMHSs capacities. The Association noted WMO strategic partnerships with agencies, such as the ISDR, UNDP and World Bank and key agencies that influenced national DRR planning and funding. The Association:

(a) Requested the Secretary-General to continue efforts in development of partnership projects, noting that the NMHSs involved in these projects need significant technical development and operational partnerships with disaster risk management agencies;

(b) Urged the WMO technical programmes, regional technical partners such as ECMWF, EUMETNET and EUMETSAT and constituent bodies to support these projects, as relevant;

(c) Requested the Secretary-General to ensure a coordinated approach engaging all relevant WMO Programmes in these projects.

4.6.18 The Association also recognized the importance of WMO contributions in the ISDR System, particularly in the ISDR Management Oversight Board (ISDR-MOB), ISDR Scientific and Technical Committees, as well as WMO's initiatives in support of the ISDR Global Risk Assessment Report 2009. The Association stressed that the primary issue for these efforts is to raise awareness on the role of NMHSs in DRR that could, in turn, result in investments from their governments for strengthening and sustainability of NMHS capacities. The Association urged the participation of the NMHSs and regional associations in the national and regional DRR platforms, noting the ISDR Secretariat's offer to assist in this regard, as this could lead to securing or increasing the funding for NMHSs through active engagement in the national and regional implementation plans.

4.6.19 The Association recalled the potential increase in hydrometeorological disasters associated with climate variability and change. The Association stressed the importance of the seamless provision of information from weather to climate (monthly to decadal) time scales for climate adaptation and disaster risk management decision making. In this regard, the Association requested its president in cooperation with the WMO Secretariat and other regional bodies, to facilitate development and implementation of DRR and climate adaptation demonstration projects through coordinated approach.

4.6.20 In light of major developments in DRR in RA VI, particularly noting the model partnership projects with the World Bank, ISDR and UNDP in South-eastern Europe (SEEDRAMP) and Central Asia and Caucasus, as well as the proposed structure of the RA VI Management Group and related working groups, the Association recommended the RA VI Management Group to establish a cross-cutting DRR task team, with designated experts from all three regional Working Groups. The cross-cutting DRR task team would: (i) provide technical advice to the development of these model projects; (ii) review lessons' learnt from these projects, and (iii) develop recommendation to the RA VI Management Group for scaling up of these projects as relevant to other countries in RA VI. The Association recommended that the Management Group create a DRR cross-cutting task team under the responsibility of the proposed Working Group on Service Delivery and Partnership, but working closely and interactively with the other RA VI working groups on DRR issues.

4.7 ENHANCED CAPABILITIES OF MEMBERS TO PROVIDE AND USE WEATHER, CLIMATE, WATER AND ENVIRONMENTAL APPLICATIONS AND SERVICES *(agenda item 4.7)*

Public Weather Services (PWS) Programme

User focus

4.7.1 The Association requested Members to keep in view the new Policy Framework for Service Delivery that was being developed by the Executive Council Working Group on Disaster Risk Reduction and Service Delivery (EC-WG DRR&SD), as requested by the Executive Council during its sixty-first session (EC-LXI, June 2009). It noted that the Policy Framework would provide guidance to Members for the development of a user-centred approach to service delivery and also assist in raising the profile of NMHSs with policymakers.

4.7.2 The Association recognized that understanding user needs was a fundamental requirement for the development of effective services. In this regard, the Association commended the work of the Sub-group on Regional Aspects of Public Weather Services (PWS) in Regional Association (RA) VI, and acknowledged the outcomes of the meetings of the Sub-group (Helsinki, Finland, 2008) especially with regard to recommendations aimed at enhancing user focus by Members. The full report of the meeting is available at: http://www.wmo.int/pages/prog/amp/pwsp/documents/RAVI_sub-group_meeting_report_2008_Final_Ver3.pdf.

Improved meteorological and hydrological products and services

4.7.3 Recognizing the varying national circumstances throughout the Region, the Association stressed the importance of developing road forecasting services within member states whether as part of PWS activities of Members, or as commercial activities of the private sector or national hydrometeorological services, as would appropriately serve both the travelling public and professionals responsible for road safety and maintenance. In this regard, it requested Members to send examples of how they deliver road services in their respective countries, to the WMO Secretariat for inclusion in the Public Weather Services Programme (PWSP) Website (http://www.wmo.int/pws/). The aim is to provide information and examples on road forecasting as a reference resource for NMHSs wishing to improve their own road weather services.

4.7.4 The Association recognized the need to further develop the understanding and communication of probabilistic forecasts in a manner that the public understood the forecast confidence and uncertainty. In this regard, the Association requested Members to make full use of the recently published *Guidelines on Communicating Forecast Uncertainty*, PWS-18; WMO/TD-No. 1422.

4.7.5 The Association agreed that user-based service assessment is required as an input for product/service improvement and development of new products and services. It therefore requested Members of the Region to improve on verification as a necessity for improving service delivery and supported the effort by the Sub-group on PWS to provide best examples of current verification schemes for warnings within their NMHSs.

Service delivery

4.7.6 The Association welcomed the recognition by EC-LXI of PWS as the most important vehicle for the communication of outputs of other WMO Programmes and that it should serve all Programmes of WMO as well as NMHSs in the area of service delivery to stakeholders within civil society. It agreed that service delivery should be considered as an essential role of PWS providing the overall mechanism for delivering services to all sectors of society that require services from their NMHS. The Association therefore requested the Secretary-General to assist NMHSs in RA VI to strengthen their PWS Programmes to fulfil this role. The Association also requested that the RA VI Management Group consider establishing a Task Team within the Working Group on Service Delivery and Partnership, to specifically address PWS-related service delivery issues.

4.7.7 The Association endorsed the efforts by the RA VI Sub-group on PWS to develop Nowcasting services. It noted that this need was clearly expressed by NMHSs of the RA VI through the Survey on Improving the Delivery of Public Weather Services, carried out by the PWSP. The Association requested the WMO Secretariat to consider this stated need when planning the activities of the PWSP in assisting NMHSs of RA VI.

4.7.8 The Association encouraged its Members to keep in view the recommendations of the "International Symposium on Public Weather Services: A Key to Service Delivery" (Geneva, Switzerland, December 2007) which will guide the implementation of public weather services programmes and activities of Members, especially in addressing strategic issues contained in the UN Millennium Development Goals (MDGs), the IPCC Nairobi Work Programme and the Madrid Action Plan (MAP).

4.7.9 The Association was informed of the "Learning Through Doing" (LTD) initiative by the PWSP, which involves assisting NMHSs to improve their communication with users and to produce and deliver an improved range of services according to user requirements. The Association noted the successful implementation of LTD in RAs I and III, and agreed that a similar approach could be useful in the development of road weather services and Nowcasting services. It requested the WMO Secretariat to introduce the concept in Region VI as needed.

4.7.10 The Association commended its Members for their support and participation in the WMO Website 'World Weather Information Service (WWIS), at http://worldweather.wmo.int, which won the Stockholm Challenge Award - Environmental Category in 2008. The Website, which is coordinated by Hong Kong, China, currently provides information in Arabic, Chinese, English, French, German, Portuguese, Spanish and Italian languages. The Association urged its Members to promote the use of the information on the Website, as well as increase the number of cities for which they provided forecasts and information for display on the Website.

4.7.11 Regarding cross-border exchange of warnings, the Association commended linking of WMO Severe Weather Information Centre (SWIC) Website to METEOALARM which provides weather warnings for Europe.

4.7.12 The Association noted the increasing demand for seasonal forecasts by the public and other users in the Region. It recommended that attention be paid to developing communication methods for monthly and seasonal forecasts to the public. In this regard, it would be vital to address the question of how to deal with the media in order to ensure communication of forecast trends accurately.

4.7.13 The Association was advised of the Russian Federation's annual publication describing the country's water resources and the high value placed on this product by decision makers and encouraged consideration be given to producing such product for distribution at the Regional level.

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

4.7.14 The Association recognized the "WMO Forum: Social and Economic Applications and Benefits of Weather, Climate, and Water Services" as a useful mechanism in the implementation of the Madrid Action Plan (MAP) and assisting in the development of the WMO Framework on Service Delivery Policy. It encouraged its Members to support the activities of the Forum aimed at developing service delivery by NMHSs as well as carrying out economic assessment of benefits of services to society.

4.7.15 The Association endorsed the planned action by the RA VI Sub-group on PWS to develop a methodology for use by NMHSs in RA VI for assessing socio-economic benefits. It noted that the methodology would be very important in enabling many NMHSs, especially those from less developed NMHSs in the Region, to conduct socio-economic benefits assessments. It was pleased to note that the Finnish Meteorological Institute (FMI), United Kingdom Met Office and MétéoSwiss had carried out such assessments and that their experience and expertise would be vital to the development of the methodology by the Sub-group.

4.7.16 The Association encouraged its Members to contribute decision-support tools and case studies for uploading on the WMO Social-economic Website, http://www.wmo.int/pages/prog/amp/pwsp/SocioEconomicMainPage.htm. The Website serves as a resource for users including NMHSs, emergency managers, governments, and weather and climate agencies. The Association agreed that the Website is an indispensable instrument in assisting NMHSs to develop capacity to assess, quantify and demonstrate benefits of weather, climate and water services to user sectors.

Capacity-building and training

4.7.17 The Association endorsed the focus on service delivery in training activities in public weather services which had taken place since its last session in 2005. These included Nowcasting techniques; media training; Public Weather Services related to the use of GDPFS products; "Learning Through Doing" workshops; and the assessment of socio-economic benefits of Meteorological and Hydrological Services. The Association expressed its appreciation to those Members who had hosted and/or provided support to those training events.

4.7.18 The Association observed that training in PWS should be offered to trainees at various levels on a regular basis so that future members of staff of NMHSs attain basic service delivery skills. As a first step, the Association agreed that training of trainers on subjects related to PWS should be included in the curricula of WMO training centres. It therefore requested the WMO Secretariat to take the necessary actions accordingly.

Marine Meteorology and Oceanography (MMO) Programme

User focus

4.7.19 The Association recognized the importance of direct interaction with and feedback from the marine users and welcomed the results of the JCOMM survey on monitoring the effectiveness of the marine meteorological and oceanographic information produced and transmitted by NMHSs. The results demonstrated the increased demand for user-focused marine meteorological and oceanographic products and services. The Association therefore urged its Members concerned to take the appropriate actions to improve marine meteorological and oceanographic services within their areas of responsibility. The Association also recognized the GMES Marine Core Service development in Europe, which is now beginning to provide operational marine and oceanographic information transmitted by a range of service providers including, but not restricted to, NMHSs.

Improved meteorological and hydrological products and services

4.7.20 The Association recalled that forecasts of ocean wave period and probabilistic forecasts of wave height are essential tools in the generation of warnings of remotely generated swell, which is a major marine weather-related threat for the Small Island Developing States (SIDSs), and that advanced centres in the Region make these products freely available on their Websites. It therefore urged the advanced centres to consider providing technical expertise on the use of the data and deterministic and probabilistic wave forecast products in order to assist NMHSs, including Least Developed Countries (LDCs) and SIDSs, to fulfil their duties in Disaster Risk Reduction.

Service delivery

4.7.21 The Association recalled the coordinated initiative by WMO, the International Maritime Organization (IMO) and the International Hydrographic Organization (IHO) to expand the Global Maritime Distress and Safety System (GMDSS) into the Arctic waters. The Association noted that the sixtieth session of the Executive Council (EC-LX, June 2008) had approved the establishment of five new METAREAs for the Arctic region with the same boundary limits as the corresponding NAVAREAs. The Association further noted the commitment by the following NMHSs in the Region to serve as METAREA Issuing Service as follows:

- Norwegian Meteorological Institute for METAREA XIX;
- Roshydromet for METAREAs XX and XXI.

Noting that the GMDSS for the Arctic region should be fully implemented by 2010–2011, the Association requested the Norwegian Meteorological Institute and the Roshydromet to report on the progress of the implementation of Maritime Safety Information Services to the next RA VI session.

4.7.22 The Association noted with appreciation: (1) the expansion of the GMDSS-Weather Website to include navigational warnings in the various NAVAREAs (http://weather.gmdss.org/navareas.html) and products prepared for the International Navigational Telex (NAVTEX) dissemination (see for example: http://weather.gmdss.org/II.html); and (2) the establishment of the Sea Ice Services Website (http://ipy-ice-portal.com/) for the global sea ice operational information, as an initiative for the International Polar Year (IPY). The Association thanked all the contributors from the Region, particularly Météo-France, which is managing and hosting the GMDSS-Weather Website, and encouraged Members to make optimum use of these tools. The Association urged its Members to ensure the provision of all appropriate metadata in compliance with WIS guidelines and to disseminate the products prepared for the International Navigational Telex (NAVTEX) broadcasting through the Global Telecommunication System (GTS). It also requested the Secretary-General to promote resource mobilization to ensure continued operation and development of these portals.

Quality Management (QM)

4.7.23 Noting that the IMO resolution A.705 (17) stated that common standards and procedures are applied to the collection, editing and dissemination of maritime safety information, the Association recognized the need for the development of a Quality Management System (QMS) for the provision of marine meteorological services for international navigation. The Association therefore urged its Members to implement QMS for the provision of marine meteorological services for international navigation and to document the process in order to share with other NMHSs, with a view to facilitating and expanding QMS implementation.

Aeronautical Meteorology (AEM) Programme

Quality Management (QM)

4.7.24 The Association noted the urgency of implementing a recognized Quality Management System for meteorological services to aviation, which is mandated both by the International Civil Aviation Organization (ICAO) in its forthcoming Amendment 75 to Annex III and the Single European Sky (SES) regulations, and strongly recommended Members who may not yet be compliant with these regulations to:

- Make best use of a Pilot Project on QMS implementation in the United Republic of Tanzania;
- Approach Members that have implemented QMS in the Region for suitable documentation and expertise;
- Form subregional alliances, in particular in the newly independent states not yet partners in Eurocontrol or SES, for mutual pre-audits and exchange of templates and process descriptions.

Service delivery

4.7.25 Regarding the rapid development and implementation schedules for the SES regulations with the underpinning ATM Research Project – Joint Undertaking (SESAR–JU), the Association noted the introduction of Functional Airspace Blocks (FABs), which are to be implemented in the 2013–2015 time frame for Air Navigation Services. The FABs will create strong pressure for the concentration into a seamless, coherent and streamlined regional service provision for aeronautical meteorological services. The Association noted that the SESAR-JU states that it prefers: to deal with as few service providers as possible; an early agreement on regional service delivery mechanism respecting the sovereign rights of Members; and that a fair

and equitable way of sharing of costs recovered for basic infrastructure and services must be concluded as a matter of urgency. It encouraged Members to respond to this need.

4.7.26 The Association noted with interest the emphasis on sustainable air transport in the European Green Sky initiative and encouraged Members in the Region to fully engage with such initiatives, e.g., by:

- Providing to Air Traffic Management relevant meteorological information allowing the reduction of Green House Gas (GHG) emissions by enabling Continuous Descent Approaches, reduced holdings and delays;
- Cooperating with the Green Sky Initiative and the European Aircraft Meteorological Data Relay (E-AMDAR) Programme to promote and support the installation of humidity sensors on commercial aircraft for improved forecasts and warnings;
- Promoting and supporting studies of Contrail and Cirrus formation and their impact on regional climate change through radioactive forcing as part of new climate services.

Capacity-building

4.7.27 The Association noted Resolution 9 (EC-LXI) in relation to Aeronautical Forecaster and Observer Qualifications and Standards. Several Members in the Region may have some difficulty in demonstrating the required competencies and/or academic qualifications outlined in WMO Publication No. 258 and its Supplement No. 1. Thus, the Association strongly requested that Members in a position to do so, continue and increase the provision of relevant training material, as well as arrange for national and international seminars and workshops with a view to ensuring that staff can demonstrate the required competencies and qualifications. The Association further welcomed the decision by EC-LXI to update the relevant WMO Regulations in WMO Publication No. 49, Vol. II and requested the Secretary-General to keep them informed of progress in this matter.

Atmospheric Research and Environment (ARE) Programme

User focus

4.7.28 The Association welcomed the close collaboration of WMO with relevant European Cooperation in the Field of Scientific and Technical Research (COST) Actions and urged WMO to continue participating in these important activities. It noted that this is a very useful way for jointly accomplishing tasks that have been requested by Members. The GAW Urban Research Meteorology and Environment (GURME) Project has been working closely with the COST Action 728, “Enhancing Meso-Scale Meteorological Modelling Capabilities for Air Pollution and Dispersion Applications” and has agreed to host the final COST 728 Management Committee and related expert meeting at the WMO Headquarters in December 2009. The expert meeting will be jointly organized with the PWS Programme with focus on user connection and dissemination, and with EU projects CITYZEN and MEGAPOLI.

Improved meteorological and hydrological products and services

4.7.29 The Association noted that GURME is participating in the European Commission project, MEGAPOLI (Megacities: Emissions, urban, regional and Global Atmospheric Pollution and climate effects, and Integrated tools for assessment and mitigation). WMO is responsible for the task of implementation of integrated tools in mega cities and for encouraging global connections for this project. The Association recommended that Members support this activity.

Agricultural Meteorology (AGM) Programme

User focus

4.7.30 The Association noted that climate change and extreme climatic events are a major production risk and uncertainty impacting agricultural systems performance and management. It therefore welcomed the strategies proposed at the International Workshop on Agrometeorological

Risk Management: Challenges and Opportunities (New Delhi, India, October, 2006), and encouraged the Members to use a combination of locally adapted traditional farming technologies, and seasonal weather forecasts for improving yields and incomes.

4.7.31 The Association acknowledged that the collaboration between members of the CAgM Expert Team on Climate Risks in Vulnerable Areas: Agrometeorological Monitoring and Coping Strategies and COST ACTION 734 proved to be very fruitful since a number of useful recommendations were developed at the Norway Symposium (June, 2008) including: strengthening climate variability/change monitoring; and developing/improving decision support systems and seasonal climate prediction application. The Association appreciated that selected papers from this Symposium appeared in a special issue of *IDÖJÁRÁS* (Vol. 113, No. 1–2, January–June 2009) published by the Hungarian Meteorological Service.

Improved meteorological and hydrological products and services

4.7.32 The Association noted that the fourteenth session of the Commission for Agricultural Meteorology (New Delhi, India, November 2006) adopted "Agricultural products, services and coping strategies to sustain agricultural development both effective short-term daily operational farming decisions and proactive long-term strategic agricultural planning measures", as the theme upon which to focus its activities during the next intersessional period.

4.7.33 The Association complimented the Chairperson of the RA VI Working Group on Agricultural Meteorology and the members of the group for the activities carried out and for the final technical report. The Association expressed its appreciation to the University of Natural Resources and Applied Life Sciences (BOKU) for hosting a meeting of the working group on 24 June 2009 in Vienna, Austria. The Association recommended that the report of the working group be published by WMO and be widely distributed.

4.7.34 The Association agreed that the application of meteorology to agriculture continues to be of high importance to the Region. The Association noted a proposal for the establishment of four Task Teams to contribute to the work of the Working Group on Climate and Water: Economic Impacts on Agrometeorological Information in Europe; Improving Collaboration between Farming Community and Agrometeorological Services; Standards for Agrometeorological Products; and New Agrometeorological Services Related to Climate Change Impacts, and noting the scarcity of volunteer experts, requested that the Management Group consider a single Team with very focused terms of reference.

4.7.35 The Association appreciated holding meetings of CAgM Expert and Implementation and Coordination Teams in conjunction with other institutions or organizations in order to produce quality technical advice in agrometeorology and when applicable disseminate this information though publications. It requested the Secretary-General to continue this collaboration with European institutions, projects, and universities (e.g., COST ACTION, Adaptation of Agriculture in European Regions at Environmental Risk under Climate Change (ADAGIO) and the Central and Eastern Europe Climate Change Impacts and Vulnerability Assessment (CECILIA)).

Service delivery

4.7.36 The Association noted that the World Agrometeorological Information Service (WAMIS) Website (http://www.wamis.org/) continued to assist Members in disseminating their products. Products from 50 countries or institutions were available on WAMIS, and there were over 90 000 visits to the Website in 2008 with a monthly average of 7600 visits.

Capacity-building and training

4.7.37 The Association appreciated the funding by the State Meteorological Agency of Spain (AEMET) to support the Roving Seminars on Weather, Climate, and Farmers in West Africa. Over 35 seminars took place from September 2008 to January 2009 in some countries in West Africa. AEMET is currently funding the second phase of the project in 2009 with coordination by WMO and

has expanded the seminars to seven more countries. The Association urged Members to fund similar seminars.

4.8 BROADER USE OF WEATHER-, CLIMATE- AND WATER-RELATED OUTPUTS FOR DECISION-MAKING AND IMPLEMENTATION BY MEMBERS AND PARTNER ORGANIZATIONS *(agenda item 4.8)*

4.8.1 The Association recalled that the RA VI Strategic Plan accorded high priority on the partnership as a key strategic thrust for the Region. This included close collaboration and resource-sharing between the Members, establishing and increasing the cooperation with the relevant partners within the United Nations system, enhanced cooperation and expansion of the variety of regional and subregional groupings, as well as meteorological societies and the private sector.

4.8.2 The Association encouraged in particular developing further cooperation with financial institutions, such as the World Bank, and broader participation in initiatives and projects supported by the European Union (EU), which provide opportunities for development and enhancement of the hydrometeorological infrastructure and services in the less developed parts of the Region.

4.8.3 The Association welcomed the establishment of strategic partnerships with various UN System Partners in particular UNISDR, FAO, WFP and UNDP.

4.8.4 The Association expressed appreciation for the significant and strategic work being done by the joint office at the European Commission in Brussels, managing the EUMETRep programme created in 2006 by WMO, together with EUMETNET and ECMWF (and with the logistical support of EUMETSAT). EUMETRep is responsible for liaising with the European institutions and representing the combined interests of its Members. EUMETRep pursued its efforts towards raising the profile of the meteorological community among the European institutions. While reaffirming the critical importance of the meteorological services for a proper implementation of a large number of EU policies, EUMETRep initiated a constructive dialogue with many EU partners in order to better define areas of future cooperation in the field of Global Monitoring for the Environment and Security (GMES) (EC DG ENTReprise, EC DG ENVironment and European Environment Agency), aeronautical meteorology (EC DG TREN, SESAR Joint Undertaking and EUROCONTROL), early warnings (EC DG ENV, Civil protection Monitoring and Information Centre, EC DG DEVelopment and EC DG Enlargement), climate research and research infrastructures (EC DG RTD).

4.8.5 The Association strongly supported the continuation of the EUMETRep programme and agreed that the improved status of the meteorological community among the EU Institutions would require even more intense efforts in the future. It further agreed that, while monitoring potential legislative implications and funding opportunities that may arise through the EU processes would remain a critical activity for the EUMETRep programme, maintaining and further improving this partnership would be very demanding for the meteorological community since it will have to match the expectations created by promoting the numerous capabilities.

4.9 ENHANCED CAPABILITIES OF NATIONAL METEOROLOGICAL AND HYDROLOGICAL SERVICES IN DEVELOPING COUNTRIES, PARTICULARLY LEAST DEVELOPED COUNTRIES, TO FULFIL THEIR MANDATES *(agenda item 4.9)*

Capacity-building

4.9.1 The Association recognized the improved coordination that has occurred with the restructuring of the WMO Secretariat and the establishment of the Development and Regional Activities Department (DRA) bringing together the key WMO Secretariat Offices responsible for working with Members at a regional level on NMHS development issues. Furthermore the Association welcomed the further engagement of key partners and donors aimed at improving the capabilities of NMHSs in developing countries. The Association also noted with appreciation the additional staff member in the Regional Office for Europe in response to the Executive Council's request that the regional office be strengthened.

Development cooperation and partnerships

4.9.2 The Association welcomed the success of, and supported the approach taken by, the Resource Mobilization Office (RMO) and Regional Offices of the DRA in focusing strongly on the establishment of strategic partnerships with key organizations which resulted in an increase in the available development-related resources. The Association encouraged the Secretariat to develop further these partnerships, including with the World Bank (WB), various Directorates of the European Commission, UN System Partners in particular UNISDR, FAO, WFP, and UNDP, Rockefeller Foundation and Regional Economic Groupings and also with WMO Members and the corporate sector for delivery of regional scale development projects. In this respect, the Association noted that financing for new and continuing development projects secured through various modalities with the facilitation of the WMO RMO amounted to more than US$ 19 million during 2008. These capacity development programmes are delivered in cooperation with WMO Members and with the major partners mentioned above. (See Annex V of http://www.wmo.int/pages/prog/tco/vcp/meetings_en.html.)

4.9.3 The Association expressed appreciation at the significant and strategic work being supported by some RA VI Members in respect of regional programmes for capacity enhancement of NMHSs in South Eastern Europe, Central Asia, West and East Africa, the Pacific and the Americas, covering some 40 countries. Noting that these regional programmes add significantly to the positive impact of the VCP, the Association urged other Members to work with the RMO to liaise with their aid agencies to seek opportunities for similar national and or regional development projects and programmes.

4.9.4 The Association recognized the efforts being made by RA VI Members and the Secretary-General to assist NMHSs of developing countries in the Region, and LDCs and SIDS outside the Region in the area of institutional and technical capacity-building. The Association requested the Secretary-General and Members to pursue such assistance that would lead to raising the profile of the NMHSs concerned.

Infrastructure and operational facilities

4.9.5 Noting with concern that some of the developing countries in the Region, and many outside the Region, do not yet have the full infrastructure, operational facilities and human resources in terms of observing systems, telecommunications and information technology, the Association urged the Secretary-General, Members and development partners to address these priority areas through further coordinated capacity-building initiatives and aid projects. Improved regional infrastructure and services ultimately benefit the economic well being of all WMO Members. It allows better coordination and delivery of data and products thus positively impacting upon the ability of Members to provide relevant services and protect the safety of the community.

Human capacity development

4.9.6 The Association noted with pleasure the wide range of training activities provided to and by Members in the last four years. It particularly welcomed the activities of the Regional Training Centre in Turkey in providing a wide range of training courses for Members from RA VI and other Regions. The Association encouraged other Members, and organizations such as EUMETCAL and EUMETSAT, to open their training events to all Members from within the Region and where there was capacity, Members outside the Region. The Association was encouraged to learn of the growing use of e-learning in the training activities being offered to and by Members (SATREP Online from EUMETRAIN; UK Met Office Management by e-learning; blended learning courses in aviation forecasting, use of NWP products and application of radar data by EUMETCAL; and the WMO Virtual Laboratory High Profile Training Event). The Association encouraged the Secretary-General, Members and partner organizations such as EUMETCAL and EUMETSAT to strengthen their use of e-learning and support to such activities, particularly in high priority areas such as Aviation Forecasting and Observations, Disaster Risk Reduction, Communications and application of Climate Data and Products.

4.9.7 The Association thanked the Secretary-General for the increased communication provided to Members through the Education and Training Office regarding education and training opportunities and the active collaboration and coordination between the WMO Programmes and institutions such as the WMO Regional Training Centres and Member training institutions. The Association noted the increased coordination and collaboration offered Members more and improved training opportunities.

4.9.8 The Association thanked Members for their direct and indirect contributions to the WMO Fellowship Programme and encouraged Members to continue, if not increase, their support for this important long-term aspect of Human Capacity Development. In addition to increased financial contributions to the VCP(F) programme or secondment opportunities and support, the Association requested Members to liaise with the aid agencies in their countries to seek opportunities for fellowship opportunities for LDCs funded through other Government and aid agencies.

4.9.9 The Association appreciated the ongoing actions by the various task teams to document how Members can demonstrate how their staff meet the aeronautical forecaster competences and training standards and requested the Secretary-General to keep Members informed of developments. The Association noted the pro-active approach to these issues being taken by a number of Members (Finland, France, Germany, Spain and the United Kingdom) and called upon them to continue their valuable assistance to other Members in the region and in other Regions to deal with the issue prior to the November 2013 deadline through the provision of training opportunities and competency assessment material and resources.

Enhancing voluntary cooperation activities

4.9.10 The Association recalled the discussion by EC-LXI on enhancing voluntary cooperation activities. While welcoming the trend towards support for major development programmes reflected above, as complementary and significant contributions to development cooperation activities overall, the Association recognized that the VCP (F) and VCP (ES) mechanisms provide valuable and immediate short-term support to countries to maintain operations while developing long-term development strategies. Noting the generally constant level of financial support to these mechanisms, which in real terms constitutes a decrease (see Annex V of http://www.wmo.int/pages/prog/tco/vcp/meetings_en.html), the Association expressed concern that these mechanisms not be abandoned by donor Members and urged Members to join, continue and increase their support in these areas which are a necessary complement to broader development activities.

4.9.11 The Association further recalled the decision of EC-LXI that after some 40 years in operation, the VCP mechanisms should be thoroughly reviewed by DRA with the assistance of the IPM in the light of changing geopolitical and economic circumstances including the recent global financial downturn. It requested the Secretary-General to look at innovative ways to strengthen the capacity-building activities of WMO over the next biennium with a view to presenting a new concept of effective development assistance to the Sixteenth WMO Congress in 2011.

Resource mobilization

4.9.12 The Association thanked Members for their ongoing support and assistance to the WMO Resource Mobilization Office and the efforts aimed at development of NMHSs, with particular emphasis on the LDCs, SIDS and post conflict countries. The Association welcomed the progress made in the main areas of focus: (1) VCP Programme; (2) Strategic Partnerships; (3) UN System Country Programmes; (4) Assisting NMHSs to find financing opportunities at national level especially using INTAD Networks and through capacity-building; (5) Demonstration of Socio-Economic Benefits of NMHS Products and Services; and (6) Advocacy and Marketing of WMO and NMHSs. The Association expressed its appreciation concerning its Members efforts to increase the extrabudgetary resources to WMO and noted that these funds supplemented assessed contributions and directly assisted in achieving results.

4.9.13 The Association noted the potential for increased interaction with the UNDP and the UN Country Offices in the spirit of “delivering as one UN” in South-Eastern Europe through the jointly

implemented European Commission funded project for Disaster Risk Reduction and also the establishment of a coordinating committee with UN Agencies for this activity and activities in Central Asia and Caucasus.

5. EFFICIENT MANAGEMENT AND GOOD GOVERNANCE *(agenda item 5)*

5.1 INTERNAL MATTERS OF THE ASSOCIATION *(agenda item 5.1)*

5.1.1 Internal matters of WMO

5.1.1.1 The Association took advantage of the Secretary-General's presence at the session to hold a discussion on internal matters of WMO of concern to Members of the Region, particularly in connection with ongoing reorganization of the WMO Secretariat.

5.1.1.2 In his presentation, the Secretary-General informed the Association that the WMO Secretariat structure and organizational changes took place on 1 January 2008, with the goals to: align Secretariat structure to WMO strategic direction, improve integration of plans and programmes, optimize use of resources and streamline management and decision-making.

5.1.1.3 The Secretary-General emphasized that in referring to the WMO Strategic Plan (2008–2011) with three Top-level Long-term Objectives, five Strategic Thrusts and 11 Expected Results, emphasized the need to work closely with Regional Associations and Technical Commissions.

5.1.1.4 In that connection, the Association was informed by the Director of the new Development and Regional Activities (DRA) Department that, within the process of reorganization of the Secretariat, the DRA Department was restructured to implement programme activities towards Expected Results 7 (Enhanced capabilities of Members to provide and use weather, climate, water and environmental applications and services) and 9 (Enhanced capabilities of NMHSs in developing countries, particularly least developed countries, to fulfil their mandates). The DRA Department manages the Technical Cooperation Programme including the WMO Voluntary Cooperation Programme (VCP); the WMO Programme for the Least Developed Countries (LDCs); the Regional Programme; and the Education and Training Programme.

5.1.1.5 The Association was pleased to note that the emphasis the restructured DRA provides for capacity-building and appreciated renewed efforts to organize the Secretariat in line with the approved WMO Strategic Plan.

5.1.1.6 The Association welcomed the further harmonized approach for capacity development activities for Members including technical cooperation, regional activities and human resources development activities expected to be carried out by the Regional Offices.

5.1.1.7 The Association expressed its appreciation to the Secretary-General and the Director of the DRA Department for the information provided as well as the opportunity to consider suggestions for further improvement.

5.1.2 Activities of the Management Group of RA VI

5.1.2.1 The Association acknowledged with appreciation the work of the RA VI Management Group (MG). The Association complimented Mr D. Keuerleber-Burk, president of RA VI and chairperson of the RA VI MG, and the members of the Group for the activities carried out according to its terms of reference, in particular, for guiding the development of the RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011), for monitoring the work of RA VI working groups and rapporteurs, as well as, for the advancement of the WMO Programmes and activities in the Region. The MG also provided guidance for the restructuring of the subsidiary bodies of the Association and for the organization of the fifteenth session of RA VI and the related Technical Conference in an efficient and cost-effective manner.

5.1.2.2 The Association, in recognizing the importance of coordinating its activities, agreed to re-establish the MG of Regional Association VI. The RA VI MG was expected to deal with the areas covered by Expected Results 9, 10 and 11, including capacity-building and partnership, as well as, strategic planning issues. The Group would monitor the activities of the subsidiary bodies of RA VI taking into consideration the optimal use of resources that need to be allocated in accordance with the agreed work programmes and deliverables. The Association noted that the MG should be active throughout the intersessional period and ensure the effective and efficient functioning of the subsidiary bodies. Along with the monitoring functions, the Group should consider proposals and make decisions for the establishment of task teams to address specific priority tasks.

5.1.3 Review of the Subsidiary Bodies of the Association

5.1.3.1 The Association noted with appreciation the information provided by the president on the activities of the RA VI subsidiary bodies during the intersessional period. It expressed its satisfaction of the work done by the working groups and rapporteurs, but noted with concern that some had not been able to perform satisfactorily for various reasons. The Association encouraged Members to provide the necessary support to the designated members of working groups and other working bodies to allow them to conduct efficiently the planned activities.

5.1.3.2 With regard to the future working mechanism of the Association, the Association considered the following general managing principles:

(a) The work structure of the Association should be simplified and aligned better with the new structure of the WMO Secretariat to ensure consistent approach in the implementation of the WMO Programmes;

(b) The overall goal of the established work structure should be the implementation of the Regional Strategic Plan and related Action Plan. Therefore, the resources should be used in accordance with the established key regional priorities and expected results;

(c) The new structure should consist of several core working groups with TORs focused on a sub-set of Expected Results and related deliverables;

(d) The work programmes of the Working Groups should consist of specific tasks designed to implement the Regional Strategic Plan and Action Plan over the intersessional period. The working groups should be given the flexibility to propose to the MG establishment of a manageable number of task teams to address specific tasks, as necessary, for the progress of the work programmes;

(e) Cross-cutting issues should be addressed through coordination and collaboration between the working groups, each of them providing the necessary expertise. The coordination process will be facilitated by the MG.

5.1.3.3 The Association supported the need to align the working mechanism of the Association to the Strategic Thrusts and Expected Results of the WMO Strategic Plan as well as Expected Results of the RA VI Strategic Plan, and agreed to establish the following core RA VI subsidiary bodies:

(a) Management Group (MG);

(b) Working Group on Technology Development and Implementation (WG TDI);

(c) Working Group on Climate and Hydrology (WG CH);

(d) Working Group on Service Delivery and Partnership (WG SDP).

5.1.3.4 Members in the Region will nominate experts to these subsidiary bodies. The core membership of RA VI working groups will be a selected number of nominated experts. The Management Group will review the membership of each of the subsidiary bodies and proposals from the chairs regarding procedures and substructures that will assist in accomplishing the work.

5.1.3.5 The Association agreed on the terms of references of the newly established bodies. In that connection, the Association adopted Resolution 3 (XV-RA VI) – Management Group of Regional Association VI (Europe), Resolution 4 (XV-RA VI) – Working Group on Climate and Hydrology, Resolution 5 (XV-RA VI) – Working Group on Service Delivery and Partnership, and Resolution 6 (XV-RA VI) – Working Group on Technology Development and Implementation.

5.1.4 Volunteerism in the work of Regional Association VI

5.1.4.1 The Association recalled that the Executive Council at its sixtieth session (June 2008) agreed in principle with the suggestions of the presidents of the Commission for Basic Systems and the Commission for Hydrology to award recognition to the experts who volunteered to devote their time to undertake the activities planned by technical commissions and regional associations. It urged the Secretary-General to propose a common scheme for awarding such recognition. The Council also urged Permanent Representatives to facilitate the participation and voluntary contribution of experts, not only from the NMHSs but also from other institutions, to the activities of WMO.

5.1.4.2 In that regard, the Association decided that volunteerism in the work (nomination, performance monitoring and recognition) of the working groups and task teams should receive the required attention and recognition.

5.1.4.3 In this context, the Association expressed its deep appreciation to the chairpersons and members of the working groups and rapporteurs, who had effectively collaborated in carrying out the activities of the Association during the intersessional period, by giving recognition to their valuable work for the regional association.

5.2 EFFECTIVE AND EFFICIENT MANAGEMENT PERFORMANCE AND OVERSIGHT OF THE ORGANIZATION *(agenda item 5.2)*

WMO Strategic Planning – Regional Aspects

5.2.1 The Association noted that WMO has adopted the Results-based Management approach and that the Strategic Plan, the WMO Operating Plan as well as Monitoring and Evaluation are an integral part thereof. It further noted that EC-LX and EC-LXI had endorsed the guiding principles and the schedule for delivering the draft WMO Strategic Plan for the period 2012–2015 by April 2010.

5.2.2 The Association recalled Resolution 11 (EC-LX) which, inter alia, recognized the needs for links between the WMO Strategic Plan, Regional Strategic Plans and National (Members') Strategic Plans, and urged regional associations to ensure their active and timely engagement in the preparatory process of the next WMO Strategic Plan and WMO Operating Plan.

5.2.3 The Association agreed with the recommendations by the sixty-first session of the Executive Council with regard to the overall structure of the next Strategic Plan based on a set of Global Societal Needs (GSN). It also supported the use of the "results chain", i.e. Strategic Thrusts (ST) -> Expected Results (ER) -> Key Outcomes (KO) -> Deliverables -> Activities, as the structure of the strategic planning process.

5.2.4 The Association endorsed the recommendation of EC-LXI to involve regional associations and technical commissions in the development of Expected Results and Key Performance Indicators, Key Outcomes and a manageable number of related performance measurement parameters and to ensure that those are based on Members' needs and adequately reflect the programme areas of the Organization. Such involvement would also facilitate the

establishment of baselines and realistic target setting. Noting the plan of the Secretariat to deliver the first complete draft of the Strategic Plan and Operating Plan by December 2009, the Association requested the newly elected president and Management Group to initiate consultations with Members and ensure that the inputs from RA VI Members are taken into consideration in the development of the next WMO Strategic Plan.

5.2.5 With regard to the GSNs, the Association welcomed the idea of promoting the strengths of WMO and its unique contribution, which should be portrayed with a view to distinguish WMO clearly from other international organizations that also deal with such, or similar, GSNs in their strategic planning and programme delivery. Noting the recommended by EC-LXI for using a brief description of WMO's major achievements illustrated by informative statistics, tables and graphics, to underpin the unique competencies and contribution of the Organization, the Association recommended that this approach should be also used at regional level and requested the Management Group to work on preparing such promotional material.

5.2.6 The Association supported the Council decision for developing separate planning documents that include a WMO Strategic Plan, a WMO Operating Plan and a Secretariat Operating Plan and Budget. A WMO strategic Executive Summary document written in language that would appeal to those outside WMO, particularly those who make decisions related to the funding of NMHSs and the Secretariat should be an additional document.

5.2.7 The Association took note of the Council request to the technical commissions and regional associations to ensure that their future operating plans (goals, deliverables, performance indicators and implementation timelines) would be fully harmonized with the next WMO Strategic Plan, in particular as regards relevant Strategic Thrusts and Expected Results. In this regard, the Association requested the Management Group to initiate consultation with all Members for the revision of the regional Strategic Plan and Action Plan, including validation and update of the regional priorities, as necessary, in order to have a fully consistent version shortly after the adoption of the new WMO Strategic Plan by the Sixteenth Congress.

RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011)

5.2.8 The Association recalled that the fourteenth session of RA VI (Heidelberg, Germany, September 2005) with its Resolution 22 (XIV-RA VI) decided that a Regional Strategic Plan for the Enhancement of National Meteorological and Hydrological Services in Regional Association VI (Europe) (referred hereafter as the RA VI Strategic Plan) should be developed in line with the WMO Long-term Plan. The Association also adopted the RA VI Action Plan for implementation until the time the new Strategic Plan has been adopted. The Association established a task team on the RA VI Strategic Plan and Action Plan tasked to prepare the draft regional Strategic Plan, on the basis of the guidance provided by the fourteenth session, in close coordination with the Management Group.

5.2.9 The Association noted with appreciation the excellent work done by the task team in the preparation of the RA VI Strategic Plan. It noted that the Plan was developed through a broad coordination with the Members in the Region. Inputs were collected by using a comprehensive regional survey and by organizing two Technical Conferences on strategic planning. Thus, the identified regional priorities and regional expected results were based on a broad consensus among the Members of the Association.

5.2.10 The Association noted further that the RA VI Strategic Plan was in full compliance with the WMO Strategic Plan adopted by the Fifteenth Congress in May 2007. This was achieved by using the strategic thrusts and expected results of the global Strategic Plan as a basis and detailing them further in the regional Plan, taking into consideration the Region-specific requirements, priorities and resources.

5.2.11 The Association appraised the adoption of the RA VI Strategic Plan by the president in January 2008 as a remarkable achievement for the Region and commended all those who

contributed to this success. The RA VI Strategic Plan became a showcase for the other Regions in developing their regional Strategic Plans. The Association commended in particular the members of the task team, the Management Group and the president, who were among the major contributors to the successful development of the first RA VI Strategic Plan.

Implementation of the RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011)

5.2.12 The Association agreed that the implementation of the RA VI Strategic Plan should be the main focus of its activities planned for the next intersessional period. It was noted in this regard that the RA VI Strategic Plan would be implemented through a related Action/Operating Plan which should consist of specific work packages and deliverables together with the respective responsible bodies and timelines. The first version of the Action Plan was included as Annex C to the RA VI Strategic Plan.

5.2.13 The Association noted further that the Strategic Plan and Action Plan should be regarded as living documents within an environment of rapidly changing external conditions and emerging new challenges and opportunities. Therefore, the Association agreed that the strategic planning process should be a continuous one and coupled with the monitoring and evaluation of the implementation activities. The monitoring and planning functions should be a major part of the terms of reference of the RA VI Management Group.

5.2.14 Noting the key role played by the working groups in delivering the Regional Action Plan, the Association requested the Management Group to undertake a review of the Action Plan in relation with the establishment of the work programme of the newly formed subsidiary bodies and to ensure consistency between those programmes and the regional Strategic and Action Plans. In that respect, the Association anticipated that the Regional Action Plan would become, in effect, the consolidated work programmes of the working groups.

5.2.15 The Association noted that the Executive Council with its Resolution 11 (EC-LX) strongly recommended that Members develop their national programmes taking into consideration the global and regional Strategic and Operating/Action Plans. In view of this, the Association agreed that the planning process should be considered at three main levels – global, regional and national. It was emphasized that the planning at these three levels should be fully coherent in order to ensure seamless “zooming” in and out through the plans at different level.

5.2.16 The Association noted that the main implementers of the Action Plan were the Members of RA VI themselves. The implementation was mostly done by individual Members or groups of Members, assisted by different WMO working bodies and Secretariat and supported financially by national and/or international financing institutions. Therefore, the Association agreed that the development of national plans/programmes fully coherent with the global WMO Strategic Plan and related regional Strategic Plan was of crucial importance for achieving the established implementation goals. Furthermore, the Association encouraged its Members to use the RA VI Strategic Plan and Action Plan as guidance in aligning their existing, or in developing new national plans for enhancement of their NMHSs. It requested the Management Group to keep track of the availability of national plans/programmes in relation to the RA VI Strategic and Action Plans and provide assistance, as required, to Members who have difficulties in establishing their national plans/programmes.

Outcome of the Technical Conference

5.2.17 The Association took note of the input of the Technical Conference on the implementation of the RA VI Strategic Plan “Developing European NMHSs to Increase Benefit to Society”, that had preceded the session.

5.2.18 The Association noted that the Conference had recognized the need for enhancing the quality of the products and better tailoring to users’ needs, and requested the Management Group

to consider the identified regional challenges in the development of the work programmes of the subsidiary bodies:

- Improvement of the visibility of NMHSs through e.g. socio economic studies;
- Engagement of external stakeholder (EU, GMES, WB, etc.) including also mobilization of resources;
- Harmonization of the data policy in the Region;
- The new requirements for the meteorological community invoked by the Single European Sky (SES) regulations (including quality management requirements);
- Responding to the WCC-3 outcome with regard to provision of climate services (as indicated by presentations from insurance companies and the Hadley Centre);
- Implementation of WIGOS and WIS, through mechanisms such as pilot projects;
- Dialogue with the private sector;
- Collaboration between the hydrological and meteorological communities and involvement of hydrological services in water resources monitoring and assessment;
- Bridging the gap in the capabilities between the hydrometeorological services of the developed and developing countries in the Region, avoiding a possible negative effect of different levels of investment.

5.19 Among the possible approaches to address those challenges, the Conference had considered that RA VI had well-organized cooperation with regional partners, such as ECMWF, EUMETSAT and EUMETNET. Recent examples of capitalizing on those assets for the benefit of all RA VI Members were:

- EUMETCast BMD Service provided at no cost to all RA VI Members;
- EUCOS Quality Monitoring Portal made available to all RA VI Members;
- Operational use of EUMETSAT data for non-EUMETSAT RA VI Members;
- The use of “twinning” mechanisms to support migration to TDCF and the implementation of WIS.

5.2.20 The Association requested that the proceedings of the conference and all presentations be made available to all Members.

6. EMERGING ISSUES AND SPECIFIC CHALLENGES *(agenda item 6)*

6.1 SOCIO-ECONOMIC CHALLENGES *(agenda item 6.1)*

6.1.1 The Association gave its strong support to the work done by the Secretariat and Members in the assessment of the socio-economic benefits of weather, water and climate services. It agreed that its Members should be more actively engaged in such studies and activities in order to demonstrate the full benefit to various user sectors of the products and services in the Region.

6.1.2 The Association recalled that the RA VI Strategic Plan (2008–2011) took due account of the Action Plan developed by the International Conference on “Secure and sustainable living; social and economic benefits of weather, climate and water services”, Madrid, March 2007. It confirmed the commitment of its Members to address the socio-economic challenges in the Region in a way which will bring more benefits to society and economy. In order to achieve this, the Association requested the Management Group, in developing the work programme for the next

intersessional period, to put high priority on the expected deliverables outlined in the RA VI Strategic Plan related to:

(a) Identifying the major user sectors in the various countries in RA VI;

(b) Establishing dialogue and partnership relations with the user sectors to understand their requirements;

(c) Preparing guidance material for the Region on the assessment of socio-economic benefits of services and applications;

(d) Conducting training for the Region on issues related to the socio-economic aspects of their work;

(e) Measuring and documenting the socio-economic benefits of the products and services in RA VI;

(f) Documenting economical models and their compliance with national and international regulations;

(g) Documenting case studies highlighting the socio-economic benefit of products and services in the Region;

(h) Sharing best practices resulting from the above studies and documentations.

6.2 RELATIONSHIPS WITH THE PRIVATE SECTOR *(agenda item 6.2)*

6.2.1 The Association noted that there is an active and growing private meteorological sector in Europe, primarily providing services to fee-paying commercial customers.

6.2.2 The Association noted further that the relationships between the private meteorological sector and the NMHSs were variable and somewhat dependent on the individual NMHS's commercial activities.

6.2.3 Under applicable EU legal framework (the PSI Directive) and consistent with WMO Resolution 40 (Cg-XII), as well as relevant national and international regulations, all NMHSs from EU Members make their essential data available for reuse by the private service providers.

6.2.4 A number of NMHSs of RA VI Members are also members of the economic interest grouping ECOMET. The Association noted with appreciation that ECOMET promotes common practices aimed at ensuring non-discriminatory access to data and products of its members in line with the regulations of the European Commission. It also facilitates the provision of data to the private sector from the NMHSs and in some cases consolidates data packages across the NMHS supply chain. ECOMET supports its members to maintain a "level playing field" with regard to the delivery of commercial services.

6.2.5 Most of the RA VI NMHSs are currently recognized by their governments as the single authoritative voice in their respective countries when it comes to the provision of warnings for high impact weather. However, in other service areas competition between the private sector and the NMHSs may stimulate improvement and more efficiency in service provision for some users. The Association noted, however, that sustained funding of the basic NMHS infrastructure by Members is a necessary condition for further development of services.

6.2.6 The Association, by taking note of the growing private sector for provision of weather, climate and water services to users in the Region, considered the need for initiating or improving the dialogue between the NMHSs and the private service providers. In this regard, the Association agreed that a regional conference would allow for a more complete discussion of this topic and welcomed the offer by the Russian Federation to consider hosting such a conference in 2010 or 2011.

6.2.7 The Association requested the Management Group and the newly established Working Group on Service Delivery and Partnership to keep this issue under review and consult with the relevant stakeholders as appropriate.

6.3 AERONAUTICAL METEOROLOGY *(agenda item 6.3)*

6.3.1 The Association took note of the rapid development of the Single European Sky (SES) and the impact of the new airspace structure on the delivery of meteorological services to aviation in Europe. In particular, the necessary coordination between meteorological air navigation service providers (MET ANSP) belonging to a single functional airspace block (FAB) was seen as the highest priority, and the Association thus urged Members to consider the following steps necessary for such cooperation:

(a) Establishing good working relations with the FAB implementation authorities established by the participating States;

(b) Intense cooperation in a FAB on compatibility, interoperability and national regulations and procedures;

(c) Establishment of the necessary technical and regulatory arrangements for the exchange of meteorological information in support of meteorological watch and issuance of SIGMET/AIRMET and any other emerging trans-boundary data, products and services;

(d) Undertake studies on the feasibility of consolidating Meteorological Watch Offices in line with Resolution 18 (Cg-XV).

(e) Coordinate their efforts and contributions to the SESAR research and development programme shaping the future Air Traffic Management system of the SES.

6.3.2 The Association further noted the implications of regionally harmonized service delivery on cost recovery, and stressed that the cost of harmonizing, maintaining and modernizing the necessary infrastructure for meteorological watch purposes needs to be reflected in any plans for the consolidation of services.

6.3.3 The SES framework should be seen as part of a new Global Air Traffic Management (ATM) concept of operations developed by the International Civil Aviation Organization (ICAO) and the Association thus strongly encouraged those Members not yet included in the SES framework and the new FAB structure to follow these developments closely, and consider the necessary infrastructure and human resource developments in the light of SES implementation. Such planning should benefit from bilateral or multilateral cooperation with meteorological service providers already certified for SES.

6.3.4 To this end, the Association recommended holding a dedicated workshop on SES implementation issues to include also those Members not yet participating in SES in a 2010–2011 time frame.

6.3.5 The Association welcomed the recognition by the European Commission of the need to mitigate the impact of aviation on the environment in general and climate change in particular. Members were encouraged to follow closely this development and to consider ways, e.g. by promoting cooperation with airlines in atmospheric monitoring projects, provision of operational data (e.g. high resolution AMDAR) for the facilitation of so-called continuous descent approaches and possible mitigation of contrail-induced cirrus clouds, to contribute effectively to this initiative.

6.3.6 Noting that for several Members of the Association, meteorological services are provided to aviation by separate entities, typically resorting to the air navigation service provider (ANSP), civil aviation administration (CAA), or Ministry of Transport, the meeting expressed the view that the cooperation with these entities is not always harmonious and effective. Reduced

cooperation may prevent the optimal use of existing meteorological infrastructure and the potential of the NMHS to obtain a fair and equitable recovery of costs for core services, free flow of WMO information to aviation met service providers, duplication of efforts and inefficient services. The Association encouraged all Members in such a situation to establish regular, open and mutually beneficial coordination procedures.

6.4 DATA POLICY *(agenda item 6.4)*

6.4.1 The Association noted that the majority of Members participating in the Network of European Meteorological Services (EUMETNET) have agreed on the so called "Oslo Declaration" which defines the common objectives and guidelines for the development of data policies of the EUMETNET members, ECMWF and EUMETSAT and the related development of on-line services. These objectives and guidelines are consistent with the legal framework provided by the European Union, including the directive on the re-use of public sector information (PSI), and the directive on establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).

6.4.2 The Association noted further that the EUMETNET Oslo Declaration took into consideration the development of Internet and web technologies which changed radically the expectations of the general public and the ways to access and share public data and products. Therefore, the agreed data policies by the EUMETNET members were aimed at facilitating direct access to meteorological data and products on a non-discriminatory basis in compliance with relevant international and national regulations and with WMO resolutions. The declaration also encourages further development of on-line services and expansion of graphical products made available to the public, while continuing licensing polices for the underlying digital data and products.

6.4.3 Considering that the Oslo Declaration was a major step in the harmonization of data policies in the Region, the Association encouraged all its Members to give due consideration to its objectives and guidelines and that this should be further discussed by the Management Group, while the technical aspects of the issue be addressed by the newly established Working Group on Technology Development and Implementation. The Association agreed that the EUMETNET Oslo Declaration could be used as a reference in preparing the future regional data policy, taking due account of the legal frameworks of all RA VI Members.

7. WMO REGIONAL OFFICE FOR EUROPE *(agenda item 7)*

7.1 The Association expressed satisfaction as regards a number of measures undertaken by the Secretary-General in the structural and organizational areas of the Secretariat, particularly those referred to Regional WMO Offices and the Department on Development and Regional Activities (DRA) with the view to improving delivery of services to Members and enhancing partnership with national and regional institutions and organizations. In that regard, this Department had been established, in order to ensure the smooth and efficient implementation of activities, within the framework of the Regional Programme and Technical Cooperation Programme.

7.2 The Association noted with satisfaction that, based on the request by its fourteenth session (Heidelberg, September 2005), in November 2006 the Secretary-General transformed the former Subregional Office for Europe into a Regional Office. The session requested the Secretary-General to continue his efforts in strengthening the Regional Office for Europe (ROE) in order to meet the requirements of Members in the Region.

7.3 The Association reviewed the activities of the Office since its fourteenth session. It noted that the Office carried out its functions and responsibilities as an integral part of the WMO Secretariat. It also noted the effective assistance provided by the Office to the president, vice-president, and subsidiary bodies of the Association in discharging their responsibilities. It expressed its appreciation to the Secretary-General and to the staff of the Office for their continued support to the activities of the Association during the intersessional period.

7.4 The Association highlighted the important results obtained in the development of the RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011) and commended the ROE for being instrumental in achieving this substantial result.

7.5 The Association expressed full support to the high priority accorded by the ROE to initiating measures for bridging the identified gaps and raising the level of the meteorological and hydrological services in the developing countries and countries with economies in transition in the Region. The Association noted further the fruitful partnership established with regional and global partners, such as, the European Commission and the World Bank, in identifying appropriate financing mechanisms to support the capacity-building initiatives.

Proposed future activities

7.6 The Association noted with appreciation the plans for increasing the efficiency and effectiveness of the ROE in providing the required services to its Members. It expressed full support to the need for better use of information technologies, in particular, ongoing enhancement of the regional office Web pages and the country-profiles database, which is expected to begin "phase one" operations by the end of 2009. Recognizing the expected benefits and noting that additional resources will be necessary in this effort, the Association encouraged its Members, in the position to do so, to provide assistance to the ROE in enhancing its IT capabilities, including temporary secondment of staff.

7.7 Furthermore, the Association supported the enhancement of the role of the ROE in providing "one-stop" information service for all major activities in RA VI and for promoting achievements of its Members as well as the enhancement of multinational cooperation and collaboration. In particular, the Association requested the ROE to continue its coordination functions with the regional partner organizations, such as, ECMWF, EUMETSAT and EUMETNET, in support of further integration of the regional infrastructure and better use of the existing knowledge, expertise and services by all Members.

7.8 The Association agreed that the ROE should assist in the identification of deficiencies in the provision of required meteorological and hydrological services in the Region, analyze the reasons and the possibilities for their resolution in coordination with the relevant technical departments. Bridging the gaps and harmonization of the level of services through capacity-building and technology transfer should be among highest priorities of the Regional Office. In this regard, special emphasis should be given to ensure balance in providing assistance to all subregions in need.

7.9 The Association emphasized the important role the ROE has to play in the coordination of the implementation of the RA VI Strategic Plan and the related Action Plan. Noting that these implementation activities would form the major part of its work programme for the next intersessional period, the Association requested the ROE to work closely with the management group on the further enhancement of the Action Plan with concrete tasks and timelines for achieving the planned deliverables and outcomes in accordance with the established regional priorities and expected results. Furthermore, the ROE should provide assistance to Members in the development of national action plans, where needed, based on the Regional Strategic Plan.

8. SCIENTIFIC LECTURES AND DISCUSSIONS *(agenda item 8)*

8.1 The following scientific lectures were presented during the session:

(a) Meteosat – Third Generation (MTG), presented by Mr Sergio Rota, Associate Director for GEO Programmes, EUMETSAT;

(b) Ensemble forecasting for the Region, presented by Dr David Burridge, Thorpex IPO Manager;

(c) Limited Area Modelling for NWP in Europe, presented by Mr Piet Termonia, Royal Meteorological Institute of Belgium.

8.2 The Association thanked the lecturers for their presentations, which had been of great interest and high quality.

9. REVIEW OF PREVIOUS RESOLUTIONS AND RECOMMENDATIONS OF THE ASSOCIATION AND OF RELEVANT EXECUTIVE COUNCIL RESOLUTIONS *(agenda item 9)*

9.1 The Association examined those of its resolutions which were still in force at the time of the fifteenth session.

9.2 The Association noted that most of its past resolutions had been replaced by new resolutions adopted during the session. It further noted that while a few resolutions had been incorporated in the appropriate WMO publications, some of the previous resolutions were still required to be kept in force.

9.3 The Association accordingly adopted Resolution 7 (XV-RA VI) – Review of previous resolutions and recommendations of the Association.

9.4 The Association considered that Resolution 9 (EC-LVIII) on the report of the fourteenth session of the Association did not need to be kept in force.

10. ELECTION OF OFFICERS *(agenda item 10)*

The Association unanimously elected Mr Ivan Čačić (Croatia) as president and Prof. Mieczyslaw Ostojski (Poland) as vice-president of WMO Regional Association VI (Europe).

11. DATE AND PLACE OF THE SIXTEENTH SESSION *(agenda item 11)*

11.1 In accordance with Regulation 170 of the WMO General Regulations, the president of the Association should determine the date and place of the sixteenth session in agreement with the President of the World Meteorological Organization and after consultation with the Secretary-General, during the intersessional period.

11.2 The Association noted with appreciation the kind offer extended by Serbia to host the next session, subject to further confirmation.

12. CLOSURE OF THE SESSION *(agenda item 12)*

12.1 Mr J. Lengoasa, the representative of the Secretary-General thanked the Government of Belgium, as well as Mr H. Malcorps, Permanent Representative of Belgium with WMO and his staff for the excellent arrangements and kind hospitality. He expressed sincere gratitude to the outgoing president for the leadership and management of the Association. He acknowledged his hard work in changing the style of business and mainstreaming the RA VI activities. Mr Lengoasa thanked all delegates for their active participation in the work of the fifteenth session and assured them that the Secretariat would do its best to support the implementation of the decisions taken by the session.

12.2 Mr H. Malcorps, on behalf of the host country, congratulated all delegates for the excellent work done by the session. He expressed his belief that such meetings were valuable not only as forums for coordinating plans and activities but also through the exchange of culture and

values, which helps in building trust and mutual understanding. He expressed his thanks to all those who had done their part to ensure the success of the session.

12.3 Mr D. Keuerleber-Burk, the outgoing president of RA VI, in his closing remarks expressed his satisfaction of the work of the session. He acknowledged the positive mood and spirit of consensus which had allowed them to tackle controversial issues and bring them to a solution. The main priorities for the next intersessional period were set. However, he reminded participants that the world was changing rapidly, thus, it was no longer adequate to work exclusively with a four-year plan. He stressed that the new work structure adopted by the session, with fewer working groups and smaller number of core members and with the possibility to form task teams to tackle specific tasks, would provide the necessary flexibility to address emerging issues. There would be also more responsibility on the president and the management group who would have to adjust priorities according to changing environment and requirements. Mr Keuerleber-Burk congratulated the new president, Mr Čačić and the new vice-president, Mr Ostojski and wished them success in their tasks. He expressed his belief that they would manage the difficult job of running the Association activities in a very tight financial environment with extra energy and innovation. Mr Keuerleber-Burk expressed his gratitude to all those who supported his work during his tenure as president of the Association. He expressed also his satisfaction of being able to serve the Members of RA VI and contribute to the common goal of improving safety and well being of the people in RA VI and all over the world.

12.4 The fifteenth session of Regional Association VI (Europe) closed at 15.33 p.m. on 23 September 2009.

RESOLUTIONS ADOPTED BY THE SESSION

Resolution 1 (XV-RA VI)

ESTABLISHMENT OF A REGIONAL CLIMATE CENTRE NETWORK IN REGIONAL ASSOCIATION VI (EUROPE)

REGIONAL ASSOCIATION VI (EUROPE),

Noting:

(1) Resolution 8 (XIV-RA VI) – Re-establishment of the Working Group on Climate-Related Matters,

(2) Resolution 9 (XIV-RA VI) – Establishment of a Regional Climate Centre Network in RA VI (RCC-RA VI),

(3) The Report of the RA VI Working Group on Climate-Related Matters to the fifteenth session of Regional Association VI,

(4) The *Abridged Final Report with Resolutions of the Fifteenth World Meteorological Congress* (WMO-No. 1026), sections 3.1 and 3.2,

(5) The *Abridged Final Report with Resolutions and Recommendations of the Fourteenth Session of the Commission for Basic Systems* (WMO-No. 1040),

(6) The relevant amendments to the *Manual on the Global Data-Processing and Forecasting System* (WMO-No. 485),

Recognizing:

(1) The enhanced worldwide attention to climate change, the associated socio-economic vulnerabilities and the need to support decision-making for adaptation to climate change and variability with more detailed regional climate information,

(2) The development of a detailed Implementation Plan for the RA VI RCC-Network,

(3) The agreement of various RA VI Members to assume roles as contributing and lead institutions in a pilot phase of this proposed RCC-Network,

(4) The endorsement by the sixty-first session of the WMO Executive Council of the amendment to the *Manual on the Global Data-Processing and Forecasting System* (Volume 1 – Global Aspects), embedding the process for formal WMO designation of Regional Climate Centres and RCC-Networks in the WMO Technical Regulations,

Decides:

(1) To implement the pilot RA VI RCC-Network until the end of 2010 with the following initial structure (noting the consortia of National Meteorological and Hydrological Services in each node, and lead centres):

(a) RA VI RCC node on climate data (De Bilt):
- Royal Netherlands Meteorological Institute (KNMI)/The Netherlands (lead);
- Météo-France/France;
- Meteorological Service (OMSZ)/Hungary;
- Norwegian Meteorological Institute/Norway;
- Republic Hydrometeorological Service of Serbia (RHMS)/Serbia;
- Swedish Meteorological and Hydrological Institute (SMHI)/Sweden;
- Turkish State Meteorological Service (TSMS)/Turkey;

(b) RA VI RCC node on climate monitoring (Offenbach):
- Deutscher Wetterdienst (DWD)/Germany (lead);
- Armstatehydromet/Armenia;
- Météo-France/France;
- KNMI/The Netherlands;
- RHMS/Serbia;
- TSMS/Turkey;

(c) RA VI RCC node on Long-Range Forecasting (Toulouse/Moscow):
- Météo-France/France and ROSHYDROMET/Russian Federation (joint lead);
- Norwegian Meteorological Institute/Norway;
- RHMS/Serbia;
- TSMS/Turkey;

(2) That training in the use of operational RCC products and services, a mandatory function for the designation of Regional Climate Centres, shall be integrated into the activities of all the above three nodes;

(3) To keep the RA VI RCC-Network structure flexible throughout the pilot phase and beyond, allowing it to evolve based on Members' requirements;

(4) To ensure that the RA VI RCC-Network meets the criteria for formal designation in all the mandatory functions by the end of the pilot phase, and that the corresponding institutions make available their catalogue of services;

(5) To appoint an RA VI RCC-Network Focal Point to act as the official and formal contact for the entire RA VI RCC-Network, to coordinate the activities of the network and to implement a Website as a single entry point into the network, noting that the Focal Point would be one of the constituent leads of the RA VI RCC-Network nodes;

(6) To regularly review Members' requirements for climate information, products and services, and to ensure a state-of-the-art service provision to Members to meet their priority needs;

(7) To seek formal WMO designation of the RA VI RCC-Network in 2011, through the Commission for Climatology-Commission for Basic Systems process described in the *Manual on the Global Data-Processing and Forecasting System* (2009 version) and to mandate the president of RA VI to initiate this process, following satisfactory evaluation of capability to fulfil the mandatory functions and demonstration of this capability to the Commission for Climatology and the Commission for Basic Systems;

(8) That the implementation of the RA VI RCC-Network, as well as the pilot phase prior to formal designation, is coordinated by the RA VI Working Group on Climate and Hydrology, under the guidance of the president of RA VI and the RA VI Management Group;

Urges:

(1) Participating institutions in the RCC-Network to provide information on the catalogue of available services;

(2) Participating institutions in the RCC-Network to take up as many of the RCC "highly recommended" functions as feasible, to meet Members' priority needs;

(3) All Global Producing Centres for Long-Range Forecasts in the Region to support the efforts of and collaborate with the RA VI RCC-Network, particularly the node on Long-Range Forecasting;

(4) The RA VI RCC-Network to actively support the development and operation of Regional Climate Outlook Forums in the Region;

(5) All those concerned with the implementation of the RA VI RCC-Network to keep apprised of the outcomes of the World Climate Conference-3 (Geneva, 31 August–4 September 2009),

and to adjust/strengthen the activities of the network to be in line with the corresponding follow-up actions that may be taken up by WMO;

(6) The Members in the Region to contribute to the implementation and success of the RA VI RCC-Network;

Requests:

(1) The Secretary-General to provide the necessary support to ensure the success of the RA VI RCC-network, and the effective collaboration between RA VI RCC-Networks and the RCCs in other Regions;

(2) The RA VI Working Group on Climate and Hydrology to assist the president of RA VI on all matters related to RCC implementation;

(3) The president of RA VI to consult with the Commission for Climatology, the Commission for Basic Systems, the WMO Secretariat and the RA VI Working Group on Climate and Hydrology in the effective implementation of Regional Climate Centres;

(4) All Members to support RA VI RCC-Network activities, use their products and provide feedback on effectiveness, improvement and tailoring;

(5) All those institutions and bodies implementing/guiding the RA VI RCC-Network to appropriately incorporate the World Climate Conference-3 outcomes, particularly the relevant aspects of the Global Framework for Climate Services.

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Note: This resolution replaces Resolution 9 (XIV-RA VI), which is no longer in force.

Resolution 2 (XV-RA VI)

REGIONAL BASIC SYNOPTIC NETWORK AND REGIONAL BASIC CLIMATOLOGICAL NETWORK IN REGION VI

REGIONAL ASSOCIATION VI (EUROPE),

Noting:

(1) Resolution 2 (XIV-RA VI) – Regional Basic Synoptic Network,

(2) Resolution 3 (XIV-RA VI) – Regional Basic Climatological Network in Region VI,

(3) The *Manual on the Global Observing System* (WMO-No. 544), Volume I, Part III, Regulations 2.1.3.1–2.1.3.5, and the definition of the Regional Basic Synoptic Network,

(4) The *Manual on the Global Telecommunication System* (WMO-No. 386), Volume I, Part I, Attachment 1–3, Section 3,

Considering:

(1) That the establishment and maintenance of a Regional Basic Synoptic Network (RBSN) of surface and upper-air synoptic stations, adequate to meet the requirements of Members and of the World Weather Watch, constitute one of the most important obligations of Members under Article 2 of the WMO Convention,

(2) That the Fourteenth World Meteorological Congress welcomed the establishment of the Regional Basic Climatological Network (RBCN) in all WMO Regions and the Antarctic and

urged Members to ensure that their operational observing stations compiled and transmitted the CLIMAT and CLIMAT TEMP messages according to existing regulations,

Decides:

(1) That the stations and the observational programmes listed in Annex 1 to this resolution constitute the Regional Basic Synoptic Network in Region VI;

(2) That the stations listed in Annex II to this resolution constitute the Regional Basic Climatological Network in Region VI;

Urges Members:

(1) To secure, at the earliest date possible, full implementation of the network of RBSN and RBCN stations and observational programmes set forth in Annexes 1 and 2 to this resolution;

(2) To comply fully with the standard times of observation, the global and regional coding procedures and data collection standards as laid down in the WMO *Technical Regulations* (WMO-No. 49) and the *Manuals on the Global Observing System* (WMO-No. 544), *Manual on Codes* (WMO-No. 306) and *Manual on the Global Telecommunication System* (WMO-No. 386);

Authorizes the president of the Association to approve, at the request of the Members concerned and in consultation with the Secretary-General, minor amendments to the list of RBSN and RBCN stations in accordance with the procedures laid down in the *Manual on the Global Observing System* (WMO-No. 544), Volume II – Regional Aspects, Region VI (Europe).

Note: This resolution replaces Resolutions 2 (XIV-RA VI) and 3 (XIV-RA VI), which are no longer in force.

Annex 1 to Resolution 2 (XV-RA VI)

LIST OF STATIONS COMPRISING THE REGIONAL BASIC SYNOPTIC NETWORK IN REGION VI

INDEX	*STATION NAME*	*OBSERVATIONS*
ARMENIA		
37682	AMASIA	S
37717	SEVAN OZERO	S
37788	YEREVAN ZVARTNOTS	S
37789	YEREVAN	R
AUSTRIA		
11010	LINZ HOERSCHING AP	S
11120	INNSBRUCK AP	S
11035	WIEN HOHE WARTE	S
11035	WIEN HOHE WARTE	R
11150	SALZBURG AP	S
11157	AIGEN IM ENNSTAL	S
11231	KLAGENFURT	S
11240	GRAZ THALERHOF AP	S
AZERBAIJAN		
37575	ZAKATALA	S
37675	GUBA	S
37735	GANDJA	S
37749	GOYCHAY	S
37756	MARAZA	S
37864	BINA	S
37985	LANKARAN	S
BELARUS		
26554	VERHNEDVINSK	S
26666	VITEBSK	S
26850	MINSK	S
26863	MOGILEV	S
26941	BARANOVICHI	S
26951	SLUTSK	S
33008	BREST	S
33019	PINSK	S
33036	MOZYR'	S
33041	GOMEL'	S
BELGIUM		
06407	OOSTENDE AP	S
06447	UCCLE	S

INDEX	*STATION NAME*	*OBSERVATIONS*
06458	BEAUVECHAIN	R
06476	ST HUBERT	S
BOSNIA AND HERZEGOVINA		
14542	BANJA LUKA	S
14648	MOSTAR	S
14652	BJELASNICA	S
14654	SARAJEVO BEJELAVE	S
BULGARIA		
15502	VIDIN	S
15525	LOVETCH	S
15549	RAZGRAD	S
15552	VARNA	S
15614	SOFIA OBS	S
15614	SOFIA OBS	R
15640	SLIVEN	S
15655	BURGAS	S
15712	SANDANSKI	S
15730	KURDJALI	S
CROATIA		
14240	ZAGREB MAKSIMIR	S
14240	ZAGREB MAKSIMIR	R
14258	DARUVAR	S
14307	PULA/AERODROM	S
14330	GOSPIC	S
14370	SLAVONSKI BROD	S
14445	SPLIT MARJAN	S
14474	DUBROVNIK CILIPI	S
CYPRUS		
17600	PAPHOS AP	S
17607	ATHALASSA	R
17609	LARNACA AP	S
CZECH REPUBLIC		
11423	PRIMDA	S
11487	KOCELOVICE	S
11518	PRAHA RUZYNE	S
11520	PRAHA LIBUS	R
11603	LIBEREC	S
11659	PRIBYSLAV	S
11723	BRNO TURANY	S
11782	OSTRAVA MOSNOV	S
DENMARK, GREENLAND AND FAROE ISLANDS		
04203	KITSISSUT CAREY	S
04208	KITSISSORSUIT EDDER	S
04211	MITTARFIK UPERNAVIK	S
04213	QAARSUT MITTARFIA	S
04214	NUUSSUAATAA NUSSUAQ	S
04221	ILULISSAT	S
04224	AASIAAT MITTARFIA	S
04228	KITSISSUT ATTU	S
04231	KANGERLUSSUAQ	S
04234	SISIMIUT MITTARFIK	S
04241	MANIITSOQ MITTARFIA	S
04250	NUUK	S
04253	UKIIVIK	S
04260	PAAMIUT	S
04266	NUNARSUIT	S
04270	NARSARSUAQ	S
04270	NARSARSUAQ	R
04272	QAQORTOQ	S
04285	ANGISOQ	S
04301	KAP MORRIS JESUP	S
04312	NORD AUT	S
04313	HENRIK KROEYER HOLME	S
04320	DANMARKSHAVN	S
04320	DANMARKSHAVN	R
04330	DANEBORG	S
04339	ILLOQQORTOORMIUT	S
04339	ILLOQQORTOORMIUT	R
04351	APUTITEEQ	S
04360	TASIILAQ	S
04360	TASIILAQ	R
04373	IKERMIIT	S
04382	IKERMIUARSUK	S
04390	PR CHRISTIAN SUND	S
04416	SUMMIT	S
06011	TORSHAVN	S
06011	TORSHAVN	R
06030	AALBORG	S
06060	KARUP	S
06070	TIRSTRUP	S
06120	ODENSE BELDRINGE	S
06180	KOEBENHAVN KASTRUP	S
06193	HAMMER ODDE	S
ESTONIA		
26038	TALLINN	S
26038	TALLINN	R
26045	KUNDA	S
26115	RISTNA	S
26135	TURI	S
26231	PARNU	S
26242	TARTU	S
26247	VALGA	S
FINLAND		
02755	YLIVIESKA AIRPORT	S
02805	UTSJOKI KEVO	S
02807	INARI / IVALO	S
02836	SODANKYLA	S
02836	SODANKYLA	R
02845	ROVANIEMI AIRPORT	S
02849	SALLA KK	S
02866	PUDASJARVI AIRPORT	S
02897	KAJAANI PALTANIEMI	S
02913	KAUHAVA AIRPORT	S
02917	KUOPIO AIRPORT	S
02924	AHTARI MYLLYMAKI	S
02935	JYVASKYLA AIRPORT	S
02935	JYVASKYLA AIRPORT	R
02939	ILOMANTSI MEKRIJARVI	S
02944	TAMPERE PIRKKALA AIRPORT	S
02947	MIKKELI AIRPORT	S
02952	PORI AIRPORT	S
02963	JOKIOINEN OBSERVATORY	S
02963	JOKIOINEN OBSERVATORY	R
02971	JOMALA SODERSUNDA	S
02974	HELSINKI VANTAA AIRPORT	S
02976	KOTKA RANKKI	S
02981	KORPPOO UTO	S
02982	HANKO RUSSARO	S
FRANCE		
07005	ABBEVILLE	S
07015	LILLE	S

INDEX	STATION NAME	OBSERVATIONS
07020	LA HAGUE	S
07027	CAEN CARPIQUET	S
07037	ROUEN	S
07070	REIMS	S
07110	BREST GUIPAVAS	S
07110	BREST GUIPAVAS	R
07117	PLOUMANACH	S
07130	RENNES	S
07139	ALENCON	S
07145	TRAPPES	R
07149	PARIS ORLY	S
07168	TROYES	S
07180	NANCY ESSEY	S
07180	NANCY ESSEY	R
07190	STRASBOURG ENTZHEIM	S
07207	POINTE DU TALUT	S
07222	NANTES	S
07240	TOURS	S
07255	BOURGES	S
07280	DIJON LONGVIC	S
07299	BALE MULHOUSE	S
07314	CHASSIRON	S
07335	POITIERS	S
07434	LIMOGES BELLEGARDE	S
07460	CLERMONT FERRAND	S
07471	LE PUY	S
07481	LYON SATOLAS	S
07481	LYON SATOLAS	R
07510	BORDEAUX MERIGNAC	S
07510	BORDEAUX MERIGNAC	R
07535	GOURDON	S
07558	MILLAU	S
07577	MONTELIMAR	S
07591	EMBRUN	S
07607	MONT DE MARSAN	S
07621	TARBES OSSUN	S
07627	ST GIRONS	S
07630	TOULOUSE BLAGNAC	S
07643	MONTPELLIER	S
07645	NIMES COURBESSAC	R
07650	MARSEILLE MARIGNANE	S
07661	CAP CEPET	S
07690	NICE	S
07747	PERPIGNAN RIVESALTE	S
07761	AJACCIO	S
07761	AJACCIO	R
07790	BASTIA	S
61001	ODAS BUOY CÔTE D'AZUR	S
61002	ODAS BUOY GOLFE DU LYON	S
GEORGIA		
37279	ZUGDIDI	S
37308	AMBROLAURI	S
37395	KUTAISI	S
37403	SACHTHERE	S
37404	ZESTAFONI	S
37432	PASANAURI	S
37484	BATUMI	S
37514	AKHALSIKHI	S
37545	TBILISI	S
37553	TELAVI	S
37621	BOLNISI	S

INDEX	STATION NAME	OBSERVATIONS
GERMANY		
10004	LV TW EMS	S
10015	HELGOLAND ISL	S
10020	LIST SYLT	S
10035	SCHLESWIG	S
10035	SCHLESWIG	R
10055	WESTERMARKELSDORF	S
10147	HAMBURG FUHLSBUTTEL	S
10162	SCHWERIN	S
10184	GREIFSWALD	S
10184	GREIFSWALD	R
10200	EMDEN FP	S
10200	EMDEN FP	R
10224	BREMEN	S
10270	NEURUPPIN	S
10338	HANNOVER	S
10361	MAGDEBURG	S
10393	LINDENBERG	S
10393	LINDENBERG	R
10400	DUESSELDORF	S
10410	ESSEN	R
10438	KASSEL	S
10469	LEIPZIG SCHKEUDITZ	S
10488	DRESDEN KLOTZSCHE	S
10506	NUERBURG BARWEILER	S
10548	MEININGEN	S
10548	MEININGEN	R
10618	IDAR OBERSTEIN	R
10637	FRANKFURT MAIN AP	S
10685	HOF	S
10731	RHEINSTETTEN	S
10738	STUTTGART ECHTERDING	S
10739	STUTTGART SCHNARREN	R
10763	NUERNBERG	S
10771	KUEMMERSBRUCK	R
10788	STRAUBING	S
10852	AUGSBURG	S
10868	MUENCHEN OBERSCHLEI	R
10946	KEMPTEN	S
GIBRALTAR		
08495	GIBRALTAR	S
08495	GIBRALTAR	R
GREECE		
16614	KASTORIA AP	S
16622	THESSALONIKI AP	S
16622	THESSALONIKI AP	R
16627	ALEXANDROUPOLI AP	S
16641	KERKYRA AP	S
16643	AKTION AP	S
16648	LARISSA AP	S
16650	LIMNOS AP	S
16667	MYTILINI AP	S
16675	LAMIA	S
16682	ANDRAVIDA AP	S
16684	SKYROS AP	S
16710	TRIPOLIS AP	S
16716	ATHINAI AP HELLINIKON	S
16716	ATHINAI AP HELLINIKON	R
16723	SAMOS	S
16732	NAXOS	S

INDEX	*STATION NAME*	*OBSERVATIONS*
16734	METHONI	S
16738	MILOS	S
16741	EL VENIZELOS	S
16743	KYTHIRA	S
16746	SOUDA AP	S
16749	RHODES AP PARA	S
16754	HERAKLION AP	S
16754	HERAKLION AP	R
HUNGARY		
12772	MISKOLC	S
12822	GYOR	S
12843	BUDAPEST LORINC	S
12843	BUDAPEST LORINC	R
12882	DEBRECEN	S
12925	NAGYKANIZSA	S
12942	PECS POGANY	S
12982	SZEGED	S
12982	SZEGED	R
ICELAND		
04005	BOLUNGAVIK	S
04013	STYKKISHOLMUR	S
04018	KEFLAVIK AP	S
04018	KEFLAVIK AP	R
04048	VESTMANNAEYJAR	S
04056	HVERAVELLIR	S
04063	AKUREYRI	S
04064	KIRKJUBAEJARKLAUSTUR	S
04077	RAUFARHOFN	S
04082	HOFN	S
04097	DALATANGI	S
IRELAND		
03953	VALENTIA OBS	S
03953	VALENTIA OBS	R
03955	CORK AP	S
03956	JOHNSTOWN CASTLE	S
03962	SHANNON AP	S
03969	DUBLIN AP	S
03973	CONNAUGHT AP	S
03976	BELMULLET	S
03980	MALIN HEAD	S
62090	ODAS BUOY M1	S
ISRAEL		
40153	HAR KNAAN (ZEFAT)	S
40179	BET DAGAN	R
40180	BEN GURION AP	S
40190	BEER-SHEVA CITY	S
40199	EILAT	S
ITALY		
16008	SAN VALENTINO ALLA M	S
16021	PASSO ROLLE	S
16022	PAGANELLA	S
16033	DOBBIACO	S
16061	TORINO BRIC DELLA CROCE	S
16080	MILANO LINATE	S
16080	MILANO LINATE	R
16084	PIACENZA S.DAMIANO	S
16088	BRESCIA/GHEDI	S
16098	TREVISO ISTRANA	S
16110	TRIESTE	S
16120	GENOVA SESTRI	S

INDEX	*STATION NAME*	*OBSERVATIONS*
16134	MONTE CIMONE	S
16138	FERRARA	S
16148	CERVIA	S
16153	CAPO MELE	S
16158	PISA S GIUSTO	S
16172	AREZZO	S
16179	FRONTONE	S
16206	GROSSETO	S
16219	MONTE TERMINILLO	S
16224	VIGNA DI VILLE	S
16230	PESCARA	S
16232	TERMOLI	S
16245	PRATICA DI MARE	S
16245	PRATICA DI MARE	R
16252	CAMPOBASSO	S
16253	GRAZZANISE	S
16258	MONTE SAN'T ANGELO	S
16263	TREVICO	S
16270	BARI PALESE MACCHIE	S
16280	PONZA	S
16294	CAPRI	S
16310	CAPO PALINURO	S
16320	BRINDISI AB CASALE	S
16320	BRINDISI AB CASALE	R
16325	MARINA DI GINOSA	S
16344	MONTESCURO	S
16360	S MARIA DI LEUCA	S
16400	USTICA	S
16420	MESSINA	S
16429	TRAPANI BIRGI	S
16429	TRAPANI BIRGI	R
16450	ENNA	S
16459	CATANIA SIGONELLA	S
16470	PANTELLERIA	S
16480	COZZO SPADARO	S
16522	CAPO CACCIA	S
16531	OLBIA	S
16539	CAPO FRASCA	S
16546	DECIMOMANNU	S
16550	CAPO BELLAVISTA	S
JORDAN		
40250	H 4 'IRWAISHED'	S
40265	MAFRAQ	S
40265	MAFRAQ	R
40296	GHOR EL SAFI	S
40310	MA'AN	S
KAZAKHSTAN		
34398	ZHALPAKTAL	S
34691	NOVYJ USHTOGAN	S
34798	GANJUSHKINO	S
LATVIA		
26313	KOLKA	S
26346	ALUKSNE	S
26406	LIEPAJA	S
26416	SALDUS	S
26422	RIGA	S
26435	SKRIVERI	R
26544	DAUGAVPILS	S
LEBANON		
40100	BEYROUTH AP	S

INDEX	*STATION NAME*	*OBSERVATIONS*
40100	BEYROUTH AP	R
40103	TRIPOLI	S
LITHUANIA		
26509	KLAIPEDA	S
26518	LAUKUVA	S
26524	SIAULIAI	S
26531	BIRZAI	S
26629	KAUNAS	S
26629	KAUNAS	R
26633	UTENA	S
26730	VILNIUS	S
LUXEMBURG		
06590	LUXEMBOURG	S
MALTA		
16597	LUQA	S
MONTENEGRO		
13363	PLEVLJA	S
13457	TIVAT	S
13459	NIKSIC	S
13461	BAR	S
13462	PODGORICA GOLUBOVCI	S
13463	PODGORICA-GRAD	S
NETHERLANDS		
06235	DE KOOY	S
06239	PLATFORM F3	S
06240	AMSTERDAM AP SCHIPH	S
06252	PLATFORM K13	S
06260	DE BILT	R
06270	LEEUWARDEN	S
06290	TWENTHE	S
06321	PLATFORM EURO	S
06375	VOLKEL	S
06380	BEEK	S
NORWAY		
01001	JAN MAYEN	S
01001	JAN MAYEN	R
01003	HORNSUND	S
01004	NY ALESUND II	R
01007	NY ALESUND	S
01008	SVALBARD AP	S
01010	ANDOYA	S
01026	TROMSO	S
01028	BJORNOYA	S
01028	BJORNOYA	R
01047	KAUTOKEINO	S
01049	ALTA AP	S
01055	FRUHOLMEN LH	S
01062	HOPEN	S
01078	SLETTNES LH	S
01098	VARDO	S
01102	SKLINNA LH	S
01115	MYKEN	S
01152	BODO VI	S
01152	BODO VI	R
01160	SKROVA AD	S
01205	SVINOY LH	S
01212	ONA II	S
01218	TAFJORD	S
01238	FOKSTUGU	S
01241	ORLAND III	S

INDEX	*STATION NAME*	*OBSERVATIONS*
01241	ORLAND III	R
01271	TRONDHEIM VAERNES	S
01281	NAMSKOGAN	S
01288	ROROS AP	S
01300	GULLFAKS C	S
01317	BERGEN FLORIDA	S
01338	VANGSNES	S
01359	GEILO-OLDEBRATEN	S
01367	FAGERNES	S
01384	OSLO GARDERMOEN	S
01397	TRYSIL VEGSTASJON	S
01400	EKOFISK	S
01400	EKOFISK	R
01403	UTSIRA LH	S
01415	STAVANGER SOLA	S
01415	STAVANGER SOLA	R
01427	LISTA LH	S
01447	HOYDALSMO II	S
01448	OKSOY LH	S
01482	FERDER LH	S
01492	OSLO BLINDERN	S
POLAND		
12105	KOSZALIN	S
12120	LEBA	S
12120	LEBA	R
12160	ELBLAG	S
12195	SUWALKI	S
12205	SZCZECIN	S
12235	CHOJNICE	S
12250	TORUN	S
12270	MLAWA	S
12280	MIKOLAJKI	S
12295	BIALYSTOK	S
12300	GORZOW WLKP	S
12330	POZNAN	S
12374	LEGIONOWO	R
12375	WARSZAWA OKECIE	S
12400	ZIELONA GORA	S
12424	W ROCLAW II STRACHOW	S
12425	W ROCLAW I	R
12435	KALISZ	S
12465	LODZ	S
12495	LUBLIN RADAWIEC	S
12530	OPOLE	S
12566	KRAKOW BALICE	S
12570	KIELCE	S
12580	RZESZOW JASIONKA	S
PORTUGAL		
08501	FLORES	S
08505	HORTA CASTELO BRANC	S
08508	LAJES SANTA RITA	R
08509	LAJES	S
08512	PONTA DELGADA NORDE	S
08515	SANTA MARIA	S
08533	SAGRES	S
08541	SINES MONTES CHAOS	S
08545	PORTO PEDRAS RUBRAS	S
08548	COIMBRA CERVACHE	S
08554	FARO AP	S
08558	EVORA C COORD	S

INDEX	*STATION NAME*	*OBSERVATIONS*
08560	VISEU	S
08567	VILA REAL	S
08570	CASTELO BRANCO	S
08575	BRAGANCA	S
08579	LISBOA GAGO COUTINH	S
08579	LISBOA GAGO COUTINH	R
REPUBLIC OF MOLDOVA		
33815	CHISINAU	S
ROMANIA		
15015	OCNA SUGATAG	S
15020	BOTOSANI	S
15090	IASI	S
15108	CEAHLAU TOACA	S
15120	CLUJ NAPOCA	S
15120	CLUJ NAPOCA	R
15150	BACAU	S
15170	MIERCUREA CIUC	S
15200	ARAD	S
15230	DEVA	S
15260	SIBIU	S
15280	VF OMU	S
15292	CARANSEBES	S
15310	GALATI	S
15335	TULCEA	S
15346	RIMNICU VILCEA	S
15350	BUZAU	S
15360	SULINA	S
15410	DROBETA TR SEVERIN	S
15420	BUCURESTI BANEASA	S
15421	BUCURESTI AFUMATI	R
15450	CRAIOVA	S
15460	CALARASI	S
15470	ROSIORI DE VEDE	S
15480	CONSTANTA	S
RUSSIAN FEDERATION		
20107	BARENCBURG	S
22028	TERIBERKA	S
22106	PADUN	S
22113	MURMANSK	S
22113	MURMANSK	R
22127	LOVOZERO	S
22165	KANIN NOS	S
22217	KANDALAKSA	S
22217	KANDALAKSA	R
22235	KRASNOSCEL'E	S
22271	SOJNA	S
22271	SOJNA	R
22282	MYS MIKULKIN	S
22324	UMBA	S
22349	PJALICA	S
22408	KALEVALA	S
22438	ZIZGIN	S
22471	MEZEN	S
22520	KEM' PORT	S
22522	KEM	R
22550	ARHANGEL'SK	S
22550	ARHANGEL'SK	R
22563	PINEGA	S
22583	KOJNAS	S
22602	REBOLY	S

INDEX	*STATION NAME*	*OBSERVATIONS*
22619	PADANY	S
22621	SEGEZA	S
22641	ONEGA	S
22676	SURA	S
22695	KOSLAN	S
22721	MEDVEZEGORSK	S
22768	SENKURSK	S
22802	SORTAVALA	S
22820	PETROZAVODSK	S
22831	PUDOZ	S
22837	VYTEGRA	S
22845	KARGOPOL'	S
22845	KARGOPOL'	R
22867	VEL'SK	S
22887	KOTLAS	S
22892	VYBORG	S
22939	BELOZERSK	S
22954	VOZEGA	S
22996	OB'JACEVO	S
26059	KINGISEPP	S
26063	ST PETERBURG	S
26063	ST PETERBURG (VOEJKOVO)	R
26094	TIHVIN	S
26157	GDOV	S
26167	NIKOLAEVSKOE	S
26258	PSKOV	S
26275	STARAJA RUSSA	S
26298	BOLOGOE	S
26298	BOLOGOE	R
26359	PUBKINSKIE GORY	S
26389	OSTASKOV	S
26477	VELIKIE LUKI	R
26695	VJAZ'MA	S
26702	KALININGRAD	S
26781	SMOLENSK	S
26781	SMOLENSK	R
26882	ROSLAVL'	S
26997	TRUBCEVSK	S
27008	BABAEVO	S
27037	VOLOGDA	S
27037	VOLOGDA	R
27051	TOT'MA	S
27066	NIKOL'SK	S
27083	OPARINO	S
27113	CEREPOVEC	S
27199	KIROV	S
27199	KIROV	R
27208	MAKSATIKHA	S
27225	RYBINSK	S
27242	BUJ	S
27252	NIKOLO POLOMA	S
27271	SAR'JA	S
27329	ROSTOV	S
27333	KOSTROMA	S
27355	JUR'EVEC	S
27369	KRASNYE BAKI	S
27373	SAKUN'JA	S
27393	NOLINSK	S
27402	TVER'	S
27459	NIZNIJ NOVGOROD	S
27459	NIZNIJ NOVGOROD	R

INDEX	STATION NAME	OBSERVATIONS
27479	KOZ'MODEM'JANSK	S
27532	VLADIMIR	S
27595	KAZAN'	S
27595	KAZAN'	R
27612	MOSKVA	S
27612	MOSKVA (DOLGOPRUDNYJ)	R
27648	ELAT'MA	S
27665	LUKOJANOV	S
27675	PORETSKOYE	S
27679	ALATYR'	S
27707	SUHINICI	S
27719	TULA	S
27730	RJAZAN'	S
27730	RJAZAN'	R
27786	ULYANOVSK	S
27835	RJAZSK	S
27857	ZAMETCINO	S
27906	OREL	S
27928	ELEC	S
27947	TAMBOV	S
27962	PENZA	S
27962	PENZA	R
27983	SYZRAN'	S
27995	SAMARA (BEZENCHUK)	S
34009	KURSK	S
34009	KURSK	R
34110	BOGORODITSKOE-FENINO	S
34122	VORONEZ	R
34123	VORONEZ	S
34152	BALASOV	S
34163	OKTYABRSKY GORODOK	S
34172	SARATOV	S
34172	SARATOV	R
34186	ERSOV	S
34247	KALAC	S
34247	KALAC	R
34336	BOGUCAR	S
34357	SERAFIMOVIC	S
34363	KAMYSIN	S
34391	ALEKSANDROV GAJ	S
34545	MOROZOVSK	S
34560	VOLGOGRAD	S
34560	VOLGOGRAD	R
34579	VERHNIJ BASKUNCAK	S
34720	TAGANROG	S
34730	ROSTOV NA DONU	S
34731	ROSTOV NA DONU	R
34740	GIGANT	S
34824	PRIMORSKO-AHTARSK	S
34838	TIHORECK	S
34858	DIVNOE	S
34858	DIVNOE	R
34866	JASKUL'	S
34880	ASTRAHAN'	S
34880	ASTRAHAN'	R
34927	KRASNODAR-KRUGLIK	S
34949	STAVROPOL	S
37001	ANAPA	S
37018	TUAPSE	S
37031	ARMAVIR	S
37054	MINERAL'NYE VODY	S
37054	MINERAL'NYE VODY	R
37061	BUDENNOVSK	S
37085	KOCUBEJ	S
37107	KRASNAYA POLYANA	S
37126	SHADZHATMAZ	S
37171	ADLER	S
37228	VLADIKAVKAZ	S
37470	DERBENT	S
37472	MAHACKALA	S
37663	AKHTY	S
SERBIA		
13067	SUBOTICA-PALIE	S
13160	SOMBOR	S
13168	NOVI SAD	S
13173	ZRENJANIN	S
13174	KIKINDA	S
13180	BANATSKI KARLOVAC	S
13183	VRSAC	S
13262	LOZNICA	S
13266	SREMDKA MITROVICA	S
13269	VALJEVO	S
13272	BEOGRAD SURCIN	S
13274	BEOGRAD VRACAR	S
13275	BEOGRAD KOSUTNJAK	R
13278	KRAGUJEVAC	S
13279	SMEDEREVSKA PALANKA	S
13285	VELIKO GRADISTE	S
13289	CRNI VRH	S
13295	NEGOTIN	S
13367	ZLATIBOR	S
13369	SJENICA	S
13376	KRALJEVO	S
13378	KOPAONIK	S
13384	CUPRIJA	S
13388	NIS	S
13389	LESKOVAC	S
13397	DIMITROVGRAD	S
13477	PRIZREN	S
13481	PRISTINA	S
13489	VRANJE	S
SLOVAKIA		
11826	PIESTANY	S
11903	SLIAC	S
11934	POPRAD TATRY	S
11952	POPRAD GANOVCE	R
11968	KOSICE	S
SLOVENIA		
14015	LJUBLJANA BEZIGRAD	S
14015	LJUBLJANA BEZIGRAD	R
14026	MARIBOR SLIVNICA	S
SPAIN		
08001	LA CORUNA	S
08001	LA CORUNA	R
08015	OVIEDO	S
08023	SANTANDER	S
08023	SANTANDER	R
08027	SAN SEBASTIAN IGUELDO	S
08045	VIGO PEINADOR	S
08055	LEON VIRGEN DEL CAMINO	S
08075	BURGOS VILLAFRIA	S

INDEX	*STATION NAME*	*OBSERVATIONS*
08084	LOGRONO AGONCILLO	S
08141	VALLADOLID	S
08160	ZARAGOZA AEROPUERTO	S
08160	ZARAGOZA AEROPUERTO	R
08171	LERIDA	S
08181	BARCELONA AEROPUERTO	S
08184	GERONA COSTA BRAVA	S
08190	BARCELONA SERVEI	R
08202	SALAMANCA MATACAN	S
08221	MADRID BARAJAS	S
08221	MADRID BARAJAS	R
08231	CUENCA	S
08235	TERUEL	S
08238	TORTOSA	S
08261	CACERES	S
08280	ALBACETE LOS LLANOS	S
08284	VALENCIA AEROPUERTO	S
08302	MALLORCA/SON BONET	R
08306	PALMA DE MALLORCA/SON SAN JUAN	S
08314	MENORCA MAHON	S
08330	BADAJOZ TALAVERA LA REAL	S
08348	CIUDAD REAL	S
08360	ALICANTE EL ALTET	S
08373	IBIZA ES CODOLA	S
08410	CORDOBA AEROPUERTO	S
08419	GRANADA AEROPUERTO	S
08430	MURCIA	S
08430	MURCIA	R
08451	JEREZ DE LA FRONTERA/ AEROPUERTO	S
08482	MALAGA AEROPUERTO	S
08487	ALMERIA AEROPUERTO	S
SWEDEN		
02019	KATTERJAKK A	S
02081	KARESUANDO A	S
02095	PAJALA A	S
02101	HEMAVAN A	S
02119	KVIKKJOKK ARRENJ. A	S
02124	ARJEPLOG	S
02126	GUNNARN A	S
02151	JOKKMOKK FPL	S
02185	LULEA KALLAX	R
02186	LULEA KALLAX	S
02197	HAPARANDA A	S
02206	STORLIEN	S
02219	GADDEDE A	S
02226	OSTERSUND FROSON	S
02243	JUNSELE A	S
02269	SKAGSUDDE	S
02287	HOLMON	S
02297	BJUROKLUBB	S
02308	TANNAS	S
02324	SVEG	S
02355	KUGGOREN	S
02365	SUNDSVALL HARNOSAND	R
02366	SUNDSVALL HARNOSAND	S
02407	MALUNG A	S
02410	MALUNG	S
02418	KARLSTAD FLYGPLATS	S
02435	BORLANGE	S
02440	AMOT	S
02452	KILSBERGEN SUTTARBO	S
02456	FILM	S
02464	STOCKHOLM-BROMMA	S
02469	TULLINGE	S
02496	SVENSKA HOGARNA	S
02498	SVENSKA HOGARNA A	S
02500	NORDKOSTER	S
02513	GOTEBERG	S
02518	NIDINGEN	S
02520	SATENAS	S
02527	GOTEBORG LANDVETTER	R
02550	JONKOPING AXAMO	S
02562	LINKOPING MALMSLAET	S
02563	HARSTENA	S
02565	MALILLA A	S
02590	VISBY AD	S
02591	VISBY AS	R
02616	FALSTERBO	S
02618	TORUP A	S
02635	MALMO	S
02664	RONNEBY KALLINGE	S
02679	HOBURG A	S
SWITZERLAND AND LIECHTENSTEIN		
06610	PAYERNE	S
06610	PAYERNE	R
06670	ZURICH AP KLOTEN	S
06680	SANTIS	S
06700	GENEVE AP COINTRIN	S
06720	SION	S
06760	LOCARNO MONTI	S
06990	VADUZ LIECHTENSTEIN	S
SYRIAN ARAB REPUBLIC		
40001	KAMISHLI	S
40007	ALEPPO AP	S
40022	LATTAKIA	S
40030	HAMA	S
40039	RAQQA	S
40045	DEIR EZZOR	S
40061	PALMYRA	S
40072	ABUKMAL	S
40080	DAMASCUS AP	S
THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA		
13583	BITOLA	S
13586	SKOPJE PETROVEC	R
13588	SKOPJE ZAJCEV RID	S
13591	STIP	S
TURKEY		
17022	ZONGULDAK	S
17024	INEBOLU	S
17026	SINOP	S
17030	SAMSUN	R
17031	CARSAMBA SAMSUN	S
17034	GIRESUN	S
17038	TRABZON	S
17042	HOPA	S
17050	EDIRNE	S
17056	TEKIRDAG	S
17060	ISTANBUL ATATURK	S

INDEX	STATION NAME	OBSERVATIONS
17062	ISTANBUL GOZTEPE	R
17067	GOLCUK DUMLUPINAR	S
17070	BOLU	S
17074	KASTAMONU	S
17084	CORUM	S
17086	TOKAT	S
17088	GUMUSHANE	S
17090	SIVAS	S
17092	ERZINCAN	S
17096	ERZURUM	S
17098	KARS	S
17112	CANAKKALE	S
17115	BANDIRMA	S
17116	BURSA	S
17124	ESKISEHIR	S
17128	ANKARA ESENBOGA	S
17130	ANKARA CENTRAL	R
17140	YOZGAT	S
17150	BALIKESIR	S
17155	KUTAHYA	S
17160	KIRSEHIR	S
17170	VAN	S
17184	AKHISAR	S
17188	USAK	S
17189	AFYONKARAHISAR	S
17195	KAYSERI ERKILET	S
17199	MALATYA BOLGE	S
17202	ELAZIG	S
17203	BINGOL	S
17210	SIIRT	S
17219	IZMIR A MENDERES	S
17220	IZMIR GUZELYALI	R
17234	AYDIN	S
17237	DENIZLI	S
17240	ISPARTA	S
17240	ISPARTA	R
17244	KONYA	S
17248	KONYA EREGLI	S
17250	NIGDE	S
17260	GAZIANTEP	S
17272	SANLIURFA-MEYDAN	S
17280	DIYARBAKIR	S
17281	DIYARBAKIR-BOLGE	R
17290	BODRUM	S
17292	MUGLA	S
17295	DALAMAN	S
17300	ANTALYA	S
17310	ALANYA	S
17320	ANAMUR	S
17330	SILIFKE	S
17350	ADANA INCIRLIK	S
17351	ADANA BOLGE	R
17370	ISKENDERUN	S
17375	FINIKE	S
UKRAINE		
33088	SARNY	S
33135	CHERNIHIV	S
33177	VOLODYMYR VOLYNS'KY	S
33261	KONOTOP	S
33275	SUMY	S
33301	RIVNE	S
33317	SHEPETIVKA	S
33317	SHEPETIVKA	R
33325	ZHYTOMYR	S
33345	KYIV	S
33345	KYIV	R
33377	LUBNY	S
33393	L'VIV	S
33393	L'VIV	R
33415	TERNOPIL'	S
33429	KHMEL'NYTS'KYI	S
33466	MYRONIVKA	S
33506	POLTAVA	S
33526	IVANO FRANKIVS'K	S
33562	VINNYTSIA	S
33587	UMAN'	S
33614	SVITLOVODS'K	S
33631	UZHHOROD	S
33658	CHERNIVTSI	S
33658	CHERNIVTSI	R
33711	KIROVOHRAD	S
33761	LIUBASHIVKA	S
33791	KRYVYI RIH	S
33791	KRYVYI RIH	R
33837	ODESA	S
33837	ODESA	R
33902	KHERSON	S
33924	CHORNOMORS'KE	S
33946	SIMFEROPOL'	S
33946	SIMFEROPOL'	R
33983	KERCH	S
34300	KHARKIV	S
34300	KHARKIV	R
34415	IZIUM	S
34504	DNIPROPETROVS'K	S
34519	DONETS'K	S
34523	LUHANS'K	S
34601	ZAPORIZHZHIA	S
34712	MARIUPOL'	S
UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND		
03005	LERWICK	S
03005	LERWICK	R
03026	STORNOWAY	S
03037	SKYE LUSA	S
03066	KINLOSS	S
03075	WICK	S
03091	DYCE	S
03100	TIREE	S
03105	ISLAY:PORT ELLEN	S
03136	PRESTWICK, GANNET	S
03162	ESKDALEMUIR	S
03171	LEUCHARS	S
03204	RONALDSWAY	S
03238	ALBEMARLE	R
03240	BOULMER	S
03257	LEEMING	S
03302	VALLEY	S
03348	WOODFORD	S
03354	NOTTINGHAM, WATNALL	R
03377	WADDINGTON	S
03382	LECONFIELD	S

INDEX	STATION NAME	OBSERVATIONS
03414	SHAWBURY	S
03462	WITTERING	S
03502	ABERPORTH	S
03590	WATTISHAM	S
03716	ST ATHAN	S
03740	LYNEHAM	S
03772	HEATHROW	S
03797	MANSTON	S
03808	CAMBORNE	S
03808	CAMBORNE	R
03853	YEOVILTON	S
03872	THORNEY ISLAND	S
03882	HERSTMONCEUX	S
03882	HERSTMONCEUX	R
03917	BELFAST ALDERGROVE	S
03918	CASTOR BAY	R
62029	ODAS BUOY K1	S
62081	ODAS BUOY K2	S
62105	ODAS BUOY K4	S
64045	ODAS BUOY K5	S
COOPERATION BY THE UNITED KINGDOM AND FRANCE		
62001	ODAS BUOY GASCOGNE	S
62163	ODAS BUOY BRITTANNY	S

Legend:
S = Surface observations
W = Radiowind observations
R = Radiosonde observations including radiowind observations

Note: An up-to-date list of Regional Basic Synoptic Network stations is available at http://www.wmo.int/pages/prog/www/ois/rbsn-rbcn/rbsn-rbcn-home.htm.

Annex 2 to Resolution 2 (XV-RA VI)

LIST OF STATIONS COMPRISING THE REGIONAL BASIC CLIMATOLOGICAL NETWORK IN REGION VI

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
ALBANIA					
13615	TIRANA	X		X	
ARMENIA					
37682	AMASIA	X			
37717	SEVAN OZERO	X			
37789	YEREVAN ARABKIR	X			X
AUSTRIA					
11012	KREMSMUENSTER	X		X	
11035	WIEN HOHE WARTE	X		X	
11035	WIEN HOHE WARTE		X		X
11120	INNSBRUCK AP	X			
11146	SONNBLICK	X		X	
11150	SALZBURG AP	X			
11155	FEUERKOGEL	X			
11212	VILLACHERALPE	X			
11231	KLAGENFURT	X			
11240	GRAZ THALERHOF AP	X			
AZERBAIJAN					
37661	SHEKI	X			
37735	GANDIA	X			
37747	YEVLAKH	X			
37860	MASHTAGA	X			
37936	NAKHCHIVAN	X			
37989	ASTARA	X		X	
BELARUS					
26554	VERHNEDVINSK	X			
26666	VITEBSK	X			
26825	GRODNO	X			
26850	MINSK	X			
26863	MOGILEV	X			
26941	BARANOVICHI	X			
26951	SLUTSK	X			
33008	BREST	X			
33019	PINSK	X			
33036	MOZYR	X			
33038	VASILEVICHI	X		X	
33041	GOMEL'	X			
BELGIUM					
06447	UCCLE	X		X	
BOSNIA AND HERZEGOVINA					
14542	BANJA LUKA	X			
14557	TUZLA	X			
14648	MOSTAR	X			
14652	BJELASNICA	X		X	
14654	SARAJEVO BEJELAVE	X			
BULGARIA					
15502	VIDIN	X			
15552	VARNA	X			
15614	SOFIA OBS	X			
15614	SOFIA OBS		X		
15730	KURDJALI	X			
CROATIA					
14236	ZAGREB GRIC	X		X	
14240	ZAGREB MAKSIMIR		X		
14445	SPLIT MARJAN	X			
CYPRUS					
17600	PAPHOS AP	X		X	
17607	ATHALASSA		X		X
17609	LÁRNACA AP	X		X	
CZECH REPUBLIC					
11423	PRIMDA	X			

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
11464	MILESOVKA	X		X	
11487	KOCELOVICE	X			
11520	PRAHA LIBUS	X			
11520	PRAHA LIBUS		X		
11603	LIBEREC	X			
11659	PRIBYSLAV	X			
11723	BRNO TURANY	X			
11782	OSTRAVA MOSNOV	X			
11787	LYSA HORA	X			
DENMARK, GREENLAND AND FAROE ISLANDS					
04211	MITTARFIK UPERNAVIK	X		X	
04220	AASIAAT	X			
04220	AASIAAT		X		
04250	NUUK	X		X	
04270	NARSARSUAQ		X		X
04312	NORD AUT	X			
04320	DANMARKSHAVN	X		X	
04320	DANMARKSHAVN		X		
04339	ILLOQQORTOORMIUT	X			
04339	ILLOQQORTOORMIUT		X		
04360	TASIILAQ	X		X	
04360	TASIILAQ		X		
04390	PR CHRISTIAN SUND	X		X	
06011	TORSHAVN	X		X	
06011	TORSHAVN		X		
06030	AALBORG	X			
06186	KOEBENHAVN LHS	X		X	
06190	ROENNE	X			
ESTONIA					
26038	TALLINN	X			
26214	VILSANDI	X			
26242	TARTU	X		X	
FINLAND					
02801	ENONTEKIO KILPISJARVI	X			
02805	UTSJOKI KEVO	X			
02836	SODANKYLA	X		X	
02836	SODANKYLA		X		X
02875	OULU AIRPORT	X			
02897	KAJAANI PALTANIEMI	X			
02935	JYVASKYLA AIRPORT	X		X	
02935	JYVASKYLA AIRPORT		X		
02942	KANKAANPAA NIINISALO	X			
02958	LAPPEENRANTA AIRPORT	X			
02963	JOKIOINEN OBSERVATORY	X		X	
02963	JOKIOINEN OBSERVATORY		X		
02972	TURKU AIRPORT	X			
02974	HELSINKI VANTAA AIRPORT	X			
FRANCE					
07005	ABBEVILLE	X			
07015	LILLE	X			
07020	LA HAGUE	X			
07027	CAEN CARPIQUET	X			
07037	ROUEN	X			
07070	REIMS	X			
07110	BREST GUIPAVAS	X			
07110	BREST GUIPAVAS		X		
07117	PLOUMANACH	X			
07130	RENNES	X		X	
07139	ALENCON	X			
07145	TRAPPES		X		

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
07149	PARIS ORLY	X			
07168	TROYES	X			
07180	NANCY ESSEY		X		
07181	NANCY OCHEY	X			
07190	STRASBOURG ENTZHEIM	X		X	
07207	POINTE DU TALUT	X			
07222	NANTES	X			
07240	TOURS	X			
07255	BOURGES	X		X	
07280	DIJON LONGVIC	X			
07299	BALE MULHOUSE	X			
07314	CHASSIRON	X			
07335	POITIERS	X			
07434	LIMOGES BELLEGARDE	X			
07460	CLERMONT FERRAND	X			
07471	LE PUY	X			
07481	LYON SATOLAS	X			
07481	LYON SATOLAS		X		
07510	BORDEAUX MERIGNAC	X			
07510	BORDEAUX MERIGNAC		X		
07535	GOURDON	X			
07560	MONT AIGOUAL	X		X	
07577	MONTELIMAR	X			
07591	EMBRUN	X			
07607	MONT DE MARSAN	X			
07621	TARBES OSSUN	X			
07627	ST GIRONS	X			
07630	TOULOUSE BLAGNAC	X		X	
07643	MONTPELLIER	X			
07645	NIMES COURBESSAC		X		
07650	MARSEILLE MARIGNANE	X		X	
07661	CAP CEPET	X			
07690	NICE	X			
07747	PERPIGNAN RIVESALTE	X			
07761	AJACCIO	X			
07761	AJACCIO		X		
07790	BASTIA	X			
GEORGIA					
37279	ZUGDIDI	X			
37395	KUTAISI	X			
37404	ZESTAFONI	X			
37432	PASANAURI	X			
37484	BATUMI	X			
37545	TBLISI	X		X	
37621	BOLNISI	X			
GERMANY					
10015	HELGOLAND ISL	X			
10020	LIST SYLT	X			
10035	SCHLESWIG	X			
10035	SCHLESWIG		X		
10055	WESTERMARKELSDORF	X			
10091	ARKONA	X			
10113	NORDERNEY	X			
10131	CUXHAVEN	X			
10147	HAMBURG FUHLSBUTTEL	X		X	
10162	SCHWERIN	X			
10170	ROSTOCK WARNEMUNDE	X			
10184	GREIFSWALD	X			
10184	GREIFSWALD		X		
10200	EMDEN FP	X			

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
10200	EMDEN FP		X		
10224	BREMEN	X			
10238	BERGEN		X		
10270	NEURUPPIN	X			
10315	MUENSTER OSNABRUCK	X			
10338	HANNOVER	X			
10361	MAGDEBURG	X			
10379	POTSDAM	X			
10384	BERLIN-TEMPELHOF	X			
10393	LINDENBERG	X		X	
10393	LINDENBERG		X		X
10400	DUESSELDORF	X			
10410	ESSEN		X		
10427	KAHLER ASTEN	X			
10453	BROCKEN	X			
10469	LEIPZIG SCHKEUDITZ	X			
10488	DRESDEN KLOTZSCHE	X			
10499	GORLITZ	X			
10501	AACHEN	X			
10506	NUERBURG BARWEILER	X			
10513	KOLN BONN	X			
10544	WASSERKUPPE	X			
10548	MEININGEN	X			
10548	MEININGEN		X		
10554	ERFURT BINDERSLEBEN	X			
10567	GERA-LEUMNITZ	X			
10578	FICHTELBERG	X			
10609	TRIER-PETRISBERG	X			
10616	HAHN	X			
10637	FRANKFURT MAIN AP	X		X	
10655	WUERZBURG	X			
10675	BAMBERG	X			
10685	HOF	X			
10708	SAARBRUECKEN ENSHEIM	X			
10731	RHEINSTETTEN	X			
10738	STUTTGART ECHTERDING	X			
10739	STUTTGART SCHNARREN		X		
10763	NUERNBERG	X			
10776	REGENSBURG	X			
10788	STRAUBING	X			
10791	GROSSER ARBER	X			
10805	LAHR	X			
10852	AUGSBURG	X			
10868	MUENCHEN OBERSCHLEI		X		
10870	MUENCHEN AP	X			
10908	FELDBERG SCHWARZW	X			
10929	KONSTANZ	X			
10946	KEMPTEN	X			
10948	OBERSTDORF	X			
10961	ZUGSPITZE	X			
10962	HOHENPEISSENBERG	X		X	
10980	WENDELSTEIN	X			
GIBRALTAR					
08495	GIBRALTAR	X			
08495	GIBRALTAR		X		X
GREECE					
16622	THESSALONIKI AP	X			
16641	KERKYRA AP	X		X	
16648	LARISSA AP	X			
16714	ATHENS OBSERVATORY	X			
16716	ATHINAI AP HELLINIKON	X			
16719	ZAKINTHOS	X			
16723	SAMOS	X		X	
16726	KALAMATA	X			
16734	METHONI	X		X	
16746	SOUDA AP	X		X	
16754	HERAKLION AP	X			
16754	HERAKLION AP		X		
HUNGARY					
12772	MISKOLC	X			
12822	GYOR	X			
12843	BUDAPEST LORINC	X			
12843	BUDAPEST LORINC		X		
12882	DEBRECEN	X			
12925	NAGYKANIZSA	X			
12942	PECS POGANY	X		X	
12982	SZEGED	X			
12982	SZEGED		X		
ICELAND					
04013	STYKKISHOLMUR	X		X	
04018	KEFLAVIK AP	X			
04018	KEFLAVIK AP		X		X
04030	REYKJAVIK	X		X	
04048	VESTMANNAEYJAR	X		X	
04063	AKUREYRI	X		X	
04097	DALATANGI	X			
IRELAND					
03953	VALENTIA OBS	X		X	
03953	VALENTIA OBS		X		X
03955	CORK AP	X			
03956	JOHNSTOWN CASTLE	X			
03962	SHANNON AP	X			
03969	DUBLIN AP	X			
03973	CONNAUGHT AP	X			
03976	BELMULLET	X			
03980	MALIN HEAD	X		X	
ISRAEL					
40153	HAR-KNAAN (ZEFAT)	X			
40179	BET DAGAN		X		
40180	BEN GURION AP	X			
40199	EILAT	X		X	
ITALY					
16008	SAN VALENTINO ALLA M	X			
16022	PAGNELLA	X		X	
16033	DOBBIACO	X			
16044	UDINE CAMPOFORMIDO		X		
16052	PIAN ROSA	X			
16061	BRIC DELLA CROCE	X			
16088	BRESCIA/GHEDI	X			
16098	TREVISO ISTRANA	X			
16110	TRIESTE	X			
16134	MONTE CIMONE	X		X	
16148	CERVIA	X			
16153	CAPO MELE	X			
16158	PISA S GIUSTO	X			
16179	FRONTONE	X			
16206	GROSSETO	X			
16219	MONTE TERMINILLO	X			
16224	VIGNA DI VALLE	X		X	
16232	TERMOLI	X			

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
16245	PRATICA DI MARE	X			
16245	PRATICA DI MARE		X		X
16252	CAMPOBASSO	X			
16253	GRAZZANISE	X			
16258	MONTE SAN'T ANGELO	X		X	
16280	PONZA	X			
16310	CAPO PALINURO	X			
16320	BRINDISI AB CASALE		X		
16325	MARINA DI GINOSA	X			
16344	MONTESCURO	X			
16360	S MARIA DI LEUCA	X			
16420	MESSINA	X			
16429	TRAPANI BIRGI	X			
16429	TRAPANI BIRGI		X		
16450	ENNA	X			
16459	CATANIA SIGONELLA	X			
16480	COZZO SPADARO	X			
16522	CAPO CACCIA	X			
16546	DECIMOMANNU	X			
16550	CAPO BELLAVISTA	X		X	
16560	CAGLIARI ELMAS		X		
JORDAN					
40250	H 4 'IRWAISHED'	X			
40265	MAFRAQ	X			
40265	MAFRAQ		X		
40296	GHOR EL SAFI	X			
40310	MA'AN	X			
KAZAKHSTAN					
34398	ZHALPAKTAL	X			
34691	NOVYJ USHTOGAN	X			
LATVIA					
26346	ALUKSNE	X			
26406	LIEPAJA	X		X	
26422	RIGA		X		
26544	DAUGAVPILS	X			
LEBANON					
40100	BEYROUTH AP	X			
40100	BEYROUTH AP		X		
40103	TRIPOLI	X			
LITHUANIA					
26509	KLAIPEDA	X			
26524	SIAULIAI	X			
26531	BIRZAI	X			
26629	KAUNAS	X			
26629	KAUNAS		X		
26730	VILNIUS	X		X	
LUXEMBERG					
06590	LUXEMBOURG	X		X	
MALTA					
16597	LUQA	X		X	
MONTENEGRO					
13363	PLEVLJA	X			
13462	PODGORICA GOLUBOVCI	X			
NETHERLANDS					
06235	DE KOOY	X			
06239	PLATFORM F3	X			
06252	PLATFORM K13	X			
06260	DE BILT	X		X	
06260	DE BILT		X		

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
06310	VLISSINGEN	X			
06380	BEEK	X			
NORWAY					
01001	JAN MAYEN	X		X	
01001	JAN MAYEN		X		X
01008	SVALBARD AP	X		X	
01026	TROMSO	X		X	
01028	BJORNOYA	X		X	
01028	BJORNOYA		X		
01098	VARDO	X		X	
01152	BODO VI	X		X	
01152	BODO VI		X		
01212	ONA II	X		X	
01238	FOKSTUGU	X		X	
01241	ORLAND III	X			
01241	ORLAND III		X		
01317	BERGEN FLORIDA	X			
01400	EKOFISK		X		
01403	UTSIRA LH	X		X	
01415	STAVANGER SOLA	X			
01415	STAVANGER SOLA		X		
01465	TORUNGEN LH	X		X	
01492	OSLO BLINDERN	X			
POLAND					
12120	LEBA	X		X	
12120	LEBA		X		
12160	ELBLAG	X			
12205	SZCZECIN	X			
12295	BIALYSTOK	X			
12330	POZNAN	X			
12374	LEGIONOWO		X		
12375	WARSZAWA OKECIE	X			
12385	SIEDLCE	X		X	
12424	WROCLAW II STRACHOW	X			
12425	WROCLAW I		X		
12497	WLODAWA	X			
12566	KRAKOW BALICE	X			
PORTUGAL					
08501	FLORES	X			
08506	HORTA	X		X	
08508	LAJES SANTA RITA		X		X
08509	LAJES	X			
08512	PONTA DELGADA/NORDELA	X		X	
08515	SANTA MARIA	X			
08535	LISBOA GEOFISICA	X		X	
08546	PORTO SERRA DO PILA	X			
08548	COIMBRA CERVACHE	X			
08554	FARO AP	X			
08558	EVORA C COORD	X			
08570	CASTELO BRANCO	X			
08575	BRAGANCA	X			
08579	LISBOA GAGO COUTINH		X		
REPUBLIC OF MOLDOVA					
33815	CHISINAU	X		X	
33883	KOMRAT	X			
ROMANIA					
15023	SUCEAVA	X			
15085	BISTRITA	X		X	
15090	IASI	X			

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
15120	CLUJ NAPOCA	X			
15120	CLUJ NAPOCA		X		
15247	TIMISOARA	X			
15260	SIBIU	X			
15280	VF OMU	X		X	
15292	CARANSEBES	X			
15310	GALATI	X			
15350	BUZAU	X			
15360	SULINA	X		X	
15420	BUCURESTI BANEASA	X			
15421	BUCURESTI AFUMATI		X		
15450	CRAIOVA	X			
15480	CONSTANTA	X			
RUSSIAN FEDERATION					
22113	MURMANSK	X		X	
22165	KANIN NOS	X		X	
22217	KANDALAKSHA	X		X	
22217	KANDALAKSHA		X		
22235	KRASNOSCEL'E	X			
22271	SHOJNA		X		
22471	MEZEN'	X		X	
22520	KEM' PORT	X		X	
22522	KEM'		X		
22550	ARHANGEL'SK	X		X	
22550	ARHANGEL'SK		X		X
22619	PADANY	X			
22641	ONEGA	X			
22676	SURA	X			
22768	SHENKURSK	X			
22802	SORTAVALA	X		X	
22820	PETROZAVODSK	X			
22837	VYTEGRA	X		X	
26063	ST PETERBURG	X		X	
26157	GDOV	X			
26275	STARAYA RUSSA	X			
26359	PUSKINSKIE GORY	X		X	
26781	SMOLENSK	X		X	
26997	TRUBCHEVSK	X		X	
27037	VOLOGDA	X		X	
27051	TOT'MA	X		X	
27333	KOSTROMA	X			
27459	NIZHNIJ NOVGOROD	X			
27459	NIZHNIJ NOVGOROD		X		X
27595	KAZAN'	X		X	
27612	MOSKVA	X		X	
27612	MOSKVA (DOLGOPRUDNYJ)		X		
27648	ELAT'MA	X		X	
27675	PORETSKOE	X			
27707	SUHINICHI	X			
27707	SUHINICHI		X		
27730	RYAZAN'		X		
27823	PAVELETS	X			
27857	ZEMETCHINO	X			
27962	PENZA		X		
27995	SAMARA (BEZENCHUK)	X		X	
34009	KURSK		X		
34110	BOGORODITSKOE-FENINO	X			
34122	VORONEZ		X		
34123	VORONEZ	X		X	
34152	BALASHOV	X			

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
34163	OKTYABRSKIJ GORODOK	X		X	
34186	ERSHOV	X		X	
34579	VERHNIJ BASKUNCHAK	X			
34720	TAGANROG	X			
34740	GIGANT	X			
34866	YASHKUL'	X		X	
34880	ASTRAHAN'	X		X	
34927	KRASNODAR-KRUGLIK	X		X	
34949	STAVROPOL'	X			
37001	ANAPA	X			
37061	BUDENNOVSK	X			
37107	KRASNAYA POLYANA	X			
37126	SHADZHATMAZ	X			
37228	VLADIKAVKAZ	X			
37470	DERBENT	X		X	
37472	MAHACHKALA	X			
37663	AHTY	X			
SERBIA					
13168	NOVI SAD	X			
13274	BEOGRAD VRACAR	X			
13275	BEOGRAD KOSUTNJAK		X		
13388	NIS	X			
SLOVAKIA					
11826	PIESTANY	X			
11858	HURBANOVO	X			
11903	SLIAC	X			
11934	POPRAD TATRY	X		X	
11952	POPRAD GANOVCE		X		
11968	KOSICE	X			
SLOVENIA					
14007	RATECE	X			
14008	KREDARICA	X			
14023	CELJE	X			
14106	BILJE	X			
SPAIN					
08001	LA CORUNA	X			
08001	LA CORUNA		X		X
08015	OVIEDO	X			
08023	SANTANDER	X			
08023	SANTANDER		X		
08025	BILBAO SONDICA	X			
08027	SAN SEBASTIAN IGUELDO	X		X	
08045	VIGO PEINADOR	X			
08048	ORENSE	X			
08053	PONFERRADA	X			
08055	LEON VIRGEN DEL CAMINO	X			
08084	LOGRONO AGONCILLO	X			
08085	PAMPLONA NOAIN	X			
08130	ZAMORA	X			
08141	VALLADOLID	X			
08148	SORIA	X			
08160	ZARAGOZA AEROPUERTO	X			
08160	ZARAGOZA AEROPUERTO		X		
08171	LERIDA	X			
08175	REUS AP	X			
08181	BARCELONA AEROPUERTO	X		X	
08184	GERONA COSTA BRAVA	X			
08202	SALAMANCA MATACAN	X		X	
08215	NAVACERRADA	X		X	
08221	MADRID BARAJAS	X			

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
08221	MADRID BARAJAS		X		
08222	MADRID RETIRO	X			
08231	CUENCA	X			
08235	TERUEL	X			
08238	TORTOSA	X			
08261	CACERES	X			
08272	TOLEDO	X			
08280	ALBACETE LOS LLANOS	X		X	
08284	VALENCIA AEROPUERTO	X			
08286	CASTELLON ALMAZORA	X			
08302	MALLORCA SON BONET		X		
08306	PALMA DE MALLORCA/ SON SAN JUAN	X			
08314	MENORCA MAHON	X			
08330	BADAJOZ TALAVERA LA	X			
08348	CIUDAD REAL	X			
08360	ALICANTE EL ALTET	X			
08373	IBIZA ES CODOLA	X			
08383	HUELVA	X			
08391	SEVILLE SAN PABLO	X			
08410	CORDOBA AEROPUERTO	X		X	
08417	JAEN	X			
08419	GRANADA AEROPUERTO	X			
08430	MURCIA	X			
08430	MURCIA		X		
08451	JEREZ DE LA FRONTERA/ AEROPUERTO	X			
08482	MALAGA AEROPUERTO	X			
08487	ALMERIA AEROPUERTO	X			
SWEDEN					
02080	KARESUANDO	X			
02120	KVIKKJOKK ARRENJ	X		X	
02128	GUNNARN	X			
02185	LULEA KALLAX		X		
02196	HAPARANDA	X		X	
02226	OSTERSUND FROSON	X		X	
02287	HOLMON	X		X	
02365	SUNDSVALL HARNOSAND		X		
02366	TIMRA MIDLANDA	X			
02410	MALUNG	X		X	
02418	KARLSTAD FLYGPLATS	X			
02485	STOCKHOLM	X			
02527	GOTEBORG LANDVETTER		X		
02550	JONKOPING AXAMO	X			
02589	GOTSKA SANDON	X		X	
02590	VISBY AD	X			
SWITZERLAND AND LIECHTENSTEIN					
06601	BASEL-BINNINGEN	X			
06610	PAYERNE	X		X	
06610	PAYERNE		X		
06660	ZURICH CITY	X			
06680	SAENTIS	X		X	
06700	GENEVE AP COINTRIN	X			
06717	GRAND ST. BERNARD	X		X	
06720	SION	X			
06770	LUGANO	X			
SYRIAN ARAB REPUBLIC					
40001	KAMISHLI	X		X	
40007	ALEPPO AP	X			
40022	LATTAKIA	X		X	
40030	HAMA	X			
40045	DEIR EZZOR	X			
40061	PALMYRA	X		X	
40080	DAMASCUS AP	X			
THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA					
13577	LAZAROPOLE	X		X	
13583	BITOLA	X			
13588	SKOPJE ZAJCEV RID	X			
13591	STIP	X			
TURKEY					
17022	ZONGULDAK	X			
17026	SINOP	X			
17030	SAMSUN	X			
17030	SAMSUN		X		
17034	GIRESUN	X			
17040	RIZE	X		X	
17045	ARTVIN	X			
17050	EDIRNE	X			
17056	TEKIRDAG	X			
17062	ISTANBUL GOZTEPE	X		X	
17062	ISTANBUL GOZTEPE		X		
17069	ADAPAZARI	X			
17070	BOLU	X			
17074	KASTAMONU	X		X	
17080	CANKIRI	X			
17084	CORUM	X			
17086	TOKAT	X			
17088	GUMUSHANE	X			
17090	SIVAS	X		X	
17092	ERZINCAN	X			
17096	ERZURUM	X			
17098	KARS	X			
17099	AGRI	X			
17112	CANAKKALE	X			
17116	BURSA	X			
17123	ESKISEHIR	X			
17130	ANKARA CENTRAL	X			
17130	ANKARA CENTRAL		X		X
17140	YOZGAT	X			
17150	BALIKESIR	X			
17155	KUTAHYA	X			
17160	KIRSEHIR	X			
17170	VAN	X		X	
17188	USAK	X			
17190	AFYON	X			
17193	NEVSEHIR	X			
17196	KAYSERI/CITY	X			
17199	MALATYA BOLGE	X			
17202	ELAZIG	X			
17203	BINGOL	X			
17204	MUS	X			
17210	SIIRT	X			
17220	IZMIR GUZELYALI	X			
17220	IZMIR GUZELYALI		X		
17234	AYDIN	X			
17237	DENIZLI	X			
17240	ISPARTA	X		X	
17240	ISPARTA		X		
17244	KONYA	X			
17250	NIGDE	X			
17255	KAHRAMANMARAS	X			

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
17260	GAZIANTEP	X			
17265	ADIYAMAN	X			
17270	SANLIURFA	X			
17280	DIYARBAKIR	X			
17281	DIYARBAKIR-BOLGE		X		
17282	BATMAN	X			
17285	HAKKARI	X			
17292	MUGLA	X			
17300	ANTALYA	X			
17340	MERSIN	X			
17351	ADANA BOLGE	X			
17351	ADANA BOLGE		X		
17370	ISKENDERUN	X			
17375	FINIKE	X		X	
UKRAINE					
33213	OVRUCH	X			
33275	SUMY	X			
33301	RIVNE	X			
33317	SHEPETIVKA	X		X	
33345	KIEV	X			
33377	LUBNY	X		X	
33393	L'VIV	X			
33415	TERNOPIL'	X			
33429	KHMEL'NYTS'KYI	X			
33506	POLTAVA	X			
33526	IVANO FRANKIVS'K	X			
33562	VINNYTSIA	X			
33587	UMAN'	X		X	
33631	UZHHOROD	X			
33646	POZHEZHEVSKAYA	X			
33658	CHERNIVTSI	X			
33711	KIROVOHRAD	X			
33761	LIUBASHIVKA	X			
33791	KRYVYI RIH	X			
33837	ODESA	X			
33889	IZMAIL	X			
33902	KHERSON	X			
33915	ASKANIIA NOVA	X		X	

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
33946	SIMFEROPOL'	X			
33998	AI PETRI	X		X	
34300	KHARKIV	X			
34415	IZIUM	X			
34519	DONETS'K	X			
34523	LUHANS'K	X			
34607	PRYSHYB	X			
34712	MARIUPOL'	X			
UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND					
03005	LERWICK	X		X	
03005	LERWICK		X		X
03017	KIRKWALL	X			
03026	STORNOWAY	X		X	
03066	KINLOSS	X			
03091	DYCE	X			
03100	TIREE	X			
03162	ESKDALEMUIR	X		X	
03171	LEUCHARS	X			
03257	LEEMING	X			
03302	VALLEY	X		X	
03377	WADDINGTON	X		X	
03414	SHAWBURY	X			
03502	ABERPORTH	X			
03590	WATTISHAM	X			
03740	LYNEHAM	X			
03772	HEATHROW	X			
03797	MANSTON	X			
03808	CAMBORNE	X		X	
03808	CAMBORNE		X		X
03862	HURN	X			
03882	HERSTMONCEUX, WEST END	X		X	
03917	ALDERGROVE	X			

Note: An up-to-date list of Regional Basic Climatological Network stations is available at http://www.wmo.int/pages/prog/www/ois/rbsn-rbcn/rbsn-rbcn-home.htm.

Resolution 3 (XV-RA VI)

MANAGEMENT GROUP OF REGIONAL ASSOCIATION VI (EUROPE)

REGIONAL ASSOCIATION VI (EUROPE),

Noting:

(1) The *Abridged Final Report with Resolutions of the Fifteenth World Meteorological Congress* (WMO- No. 1026),

(2) The *Abridged Final Report with Resolutions of the Fourteenth Session of Regional Association VI (Europe)* (WMO-No. 991),

(3) The reports of the sessions of the RA VI Management Group (2008 and 2009),

(4) The *WMO Strategic Plan* (WMO-No. 1028),

(5) The RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011),

Considering:

(1) That the effectiveness of the Association depends to a large extent on the effective management of its activities and effective communication between sessions,

(2) That a management group will be required to ensure the coordinated implementation of the RA VI Strategic Plan and to evaluate the progress achieved on the expected results,

(3) That the strategic planning process will continue during the intersessional period and the Management Group should decide on necessary adjustments to the working structure of the Association accordingly,

(4) That there is need for a mechanism to address issues not handled by other working groups or task teams, in particular activities related to expected results 9 – Enhanced capabilities of National Meteorological and Hydrological Services in developing countries, particularly least developed countries, to fulfil their mandates, 10 – Effective and efficient functioning of constituent bodies and 11 – Effective and efficient management performance and oversight of the Organization, of the WMO Strategic Plan,

Decides:

(1) To re-establish the Management Group of Regional Association VI (Europe), with the following terms of reference:

   (a) To advise the president of RA VI on all matters related to the work of the Regional Association, in particular, on matters requiring actions on emerging matters during the intersessional period;

   (b) To assist the president of RA VI to prioritize, plan, coordinate and actively manage the work of the Association and its subsidiary bodies, as well as to monitor the progress achieved in the work programmes;

   (c) To ensure adequate internal structure, including establishment of relevant task teams on proposals by the chairpersons of the working groups, and working methods of the Association, and make necessary adjustments as needed to achieve the desired outcomes;

   (d) To establish timelines for the agreed deliverables and monitor progress, including the timely submission of required progress reports;

   (e) To ensure continuity of the strategic planning process and develop coordinated regional inputs for the future WMO Strategic Plan and related Operating Plan, including regional priorities and key outcomes;

   (f) To address emerging issues and challenges as identified by Regional Association VI at its fifteenth session, and ensure that these issues are adequately included in the work programmes of the working groups;

   (g) Based on the new WMO Strategic Plan and Operating Plan 2012–2015, to develop in close coordination with its subsidiary bodies and the WMO Secretariat, a Regional Strategic and Action Plan for the period 2012–2015;

(h) To coordinate the activities of the Association with respect to capacity-building and develop a capacity-building strategy taking account the needs of the Members and the existing human, financial and technical capacity-building mechanisms;

(i) To advise the president on ways and means of providing technical assistance to Members in the Region for the implementation of the RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011);

(j) To coordinate development of key performance indicators and provide performance monitoring of the activities of the Association aimed at enhancing its efficiency and effectiveness;

(k) To ensure efficient communication with Members during the intersessional period and expand the use of IT means for sharing information and promoting activities;

(l) To address on a systematic basis the need for harmonization of the capabilities for provision of hydrometeorological services between different subregions with special emphasis on countries with economies in transition;

(m) To promote partnership with other international and regional organizations, scientific institutions and financing agencies in support of achieving the desired outcomes of the RA VI Strategic Plan;

(2) To invite the president, Mr Ivan Čačić, to act as chairperson of the Management Group, which is composed of the president, the vice-president Mr Mieczyslaw Ostojski, the regional hydrological advisor to the president, Mr Markku Puupponen (Finland) (also co-chairperson of the Working Group on Climate and Hydrology), and three Directors of National Meteorological and Hydrological Services invited by the president, Mr Petteri Taalas (Finland), Mr Wolfgang Kusch (Germany) and Ms Henia Berkovich (Israel), the chairperson of the Working Group on Technology Development and Implementation Mr Jochen Dibbern (Germany), the co-chairperson of the Working Group on Climate and Hydrology Ms Anahit Hovsepyan (Armenia) and the chairperson of the Working Group on Service Delivery and Partnership Mr David Robinson (United Kingdom);

(3) The president may invite as appropriate other directors of National Meteorological and Hydrological Services, or other experts, to participate in the meetings of the RA VI Management Group, subject to availability of financial resources;

Requests the president to ensure balanced geographical representation on the Management Group and that the Group meet annually or as needed, preferably in conjunction with other meetings and events;

Authorizes the president to take needed decisions on important matters on behalf of the Association in consultation with the Management Group;

Requests the president to report to the Association during the intersessional period as needed and at its next regular session on the activities of the Management Group and relevant decisions taken on behalf of the Association;

Requests the Secretary-General to take into account the work of the Management Group of Regional Association VI (Europe) in the provision of support to the Region, especially through the Regional Office for Europe.

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Note: This resolution replaces Resolution 23 (XIV-RA VI), which is no longer in force.

Resolution 4 (XV-RA VI)

WORKING GROUP ON CLIMATE AND HYDROLOGY

REGIONAL ASSOCIATION VI (EUROPE),

Noting:

(1) The *Abridged Final Report with Resolutions of the Fourteenth Session of Regional Association VI (Europe)* (WMO-No. 991),

(2) The report of the chairperson of the Working Group on Climate-related Matters in Region VI,

(3) The Final Report of the eleventh session of the RA VI Working Group on Hydrology (2009),

(4) The *WMO Strategic Plan* (WMO-No. 1028),

(5) The RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011),

(6) The Implementation Plan for the RA VI Network of Regional Climate Centres,

(7) Resolution 4 (EC-LXI) – Establishment of Regional Climate Centres,

(8) The *Abridged Final Report with Resolutions of the Sixty-first Session of the Executive Council* (WMO-No. 1042), general summary, paragraph 3.3.2.5,

Considering:

(1) The increase in damages caused by hydrometeorological disasters,

(2) The need for enhancing the capabilities of the Members to provide more accurate climate predictions and assessments,

(3) The need for enhancing the capabilities of the Members to provide more accurate hydrological data, forecasts and assessments,

(4) The need for the Association to maintain its activities in climate- and water-related matters of particular importance to the Region,

(5) The need to take into account the requirements and capabilities of the Meteorological and Hydrological Services of the Members in the Region with regard to climate- and water-related services,

(6) Members' needs in support of climate change research and adaptation measures, including potential impacts of climate variability and change on water resources,

(7) The need for further improving cooperation between hydrological and meteorological and climatological communities to achieve better utilization of meteorological and climatological data and products for hydrological forecasts and assessments,

(8) The need for institutional cooperation with the European Commission and its subsidiary bodies in implementation of European climate- and water-related legislation,

Decides:

(1) To establish the Working Group on Climate and Hydrology, with its major contributions focused on expected results 2 – Enhanced capabilities of Members to provide better climate predictions and assessments, 3 – Enhanced capabilities of Members to provide better hydrological forecasts and assessments, and 7 – Enhanced capabilities of Members to provide and use weather, climate, water and environmental applications and services, and related RA VI Strategic Plan deliverables, with the following terms of reference:

(a) To guide and assist the full implementation of the RA VI Network of Regional Climate Centres (RCCs) in accordance with the adopted implementation plan and with the view to achieve its designation by WMO in 2011;

(b) To keep abreast and report regularly to Members on climate change research findings and adaptation needs in connection with the evolving Global Framework for Climate Services;

(c) To provide inputs regarding regional climate- and water-related requirements to support implementation of the WMO Information System and the WMO Integrated Global Observing System;

(d) To facilitate the implementation of the Regional Climate Outlook Forum mechanism in the Region;

(e) To assist in mobilizing resources and providing guidance on the data rescue efforts based on the identified needs of the Members in the Region;

(f) To maintain the fruitful cooperation established with the European Commission in climate- and water-related matters;

(g) To promote professional activities of National Hydrological Services in Europe, acting as a platform for exchange of scientific–technical expertise;

(h) To promote closer cooperation between meteorological and hydrological services at the national level especially in the countries where hydrological and meteorological services are separated;

(i) To coordinate with the Commission for Hydrology as regards activities to promote regional needs in the Commission's workplan, to share common issues relevant in the region and to avoid duplication;

(j) To liaise with the UNESCO International Hydrological Programme, United Nations Economic Commission for Europe water-related conventions, United Nations International Strategy for Disaster Reduction, Food and Agriculture Organization of the United Nations, and international river basin commissions;

(k) To liaise with the Working Group on Technology Development and Implementation and the Working Group on Service Delivery and Partnership on matters related to climate and hydrology;

(2) That the Working Group shall be composed of:

(a) Co-chairperson on Climate;

(b) Co-chairperson on Hydrology;

(c) Chairpersons of task teams and other experts as decided by the Management Group;

(3) To designate, in accordance with Regulation 32 of the WMO General Regulations, Ms Anahit Hovsepyan (Armenia) as co-chairperson on Climate and Mr Markku Puupponen (Finland) as co-chairperson on Hydrology of this Working Group;

(4) To request the co-chairpersons to:

(a) Submit to the Management Group within three months a work programme for the period 2010–2013 with due account of the deliverables outlined in the RA VI Strategic Plan;

(b) Submit proposals to the Management Group for establishment of task teams, including terms of reference, as necessary, to facilitate successful implementation of the RA VI Strategic Plan in the area of responsibility of the Working Group;

(c) Submit an annual progress report to the president of the Regional Association and WMO Secretariat in due time before Executive Council sessions not later than six months before the next session of the Association;

(d) Submit a final report to the president of the Regional Association at least three months before the next session of the Association;

Further decides:

(1) That the work of the Working Group shall be organized in two open expert groups, one on Climate and one on Hydrology;

(2) To invite Members to nominate experts who are committed to serve actively on the Working Group and expert groups.

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Note: This resolution replaces Resolution 8 (XIV-RA VI) and Resolution 17 (XIV-RA VI), which are no longer in force.

Resolution 5 (XV-RA VI)

WORKING GROUP ON SERVICE DELIVERY AND PARTNERSHIP

REGIONAL ASSOCIATION VI (EUROPE),

Noting:

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

(2) Resolution 28 (Cg-XIV) – Role and operation of National Meteorological and Hydrological Services,

(3) The *WMO Strategic Plan* (WMO-No. 1028),

(4) The RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011),

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

(6) Resolution 5 (EC–LX) – Executive Council Working Group on Disaster Risk Reduction and Service Delivery,

(7) The relevant reports of working groups and other bodies established by Regional Association VI at its fourteenth session,

Considering:

(1) That, according to the RA VI Strategic Plan, service delivery is the primary area for achieving the desired outcomes related to:

(a) The safety of life and property,

(b) The safety and efficiency of transport, industries and agriculture,

(2) That sustainable development and environmental protection should be the natural result of weather-, climate- and water-related services,

(3) The need for:

(a) Better understanding the requirements of governmental bodies, economic sectors, the media and the general public,

(b) Better use of RA VI capabilities to improve service production and delivery and the use of resources, including the quality and completeness of hydrological and meteorological information for application in development planning and disaster preparedness,

(c) Developing regional cooperation to provide a broader range of national, subregional and regional services,

(d) Creating proper mechanisms for measuring and documenting the socio-economic benefits of the meteorological, climatological and hydrological services provided by Members of RA VI,

(e) Enhancing the capabilities of Members in disaster risk reduction,

Decides:

(1) To establish a Working Group on Service Delivery and Partnership, with its major contributions focused on expected results 6 – Enhanced capabilities of Members in multi-hazard early warning and disaster prevention and preparedness, 7 – Enhanced capabilities of Members to provide and use weather, climate, water and environmental applications and services, and 8 – Broader use of weather-, climate- and water-related outputs for decision-making and implementation by Members and partner organizations, of the WMO Strategic Plan and related regional expected results, with the following terms of reference:

(a) To foster implementation of best practices and optimized use of existing capabilities in the Region to improve service production and delivery;

(b) To provide input to the technical commissions of the weather-, climate- and water-related technical and scientific service delivery needs of the Region;

(c) To provide guidance on strengthening the collaboration, partnerships and outreach activities at the national and international levels between providers of weather-, climate- and water-related products, services and activities and end-users, including disaster prevention and civil protection agencies;

(d) To investigate common methods of defining and determining the socio-economic benefits of meteorological and hydrological service provision;

(e) To develop and prioritize sustainable programmes for capacity-building in service delivery and disaster risk reduction for the Region;

(f) To keep under review the regional developments in aeronautical and marine meteorology;

(g) To cooperate with technical commissions and their expert teams in using the outputs from verification to improve services and share the results within the Region;

(h) To share experience on how to measure public perception in respect to both warnings and forecasts, with a view to providing guidance and advice to the Members;

(i) To address disaster risk reduction related priorities in a comprehensive fashion, and in alignment with "cooperation model" projects in disaster risk reduction;

(j) To liaise with the Working Group on Technology Development and Implementation and the Working Group on Climate and Hydrology on relevant aspects of service delivery and partnership;

(2) That the Working Group shall be composed of:

(a) The chairperson and vice-chairperson;

(b) Chairpersons of task teams and other experts nominated by Members as decided by the Management Group;

(3) To designate, in accordance with Regulation 32 of the WMO General Regulations, Mr David Robinson (United Kingdom) as chairperson of the Working Group and Mr Axel Thomalla (Germany) as vice-chairperson;

(4) To request the chairperson to:

(a) Submit to the Management Group within three months a work programme for the period 2010–2013 with due account of the deliverables outlined in the RA VI Strategic Plan;

(b) Submit proposals to the Management Group for establishment of task teams, including terms of reference, as necessary, to facilitate successful implementation of the RA VI Strategic Plan in the area of responsibility of the Working Group;

(c) Submit an annual progress report to the president of the Regional Association and the WMO Secretariat in due time before Executive Council sessions;

(d) Submit a final report to the president of the Regional Association at least three months before the next session of the Association;

(5) To invite Members to nominate experts who are committed to serve actively on the Working Group.

Note: This resolution replaces Resolutions 14 (XIV-RA VI), 15 (XIV-RA VI), 16 (XIV-RA VI) and 19 (XIV-RA VI), which are no longer in force.

Resolution 6 (XV-RA VI)

WORKING GROUP ON TECHNOLOGY DEVELOPMENT AND IMPLEMENTATION

REGIONAL ASSOCIATION VI (EUROPE),

Noting:

(1) Resolution 2 (Cg-XV) – World Weather Watch Programme for 2008–2011,

(2) Resolution 3 (Cg-XV) – Global Observing System,

(3) Resolution 5 (Cg-XV) – Instruments and Methods of Observation Programme,

(4) Resolution 11 (Cg-XV) – Global Climate Observing System,

(5) The *WMO Strategic Plan* (WMO-No. 1028),

(6) Resolution 30 (Cg-XV) – Towards enhanced integration between WMO observing systems,

(7) Resolution 40 (Cg-XII) – WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities,

(8) Resolution 3 (EC-LIX) – Executive Council Working Group on the WMO Integrated Global Observing System and the WMO Information System,

(9) The WIGOS Concept of Operations and the WIGOS Development and Implementation Plan, as adopted by the Executive Council at its sixty-first session in June 2009,

(10) The RA VI Strategic Plan for the Enhancement of Meteorological and Hydrological Services in the Region (2008–2011),

Considering:

(1) That the World Weather Watch data and products are of vital importance to RA VI Members to meet existing and new requirements for meteorological services,

(2) That the implementation of the World Weather Watch in the Region needs to be kept under constant review,

(3) The recommendation by the Executive Council at its sixty-first session that regional associations should actively collaborate in testing, developing and implementing the WMO Integrated Global Observing System (WIGOS) concept, and provide their input to the WIGOS Development and Implementation Plan,

(4) The importance of WIGOS pilot projects,

(5) That the support and involvement of regional associations in the WMO Information System (WIS) development was a crucial factor for ensuring a successful implementation and a shared ownership of the system,

(6) The need to complete the tasks related to science and technology development and implementation for weather, climate and water outlined in the RA VI Strategic Plan,

(7) The progress made in establishing numerical weather prediction consortia and ensemble prediction systems, and further need for cooperation,

Decides:

(1) To establish a Working Group on Technology Development and Implementation in Region VI, with its major contributions focused on expected results 1 – Enhanced capabilities of Members to produce better weather forecasts and warnings, 4 – Integration of WMO observing systems, and 5 – Development and implementation of the new WMO Information System, with the following terms of reference:

(a) To provide overall technical guidance, assistance and support for the implementation of the WIGOS and WIS concepts in Regional Association VI;

(b) To contribute to the development and implementation of WIGOS in the Region;

(c) To coordinate the redesign of the Regional Basic Synoptic Network/Regional Basic Climatological Network as a WIGOS Demonstration Project;

(d) To coordinate WIGOS implementation in the Region taking into account the planning and implementation of the WMO Information System;

(e) To coordinate the implementation of the WMO Information System, including further improvement of the Regional Meteorological Data Communication Network;

(f) To monitor availability of data, identify deficiencies and propose measures for their resolution;

(g) To monitor and contribute to developments in data-processing and forecasting systems, make recommendations to strengthen collaboration, represent the Region in the Commission for Basic Systems Implementation Coordination Team on Data-Processing and Forecasting System;

(h) To promote greater access to and exploitation of ensemble prediction products, nowcasting techniques and long-range forecasting;

(i) To keep under review regional practices and guidelines relevant to observing networks and instruments and methods of observation, and to foster an efficient collaborative network of Regional Instrument Centres in RA VI;

(j) To serve as a focal point for World Weather Research Programme–Thorpex activities in the Region;

(k) To liaise with the Working Group on Climate and Hydrology and the Working Group on Service Delivery and Partnership on matters related to technology development and implementation;

(2) That the Working Group shall be composed of:

(a) Chairperson and vice-chairperson;

(b) Chairpersons of task teams and other experts as decided by the Management Group;

(3) To designate, in accordance with Regulation 32 of the WMO General Regulations, Mr Jochen Dibbern (Germany) as chairperson of the Working Group, and Mr Matteo Dell'Acqua (France) as vice-chairperson;

(4) To request the Chairperson to:

(a) Submit to the Management Group within three months a work programme for the period 2010–2013 with due account of the deliverables outlined in the RA VI Strategic Plan;

(b) Submit proposals to the Management Group for establishment of task teams, including terms of reference, as necessary, to facilitate successful implementation of the RA VI Strategic Plan in the area of responsibility of the Working Group;

(c) Submit an annual progress report to the president of the Regional Association and WMO Secretariat in due time before Executive Council sessions;

(d) Submit a final report to the president of the Regional Association at least three months before the next session of the Association;

(5) To invite Members to nominate experts who are committed to serve actively on the Working Group.

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Note: This resolution replaces Resolutions 1 (XIV-RA VI), 5 (XIV-RA VI), 6 (XIV-RA VI), 11 (XIV-RA VI), 12 (XIV-RA VI), 13 (XIV-RA VI), 20 (XIV-RA VI) and 21 (XIV-RA VI), which are no longer in force.

Resolution 7 (XV-RA VI)

REVIEW OF PREVIOUS RESOLUTIONS AND RECOMMENDATIONS OF THE ASSOCIATION

REGIONAL ASSOCIATION VI (EUROPE),

Noting paragraph 3.7.1 of the general summary of the ninth session of the Executive Committee,

Considering:

(1) That a number of its resolutions adopted before its fifteenth session have been revised and incorporated in resolutions of the fifteenth session,

(2) That others of its previous resolutions have been incorporated in appropriate WMO publications or have become obsolete,

(3) That some of the previous resolutions are still to be implemented,

Decides:

(1) To keep in force Resolutions 11 (XI-RA VI) and 16 (XIII-RA VI);

(2) Not to keep in force the other resolutions adopted before its fifteenth session;

(3) To publish the text of the resolutions kept in force in the annex to this resolution.

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Note: This resolution replaces Resolution 24 (XIV-RA VI), which is no longer in force**.**

Annex to Resolution 7 (XV-RA VI)

REVIEW OF PREVIOUS RESOLUTIONS AND RECOMMENDATIONS OF THE ASSOCIATION

RESOLUTION 11 (XI-RA VI)

USE OF INMARSAT FOR THE COLLECTION OF SHIPS' METEOROLOGICAL AND OCEANOGRAPHIC REPORTS

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 19 (Cg-XI) – The collection and dissemination of marine meteorological and oceanographic information using INMARSAT,

(2) The operation of Coast Earth Stations (CES) of INMARSAT in Region VI,

(3) The equipping of an increased number of ships participating in the WMO Voluntary Observing Ships (VOS) scheme with Ship Earth Stations (SES) of INMARSAT, in particular with the INMARSAT-C facility,

CONSIDERING:

(1) The need to increase the number of ships' meteorological and oceanographic reports from most of the sea areas of Region VI,

(2) The considerable improvements to be expected in the receipt of marine meteorological and oceanographic observations from ships at sea through the enhanced use of the INMARSAT system,

(3) The cost-savings which will accrue to those Members collecting such reports through INMARSAT by the increased use of the new INMARSAT-C facility for this purpose,

RECOGNIZING WITH APPRECIATION that certain Members operating INMARSATCES have already arranged through their CES to accept ships' meteorological and oceanographic reports that are of general value to all Members of WMO,

BEING CONCERNED, however, that problems continue to be related to the timely redistribution to the countries closest to the geographical origin of reports collected through INMARSAT,

URGES:

(1) Members concerned to make every effort to ensure the timely redistribution of reports collected through INMARSAT to countries in the areas of the geographical origins of those reports;

(2) All Members in the Region operating VOS equipped with INMARSAT-C to make every effort for those ships to be supplied with the new software package for the compilation and transmission of meteorological reports through INMARSAT-C, to ensure the maximum efficiency and cost-effectiveness of such an operation;

REQUESTS the Secretary-General to assist Members in the implementation of this resolution.

RESOLUTION 16 (XIII-RA VI)

SUPPORT FOR THE JOINT WMO/IOC TECHNICAL COMMISSION FOR OCEANOGRAPHY AND MARINE METEOROLOGY

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 14 (Cg-XIII) – Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM),

(2) IOC Assembly Resolution XX-12 – The Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM),

(3) The *Abridged Final Report with Resolutions and Recommendations of the First Session of the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology* (WMO-No. 931),

CONSIDERING that oceanographic and marine meteorological observations not only make a significant contribution to operational meteorology and the provision of marine services, but are also essential to global climate studies generally,

RECOGNIZING:

(1) That JCOMM is now the appropriate and sole WMO body for the international coordination and regulation of a global operational ocean observing, data management and services system,

(2) That some Members of the Association are actively involved in the deployment and maintenance of a variety of ocean observation facilities, for both operational and research purposes,

(3) That Members of the Association are also increasingly being required to provide coordinated meteorological and oceanographic services for a large variety of marine user groups,

(4) That GTS will continue to be essential for the operational collection and exchange of many types of ocean data,

RECOGNIZING FURTHER that a substantial increase in the amount of ocean data available operationally is needed to satisfy the requirements of operational meteorology, oceanographic services and research and global climate studies for such data,

URGES Members:

(1) To continue and, where possible, expand their existing operational ocean observing system facilities and activities, as contributions to the WWW, GCOS and GOOS and with international coordination effected through JCOMM;

(2) To participate actively in the planning and implementation of these systems and in the work of JCOMM;

(3) To coordinate with appropriate national oceanographic agencies and institutions to ensure the long-term operational maintenance of oceanographic observing systems;

(4) To coordinate with appropriate national oceanographic agencies and institutions in developing oceanographic data management capabilities and oceanographic services;

(5) To enhance two-way ship-shore telecommunication arrangements for oceanographic data and products, in particular through the greater use of satellite-based telecommunications facilities such as the Inmarsat and Argos systems;

REQUESTS the Secretary-General to take any action considered necessary, and within the available budgetary resources, to assist Members to participate in the development and maintenance of JCOMM.

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Note: This resolution replaces Resolution 10 (XII-RA VI), which is no longer in force.

APPENDIX

LIST OF PARTICIPANTS

1. Officers of the session

President	Mr Daniel K. Keuerleber-Burk
Vice-president	Dr Andris Leitass

2. Representatives of WMO Members within the Region

Armenia

Levon Vardanyan	Principal Delegate
Anahit Hovsepyan (Ms)	Delegate

Austria

Fritz Neuwirth	Principal Delegate
Ernsi Rudel	Alternate

Azerbaijan

Sahib Khalilov	Delegate

Belarus

Anatoli I. Palishchuk	Principal Delegate

Belgium

Henri Malcorps	Principal Delegate
Emmanuel Roulin	Alternate
Hugo De Backer	Delegate
Daniel Gellens	Delegate

Bosnia and Herzegovina

Nikola Radovanovic	Principal Delegate
Enes Sarač	Delegate
Muhamed Muminovic	Delegate

Bulgaria

Konstantin Tsankov	Principal Delegate

Croatia

Ivan Čačić	Principal Delegate
Krešo Pandžić	Alternate
Vlasta Tutiš	Delegate
Boris Grigic	Delegate
Ivana Zerec (Ms)	Delegate
Dušan Trninić	Delegate
Branka Ivančan Picek	Delegate

Cyprus

Silas Michaelides	Principal Delegate

Czech Republic

Ivan Obrusník	Principal Delegate
Karel Vančura	Delegate
Jan Kubát	Delegate

Denmark

Peter Aakjaer	Principal Delegate
Flemming Jenle	Delegate

Finland

Petteri Taalas	Principal Delegate
Maria Hurtola (Ms)	Alternate
Markku Puupponen	Delegate
Martti Heikinheimo	Delegate
KeijoLeminen	Delegate

France

François Jacq	Principal Delegate
Marc Gillet	Alternate
Ariane de Billy (Mrs)	Alternate
Caroline Wittwer (Mrs)	Delegate
Bernard Strauss	Delegate
Mariannick Lecorcher (Mrs)	Delegate
Matteo Dell'Acqua	Delegate
Patrick Bénichou	Delegate

Georgia

Ramaz Chitanava	Principal Delegate
Shalva Javakhadze	Delegate

Germany

Wolfgang Kusch	Principal Delegate
Detlev Fromming	Alternate
Geerd-Rudiger Hoffmann	Delegate
Jochen Dibbern	Delegate
Axel Thomalla	Delegate
Stefan Rosner	Delegate

Greece

Constantina Mita (Mrs)	Principal Delegate
Heleni Michalopoulou	Delegate

Hungary

László Bozó	Principal Delegate
Ildikó Dobi Wantuch (Ms)	Delegate
Zsuzsanna Buzás (Ms)	Delegate

Iceland

Árni Snorrason	Principal Delegate

Ireland

Declan Murphy	Principal Delegate

Isr**ael**

Henia Berkovich (Mrs)	Principal Delegate

Italy

Massimo Capaldo	Principal Delegate
Constante Desimone	Delegate
Sergio Pasquini	Delegate
Paolo Pagano	Delegate

Jordan

AbdelHalim AbuHazim	Principal Delegate

Latvia

Andris Leitass	Principal Delegate

Lithuania

Vida Augulienė (Mrs)	Principal Delegate

Malta

Charles Galdies	Principal Delegate

Montenegro

Luka Mitrović	Principal Delegate
Ivana Pavicević (Ms)	Delegate

Netherlands

Frits J.J. Brouwer	Principal Delegate
Frank Grooters	Alternate
Frank Lantsheer	Delegate
Theo L. Van Stijin	Delegate

Norway

Antón Eliassen	Principal Delegate
Lillian Svendsen (Ms)	Alternate
Jens Sunde	Alternate
Roar Skålin	Delegate

Poland

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The former Yugoslav Republic of Macedonia

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Turkey

Mahmut Kayhan	Principal Delegate
Hakan Aksu	Delegate

United Kingdom

John Hirst	Principal Delegate
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Ann Calver (Ms)	Delegate
Richard Pettifer	Delegate
Stephen Manktelow	Delegate

3. Representatives of WMO Members outside Region VI

United States of America

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Dan Thompson	Observer
Renee Tatusko (Ms)	Observer

4. WMO Technical Commissions

Fred Branski (President of CBS) Observer

5. Representatives of international organizations

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Network of European Meteorological Services (EUMETNET)
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6. Scientific lecturers

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7. Other participants

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Claude Alesch (Luxembourg)
Viacheslav Lipinsky (Ukraine)

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